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ÖSTERREICHISCHES INSTITUT FÜR WIRTSCHAFTSFORSCHUNG

# KOSTEN-NUTZEN-ANALYSE DES BILDUNGSSYSTEMS AM BEISPIEL DER SEKUNDARSTUFE II

## TEIL B: LÄNDERSTUDIEN

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# KOSTEN-NUTZEN-ANALYSE DES BILDUNGSSYSTEMS AM BEISPIEL DER SEKUNDARSTUFE II

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## TEIL B: LÄNDERSTUDIEN

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Studie des Österreichischen Instituts für Wirtschaftsforschung im Auftrag des Bundesministeriums für Bildung, Wissenschaft und Kultur

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# KOSTEN-NUTZEN-ANALYSE DES BILDUNGSSYSTEMS – LÄNDERSTUDIEN

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# RESÜMEE: AUSTRALIEN, DÄNEMARK, NIEDERLANDE UND VEREINIGTES KÖNIGREICH

GUDRUN BIFFL

*Vergleichende Bildungsforschung kann dazu beitragen, dass wir unsere eigene Vergangenheit verstehen, dass wir uns in der Gegenwart besser zurechtfinden, und dass wir Anhaltspunkte für die Anforderungen der Zukunft gewinnen.*

(H.J. Noah, 1983) Nutzen und Ausnutzung der vergleichenden Bildungsforschung, Berufungsvortrag als Gardner, Cowles Professor für Bildungsökonomie, 1. November 1983, Columbia University, N. Y.

## 1. Einleitung

Die wirtschaftliche Entwicklung der Länder, die hier untersucht werden, war von einer mehr oder weniger starken Rezession und Inflation in den siebziger und achtziger Jahren geprägt, die von einer stabilen, nachhaltigen wirtschaftlichen Erholung in den neunziger Jahren abgelöst wurde. Die Niederlande hatten in den neunziger Jahren die größten wirtschaftlichen Erfolge zu verzeichnen, allerdings erst im Gefolge besonders tiefgreifender Reformen als Reaktion auf die ausgeprägte wirtschaftliche Krise der achtziger Jahre, die als "Dutch Disease" in die Literatur Eingang gefunden hat (Abbildung 1). Jedoch nicht nur Holland hat spätestens in den neunziger Jahren substantielle Reformen eingeleitet, die auch den Bildungsbereich umfassten, sondern alle Länder, die hier untersucht werden. Reformen waren angesagt, da sich die sozialökonomischen Funktionsmechanismen der Volkswirtschaften im Gefolge der verstärkten Globalisierung der Märkte und des Wandels sozialer Normen änderten, was eine Anpassung der institutionellen Rahmenbedingungen an die geänderten Anforderungen notwendig machte. Der Reformpfad und der gewählte Maßnahmenmix war in den einzelnen Ländern sehr unterschiedlich, da die Problemlage auch nicht immer

dieselbe war. Das System der Aus- und Weiterbildung stellte allerdings in allen Ländern einen integralen Bestandteil der Reformen dar. Der technologische Wandel, der mit der Globalisierung Hand in Hand ging, ist nämlich für das System der berufsorientierten Aus- und Weiterbildung eine besondere Herausforderung. Alle Regierungen und die Wirtschaft haben daher der berufsorientierten Aus- und Weiterbildung in den neunziger Jahren besonderes Augenmerk geschenkt und ihr in den politischen Programmen eine hohe Priorität eingeräumt. Aus- und Weiterbildungsmaßnahmen stellen Investitionen in das Humankapital dar, die ebenso wichtig sind wie Investitionen in den physischen Kapitalstock. Sie sind ein wichtiger Bestandteil des wirtschaftlichen Entwicklungspotentials eines Landes.

Im Vereinigten Königreich geht man davon aus, dass man in einigen Regionen und Wirtschaftsbranchen einen merklichen Facharbeitermangel hat, der die wirtschaftlichen Entwicklungsmöglichkeiten einschränkt. Besonders mangelt es an berufsorientierten, mittleren Fachqualifikationen, vor allem im Informations- und Kommunikationstechnologiebereich, aber auch an Ingenieuren und Baumeistern. Um die Engpässe besser identifizieren und näher definieren zu können, eine Voraussetzung für die Lösung des Problems, wurde 1998 eine hochrangige Qualifikationsforschungsagentur gegründet (Skills Task Force), die die Sozialpartner, Vertreter des Staates und Forscher an einen Tisch bringt und Konzepte und Curricula entwickeln hilft. Ähnliches gilt für Australien. Auch hier wurde eine Forschungsagentur gegründet (Australian National Training Authority, kurz ANTA), die Engpässe an berufsorientierter Aus- und Weiterbildung feststellen und neue Ausbildungswege auf nationaler Ebene organisieren soll.

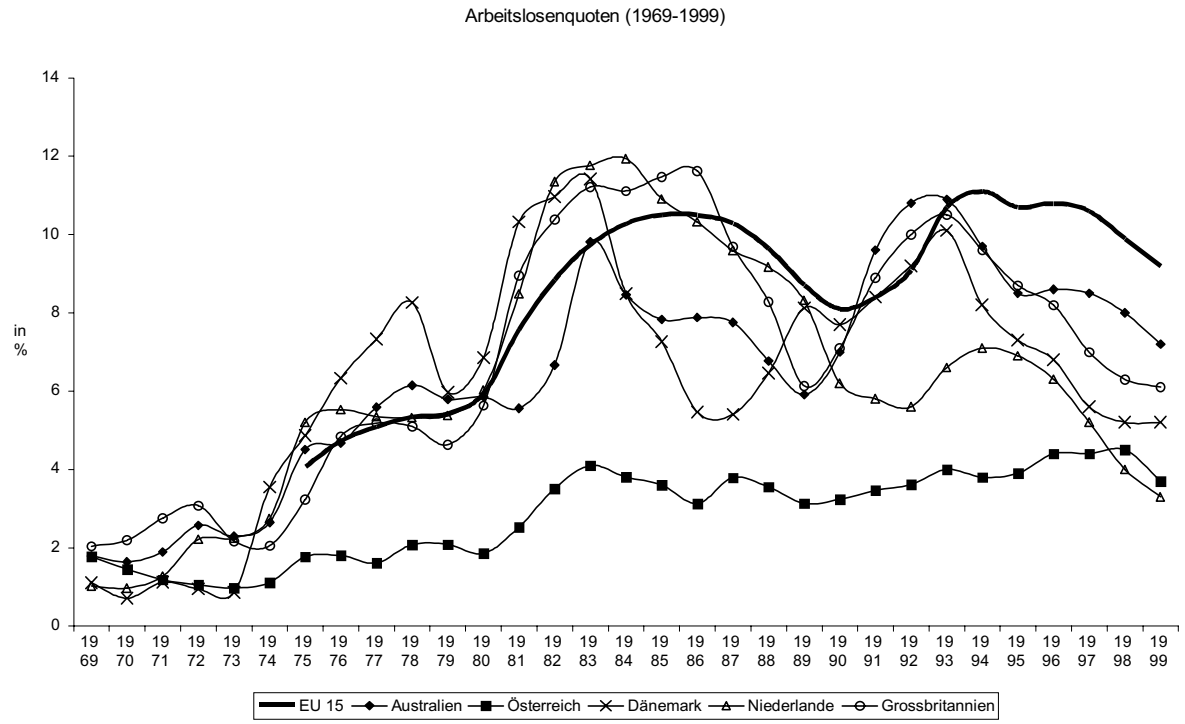
Dänemark kann, im Gegensatz zu den angelsächsischen Ländern, auf einem differenzierten berufsorientierten Fachausbildungssystem, das dem Österreichs ähnlich ist, aufbauen. Der Facharbeitermangel ist daher im mittleren Qualifikationssegment nicht so ausgeprägt, nichtsdestotrotz gibt es einen Mangel an gewissen Qualifikationen. Dänemark hat daher in den neunziger Jahren das Bildungssystem weiter ausgebaut. Ein Schwerpunkt lag auf der Dezentralisierung des Bildungssystems und der Einräumung größerer Autonomie und Selbstverantwortung an einzelne Schulen. Eine Folge dieser Reorientierung war eine Reorganisation des Finanzierungssystems. Das Ziel war die Entwicklung eines Systems, das von institutioneller Eigenständigkeit und Selbstverantwortung geprägt ist, ohne Kompromisse im Bereich der Bildungsstandards einzugehen, und das kostenbewusst und effizient arbeitet. Die inhaltlichen Ziele waren

- eine bessere Ausrichtung der berufsorientierten mittleren und höheren Ausbildung an den Bedürfnissen des Arbeitsmarktes;
- den Bildungsinstitutionen vor Augen zu führen, welchen Zweck die Ausbildung erfüllen soll (Konsumentenorientierung), und
- Anreize für Kostenbewusstsein zu schaffen.

In den Niederlanden gab es im Gegensatz dazu keine grundsätzlichen Reformen im Bildungssystem. Die wesentlichen Reformschritte, die den wirtschaftlichen Aufschwung ermöglichten, waren fiskal-, sozial- und arbeitsmarktpolitischer Natur. Die Änderungen in der Bildungspolitik unterstützten nur diese Reformpolitik. Das holländische Bildungssystem kann, ebenso wie das dänische, auf eine lange Tradition der berufsorientierten Ausbildung zurückblicken.

In allen vier Ländern, die hier untersucht wurden, zog der Wandel der Wirtschaftsstruktur weg vom industriell-gewerblichen Bereich und der Landwirtschaft hin zu Dienstleistungen eine Reorientierung des Ausbildungssystems nach sich. Jugendliche, die nicht die Qualifikationen aufweisen, die der Arbeitsmarkt verlangt, haben ebenso Probleme am Arbeitsmarkt wie ältere Arbeitskräfte, die sich nicht rasch genug auf die neuen Aufgaben umstellen konnten.

*Abbildung 1: Entwicklung der Arbeitslosigkeit im Ländervergleich*




Der Bildungsgrad der Bevölkerung, die Dauer der formalen schulischen Ausbildung und der Weiterbildung in Betrieben, werden üblicherweise als Indikator für den Humankapitalstock eines Landes herangezogen. Die Fähigkeit, sich in Wort und Schrift zu artikulieren, hängt zwar vom Bildungsgrad des einzelnen ab, der Konnex zwischen höchster abgeschlossener Ausbildung und Problemlösungskapazität ist allerdings, im Gegensatz zur allgemeinen Meinung, kein einfacher. Eine Erhebung der OECD zum Ausmaß der Lese/und Schreibfähigkeit der Erwachsenen, sowie der Fähigkeit, Probleme zu lösen, die der komplexe Alltag verlangt (Adult Literacy Survey), an dem

Österreich und Dänemark nicht teilgenommen haben, hat eine große Spannweite der Lese- und Schreibfähigkeit zwischen den Ländern aufgezeigt. Australien liegt im internationalen Mittelfeld und Schweden an der Spitze in Bezug auf die Artikulationsfähigkeit und Problemlösungskapazität ihrer Erwachsenen.

*Übersicht 1: Anteil der Bevölkerung mit einem bestimmten Ausbildungsniveau, nach Alter und Geschlecht (1998)*

| | | Mindestens Höhere Sekundarstufe[1] | | | | | Mindestens Tertiärstufe Typ A[2] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 25-64 | 25-34 | 35-44 | 45-54 | 55-64 | 25-64 | 25-34 | 35-44 | 45-54 | 55-64 |
| Australien | Männer | 63 | 69 | 66 | 61 | 54 | 17 | 17 | 19 | 17 | 11 |
| | Frauen | 49 | 60 | 50 | 43 | 35 | 17 | 21 | 18 | 14 | 9 |
| Österreich[3] | Männer | 80 | 87 | 84 | 76 | 68 | 8 | 8 | 9 | 8 | 7 |
| | Frauen | 66 | 80 | 71 | 60 | 46 | 5 | 6 | 6 | 3 | 2 |
| Dänemark | Männer | 81 | 85 | 80 | 83 | 73 | 6 | 8 | 6 | 7 | 5 |
| | Frauen | 76 | 86 | 79 | 72 | 60 | 4 | 6 | 5 | 4 | 2 |
| Finnland[3] | Männer | 67 | 82 | 76 | 61 | 43 | 14 | 15 | 16 | 14 | 10 |
| | Frauen | 69 | 86 | 80 | 63 | 40 | 12 | 14 | 14 | 11 | 7 |
| Deutschland | Männer | 89 | 89 | 90 | 89 | 86 | 17 | 15 | 19 | 20 | 15 |
| | Frauen | 79 | 86 | 84 | 78 | 66 | 11 | 13 | 14 | 11 | 5 |
| Niederlande | Männer | 69 | 73 | 70 | 68 | 61 | 27 | 28 | 29 | 29 | 22 |
| | Frauen | 60 | 75 | 65 | 51 | 39 | 21 | 27 | 23 | 18 | 12 |
| Schweden | Männer | 74 | 87 | 77 | 70 | 59 | 13 | 9 | 14 | 15 | 12 |
| | Frauen | 78 | 88 | 83 | 76 | 61 | 13 | 11 | 13 | 15 | 11 |
| Schweiz | Männer | 87 | 92 | 86 | 87 | 83 | 19 | 20 | 19 | 20 | 18 |
| | Frauen | 76 | 85 | 79 | 72 | 60 | 9 | 11 | 11 | 7 | 4 |
| Vereinigtes Königreich | Männer | 70 | 68 | 72 | 72 | 64 | 17 | 18 | 18 | 17 | 12 |
| | Frauen | 50 | 55 | 51 | 47 | 39 | 14 | 16 | 15 | 13 | 9 |
| USA | Männer | 86 | 87 | 87 | 87 | 80 | 28 | 26 | 27 | 32 | 26 |
| | Frauen | 87 | 89 | 89 | 88 | 79 | 25 | 29 | 26 | 26 | 18 |
| Durchschnitt | Männer | 64 | 72 | 67 | 61 | 50 | 15 | 16 | 17 | 16 | 12 |
| | Frauen | 58 | 72 | 63 | 52 | 38 | 12 | 16 | 13 | 10 | 6 |

Q: *OECD* (2000A), S. 37. – [1] ISCED 3C Kurzprogramme sind nicht inkludiert. – [2] Die Kategorie "Mindestens Tertiärstufe Typ A" beinhaltet Tertiärstufe Typ A und fortgeschrittene Forschungsprogramme – [3] Referenzjahr 1997.

Die Entwicklung der Bildungsstruktur der Bevölkerung nach höchster abgeschlossener Ausbildung legt Zeugnis über die Schwerpunkte der Bildungspolitik eines Landes ab. Aus Übersicht 1 geht hervor, dass der Anteil von Personen, die zumindest die obere Sekundarstufe besucht haben, im Jahre 1998 in Österreich und Dänemark deutlich höher war als im Vereinigten Königreich, Australien oder den Niederlanden. Das gilt aber nicht für die Tertiärausbildung. Die Strukturdaten legen nahe, dass Österreich und Dänemark einen Schwerpunkt in der berufsorientierten mittleren und höheren Ausbildung haben. Die Verteilung der Ausbildung ist in Australien, den Niederlanden und dem Vereinigten Königreich polarisierter als in Österreich und Dänemark. Der Anteil der unqualifizierten Personen mit maximal Pflichtschulabschluss und der höchstqualifizierten, mit universitärer oder nichtuniversitärer Tertiärausbildung, ist in den letzteren höher als in Österreich und Dänemark. Übersicht 2 hebt diesen Verteilungsunterschied deutlich hervor.

*Übersicht 2: Berufliche Fachqualifikationen in verschiedenen Ländern Europas (um 1990)*
*Prozentanteil an der Erwerbsbevölkerung*

| | Großbritannien 1989 | Frankreich 1988 | Deutschland 1988 | Niederlande 1989 | Schweiz 1991 |
|---|---|---|---|---|---|
| Akademiker | 11 | 7 | 11 | 8 | 11 |
| Techniker | 7 | 7 | 7 | 19 | 9 |
| Handwerker | 18 | 33 | 56 | 38 | 57 |
| Keine Fachqualifikation | 64 | 53 | 26 | 35 | 23 |

Quelle: *OECD* (1995), S. 53.

Es ist aber zu bedenken, dass die Struktur der Bevölkerung nach höchster abgeschlossener Ausbildung keinen ausreichenden Einblick in die Qualifikationsstruktur der Arbeitskräfte verleiht. Die Erwerbsbeteiligung unterscheidet sich nämlich nach Ausbildungsgrad – sie steigt mit zunehmendem Bildungsgrad. Diese Aussage hat Allemeingültigkeit; dennoch ist zu bedenken, dass sozioökonomische Faktoren und institutionelle Regelungen, insbesondere Steuersysteme, das Niveau der Einbindung der Bevölkerung aller Bildungsschichten in das Erwerbsleben stark beeinflussen. Insbesondere Frauen weisen starke internationale Unterschiede der Erwerbsbeteiligung auf.

*Übersicht 3: Erwerbsquoten nach höchster abgeschlossener Ausbildung und Geschlecht (1998)*

| | | Pflichtschule | Höhere Sekundarstufe und nicht tertiäre Postsekundarstufe | Tertiärstufe (Typ B) | Tertiärstufe (Typ A) und fortgeschr. Forschungsprogramme | Alle Bildungsstufen |
|---|---|---|---|---|---|---|
| | | ISCED 0/1/2 | ISCED 3/4 | ISCED 5B | ISCED 5A/6 | |
| Australien | Männer | 81 | 89 | 92 | 94 | 87 |
| | Frauen | 55 | 66 | 78 | 82 | 64 |
| Österreich* | Männer | 72 | 86 | 89 | 93 | 84 |
| | Frauen | 48 | 68 | 81 | 85 | 63 |
| Dänemark | Männer | 77 | 86 | 92 | 95 | 86 |
| | Frauen | 56 | 79 | 87 | 96 | 76 |
| Finnland* | Männer | 69 | 86 | 88 | 92 | 81 |
| | Frauen | 60 | 78 | 85 | 89 | 75 |
| Frankreich | Männer | 77 | 89 | 93 | 91 | 85 |
| | Frauen | 57 | 76 | 83 | 83 | 69 |
| Deutschland | Männer | 77 | 84 | 93 | 88 | 85 |
| | Frauen | 46 | 69 | 81 | 83 | 66 |
| Niederlande** | Männer | 78 | 88 | x(5A/6) | 91 | 86 |
| | Frauen | 44 | 70 | x(5A/6) | 82 | 62 |
| Norwegen* | Männer | 79 | 91 | 96 | 93 | 90 |
| | Frauen | 61 | 81 | 93 | 90 | 80 |
| Schweden** | Männer | 80 | 89 | 88 | 93 | 87 |
| | Frauen | 67 | 83 | 86 | 92 | 81 |
| Schweiz | Männer | 90 | 94 | 97 | 96 | 94 |
| | Frauen | 65 | 75 | 85 | 84 | 74 |
| Vereinigtes Königreich | Männer | 68 | 88 | 91 | 93 | 86 |
| | Frauen | 52 | 76 | 85 | 87 | 73 |
| USA | Männer | 75 | 88 | 92 | 94 | 88 |
| | Frauen | 50 | 73 | 82 | 82 | 73 |
| Durchschnitt | Männer | 78 | 89 | 93 | 93 | 87 |
| | Frauen | 51 | 69 | 80 | 83 | 64 |

Quelle: *OECD* (2000A), S. 269. – * Referenzjahr 1997. – ** ISCED 4 ist in ISCED 5B enthalten.

Die Erwerbsquote der Männer zwischen 25 und 64 hatte eine Spannweite von 3 Prozentpunkten – sie war in Österreich mit 84% im Jahre 1999 am geringsten und in Australien mit 87% am höchsten. Bei den Frauen war die Spannweite doppelt so hoch: sie reichte von 76% in Dänemark, dem Land mit der höchsten Frauenerwerbsquote unter den Ländern, die hier untersucht werden, bis 62% in Holland - Österreich hat eine kaum höhere Erwerbsquote der Frauen als Holland (63%). Die großen internationalen Unterschiede der Frauenerwerbsquoten sind eine Folge der unterschiedlichen Sichtweise in Bezug auf die Rolle der Frau in der Gesellschaft, die sich unter anderem auch in der Aufteilung der Arbeit auf Haus- und Erwerbsarbeit niederschlägt. In Skandinavien wurde ein höherer Anteil der Haushaltsproduktion auf den Erwerbsmarkt verlagert als in den Niederlanden und Österreich (insbesondere Kinderbetreuung und soziale Dienste); auch dort sind vor allem Frauen in diesen Bereichen, die Gemeindesache sind, beschäftigt. In Ländern mit einer überdurchschnittlichen Frauenerwerbsquote, wie Dänemark und dem Vereinigten Königreich, ist demnach ein höherer Anteil an unqualifizierten Frauen erwerbstätig als in Österreich. Anreizmechanismen zur Erwerbsarbeit von ungelernten und angelernten Arbeitskräften sind in diesen Ländern entwickelt worden, um den Anstieg der Arbeitslosigkeit der Unqualifizierten einzudämmen.

## 2. Die Struktur des Schulsystems

Das Ziel der Bildungspolitik ist nicht nur die Qualifizierung der Bevölkerung als Grundvoraussetzung für ein nachhaltiges Wirtschaftswachstum, sondern auch die Verringerung der sozialen Ausgrenzung, die häufig mit einer unzureichenden Ausbildung Hand in Hand geht. In der vorliegenden Studie wird nicht auf die Vielschichtigkeit der Ziele und Aufgaben der Bildungspolitik eingegangen, sondern im Wesentlichen auf Kosten-Nutzen-Überlegungen des Aus- und Weiterbildungssystems, insbesondere auf die Beziehung zwischen Investitionen in das Humankapital und den Erfolg auf dem Erwerbsarbeitsmarkt. Die Analyse basiert auf einer Sichtung der einschlägigen Literatur, und ergänzenden Interviews von Bildungsplanern und -forschern in Ministerien und Forschungsinstituten. An den Beginn der Studie wird, zum besseren Veständnis für die unterschiedlichen bildungspolitischen Weichenstellungen der Länder und die Forschungsergebnisse der Kosten-/Nutzenanalysen, ein Überblick über die diversen Bildungssysteme gestellt.

### Die Grundpfeiler der Bildungssysteme

Die vier Länder, die hier untersucht werden, haben das typische aufbauende Schulsystem, das von der Primärstufe in die Sekundärausbildung übergeht. Die obere Sekundarstufe zerfällt in mehrere Ausrichtungen, in akademisch und berufsorientierte Schul- bzw. Ausbildungsformen, die in der Ausprägung der postsekundären und tertiären Ausbildung ihre Fortsetzung finden. Es gibt gewisse Abweichungen in der Dauer der Ausbildung in den 3 Segmenten, z. T. infolge der unterschiedlichen Dauer der Schulpflicht.

In Dänemark beginnt die Schulpflicht mit dem 7. Lebensjahr und geht bis zum 16. Lebensjahr; in Holland setzt die Schulpflicht früher ein, nämlich mit dem 5. Lebensjahr. Die Vollzeit-Schulpflicht reicht bis zum 16. Lebensjahr; im Anschluss daran gibt es einen verpflichtenden Teilzeit-Schulbesuch bis zum 18. Lebensjahr, d. h. die obere Sekundarausbildung ist bis zu einem gewissen Masse Pflicht. In Australien besteht Schulpflicht zwischen dem 5. und 15. Lebensjahr, in Österreich zwischen dem 6. und 15. Lebensjahr (insgesamt 9 Jahre).

Das Grundmuster des Schulsystems unterscheidet sich zwischen Dänemark und Holland einerseits und dem Vereinigten Königreich und Australien andererseits. In Dänemark zerfällt die Sekundär- und Tertiärausbildung in eine akademische und eine berufsorientierte Linie. Im Gegensatz dazu spaltet sich in Holland, ähnlich wie in Österreich, das Schulsystem schon in der unteren Sekundarstufe in zwei Typen der Allgemeinbildung, in eine anspruchsvollere Variante (vergleichbar mit der AHS in Österreich) und eine leichtere (vergleichbar mit der Hauptschule in Österreich), sowie zusätzlich einer berufsorientierten Unterstufe der Sekundarstufe. Demzufolge ist das Schulsystem in Holland in der unteren Sekundarstufe und der anschließenden oberen Sekundarstufe in Holland differenzierter als in Österreich. Das Bildungssystem der Sekundarstufe II spaltet sich in beiden Ländern, ähnlich wie in Österreich, in eine berufsorientierte mittlere und eine höhere Fachschule auf,. Zusätzlich gibt es, ebenso wie in Österreich die traditionelle Lehrausbildung. Ein Wesensunterschied zu Österreich ergibt sich aber im Bereich der Ausbildung der Gesundheits-, Pflege- und Sozialberufe, die in Dänemark und Holland in das Regelschulsystem eingebunden ist, d. h. die mittleren Fachschulen haben nicht nur eine industriell-gewerbliche, eine kommerzielle und Tourismusschiene, die direkt an das Pflichtschulsystem anschließt, sondern auch eine für Sozial-, Gesundheits- und Pflegeberufe, für die es eine lückenlose Weiterführung im Fachhochschulsystem oder der Universität besteht. Dadurch wird, im Gegensatz zu Österreich, sichergestellt, dass die heimische Ausbildung den wachsenden Bedarf der Gesellschaft nach diesen Diensten, die in zunehmendem Masse privatwirtschaftlich organisiert werden, abdecken kann.

Die Differenzierung der Sekundarstufe II findet in der Tertiärausbildung eine Fortsetzung. Absolventen der berufsorientierten mittleren und höheren Schulen steht der Übergang zu einer Fachhochschule offen, Absolventen der allgemeinbildenden höheren Schule der Zugang zu Universitäten.

In Dänemark ist das Verhältnis zwischen berufsorientierter und allgemeinbildender Ausbildung in der oberen Sekundarstufe ca. 50 : 50, in Holland sind mehr als 60% in der berufsorientierten Ausbildung, im Gegensatz zu etwa 80% in Österreich.

Im Vereinigten Königreich und in Australien hat die Allgemeinbildung in der ganzen Sekundarstufe Vorrang vor der Berufsorientierung. Erst im Postsekundarbereich und der Tertiärausbildung spaltet sich das Ausbildungssystem in eine berufsorientierte und akademische Richtung. Die Sorge um Facharbeitermangel, d. h. den Mangel an mittlerer berufsorientierter Ausbildung, hat beide Länder dazu veranlasst, mehr Geld in den Ausbau berufsorientierter Aus- und Weiterbildung zu investie-

ren. In der Folge wurden in den neunziger Jahren berufsorientierte Fächer in die letzten beiden Ausbildungsjahre der Sekundarstufe II aufgenommen; postsekundäre berufsorientierte Ausbildung, insbesondere in der Form einer Lehre, wurde ausgebaut. Einstweilen gibt es noch hier und da Übergangs- und Entwicklungsprobleme, aber die Richtung der Weiterentwicklung des Schul- und Ausbildungssystems ist vorgezeichnet. Mit der Zeit nähert sich das britische und australische Bildungssystem dem von Dänemark und Holland. Das heißt, dass eine gewisse Konvergenz der Ausbildungssysteme feststellbar ist. Es wird vor allem auch darauf Bedacht genommen, dass es zwischen den Ausbildungsrichtungen Umsteigmöglichkeiten gibt, d. h. dass eine gewisse Fluidität in beiden Richtungen möglich ist.

Unter Bildungsforschern ist man sich keineswegs darüber einig, dass das binäre Ausbildungssystem, das relativ früh eine Spaltung der Ausbildung in eine allgemeine und eine berufsorientierte Ausbildung vorsieht, auch das effizientere ist – insbesondere wenn man ein System des lebenslangen Lernens vor Augen hat. Eine OECD-Studie (1999A: S 59) hat zwischen drei unterschiedlichen Typen von Aus-Bildungspfaden der oberen Sekundarstufe unterschieden:

1. Allgemeine Bildungspfade für den Großteil der Schüler der oberen Sekundarstufe. Länder, die in diese Kategorie fallen, sind: Australien, Kanada, Japan und USA; ca. drei Viertel aller Schüler gehen in allgemeinbildende mittlere und höhere Schulen. Allgemeinbildende höhere Schulen sind als Vorbereitung für die Universitätsausbildung gedacht.

2. Berufsorientierte Fachschulen als wesentlicher Ausbildungspfad, mit dem Ziel, dass der Übergang von der Schule zum Arbeitsmarkt möglichst reibungslos vonstatten geht, d. h. ohne viel Arbeitslosigkeit. Dazu gehören Länder wie Ungarn, Tschechien, wo 82% bzw. 70% der Schüler in der oberen Sekundarstufe diesen Ausbildungspfad beschreiten, auch in Österreich und Finnland hat dieser Ausbildungsweg eine große Bedeutung (ca. 40% der Schüler).

3. Lehrausbildung als wichtigsten berufsorientierten Ausbildungspfad, bei dem es zu einem Vertrag zwischen dem Lehrherrn und dem Lehrling kommt. Das ist das Charakteristikum der Ausbildung der oberen Sekundarstufe in der Schweiz und in Deutschland, wo mehr als 50% der Jugendlichen diesen Ausbildungspfad beschreiten; Österreich hat in der Lehrausbildung zwar auch ein wichtiges Standbein, aber für nicht mehr als etwa 40% der Jugendlichen.

Der kleine Anteil der Jugendlichen, der in keine dieser Bildungsschienen passt, hat üblicherweise mit Problemen entweder am Arbeitsmarkt oder in der Weiterbildung zu kämpfen.

Wenn man die vier Länder, die hier untersucht werden, vergleicht, erhält man folgendes Bild (siehe Übersicht 4).

Der Kontrast zwischen Dänemark und Holland einerseits und Australien und dem Vereinigten Königreich andererseits ist augenfällig. Wenn man Österreich einzuordnen verursacht, dann passt es am ehesten zu Dänemark, gefolgt von Deutschland und Holland. Das britische Schulsystem ist eher im Mittelfeld angeordnet. Es sieht so aus, als ob ein System, in dem ein hoher Anteil der

Schüler der Sekundarstufe II eine allgemeinbildende Schule besucht, auch die Universitätsbesuchsquote hoch ist. Das ist nicht nur im Vereinigten Königreich der Fall, sondern auch in Australien und Nordamerika. Eine starke Besetzung der Lehrausbildung, die keine Durchlässigkeit nach oben hat, wie etwa die Schweiz und Österreich, haben eine geringe Akademikerquote zur Folge. Im Gegensatz dazu hat Deutschland und Holland durch die Zulassung von Absolventen der Lehren und Fachschulen zur Fachhochschule eine größere Zahl von Akademikern. Absolventen der Fachhochschulen werden den Universitätsabsolventen mit Bachelor's Degree gleichgestellt, der großen Masse der Universitätsabsolventen im angelsächsischen Bereich.

*Übersicht 4: Schätzung der Verteilung der Schüler in der Sekundarstufe II auf Ausbildungspfade (1996)*

| | Bildungsweg | | |
|---|---|---|---|
| | Lehre | Berufsbildende Schulen | Allgemeinbildende Schulen |
| *"Thematic Review"-Länder* | | | |
| Australien | 3 | 2 | 94 |
| Österreich | 41 | 37 | 22 |
| Kanada | 1 | 5 | 94 |
| Tschechische Republik | *x* | 82 | 18 |
| Dänemark | 44 | 14 | 42 |
| Finnland | 5 | 47 | 48 |
| Ungarn | *x* | 70 | 30 |
| Japan | *a* | 26 | 74 |
| Norwegen | 25 | 27 | 48 |
| Portugal | 4 | 32 | 64 |
| Schweden | *n* | 60 | 40 |
| Schweiz | 60 | 9 | 31 |
| Vereinigtes Königreich | 24 | 33 | 43 |
| USA | *n* | 12 | 88 |
| *Andere Länder* | | | |
| Belgien | 3 | 65 | 32 |
| Frankreich | 11 | 43 | 46 |
| Deutschland | 52 | 24 | 24 |
| Griechenland | *n* | 32 | 68 |
| Irland | 5 | 15 | 80 |
| Italien | *a* | 72 | 28 |
| Korea | *a* | 42 | 58 |
| Niederlande | 23 | 47 | 30 |
| Neuseeland | 8 | 30 | 62 |
| Polen | *m* | 69 | 31 |
| Spanien | 2 | 37 | 61 |

Symbole für fehlende Daten: *a* . . . nicht anwendbar; *m* . . . Daten nicht verfügbar; *n* . . . vernachlässigbare Größe oder Null; *x* . . . in anderer Spalte enthalten.
Quellen: *Australien:* Country Note, Background Report, und *Ball – Robinson* (1998). Bezogen auf 16-jährige. Zu beachten ist, dass der Anteil der Schüler, der mit Berufsbildenden Schulen und Lehre beginnt, im Alter von 16 bis 19 zunimmt, und für die Altersgruppe der 15- bis 19-jährigen um insgesamt etwa 20%. *Kanada: OECD* (1998i). *Tschechische Republik: OECD* (1998i). Bezogen auf Beginner der oberen Sekundarstufe. *Dänemark:* Background Report. Bezogen auf den weiteren Bildungsweg derer, die aus der Pflichtschule kommen. Die Kategorie der Berufsbildenden Schulen bezieht sich auf HHX und HTX–Programme, die auch viele Charakteristika der allgemeinbildenden Bildungswege enthalten. *Ungarn:* Country Note. Bezogen auf Beginner der Sekundarstufe. *Japan:* Background Report. Bezogen auf alle Schüler. *Norwegen:* Country Note. Bezogen auf das erste Jahr der höheren Sekundarstufe. Die Anteile im Hauptbildungsweg steigen im dritten und letzten Jahr der höheren Sekundarstufe. *Portugal: OECD* (1998i). *Schweden:* Background Report. Bezogen auf Beginner der höheren Sekundarstufe. *Vereinigtes Königreich:* Background Report. Bezogen auf England und Wales. *USA:* Background Report. Bezogen auf 1992. Alle anderen Länder: *OECD* (1998a), Tabelle C2.1.

Die Ausbildungsquoten der Jugendlichen sind in Australien und dem Vereinigten Königreich in den neunziger Jahres als Folge der vielen neuen postsekundären berufsorientierten Ausbildungsprogramme sehr viel differenzierter und individualisierter geworden. Im angelsächsischen System erhalten die Jugendlichen ihre Berufsausbildung im Wesentlichen am Arbeitsplatz; das Schulsystem vermittelt in der oberen Sekundarstufe gewisse Basisqualifikationen, die in eine universitäre Weiterbildung münden sollen. Die Verknüpfung der Sekundarstufe II mit dem Arbeitsmarkt ist daher lose, im Gegensatz zu Österreich oder Deutschland. Es stellt sich nun die Frage, ob die schulischen Mischformen der Ausbildungspfade den österreichischen vorzuziehen sind oder umgekehrt. Der Bildungsexperte *McKenzie* (2000) vertritt folgende Meinung:

Der australische bildungspolitische Zutritt eröffnet den Jugendlichen eine große Flexibilität in der Berufs- und Weiterbildung, insbesondere über die Tertiärausbildung. Der Nachteil des Systems ist, dass Jugendliche eine größere Unsicherheit in Bezug auf die späteren Beschäftigungschancen haben als in Ländern, in denen das Schulsystem stärker mit dem Arbeitsmarkt verknüpft ist. Wenn ein Jugendlicher das Schulsystem ohne anerkannten Abschluss verlässt (drop-out), dann hat er große Schwierigkeiten, auf die Dauer einen passenden Arbeitsplatz zu finden oder zu behalten. Ein früher Eintritt in den Arbeitsmarkt ist meist eine Folge von zerrütteten Familienverhältnissen, Armut oder Lernschwäche.

In Hinblick auf die Notwendigkeit lebenslangen Lernens schafft vielleicht die allgemeine Ausrichtung der Schulbildung der angelsächsischen Länder auf lange Sicht eine bessere Voraussetzung dafür als die Berufsorientierung in den kontinentaleuropäischen Ländern. Kurzfristig ist allerdings der Bedarf an vermehrter mittlerer berufsorientierter Ausbildung gegeben, der allerdings nicht auf Kosten einer anhaltenden Ausweitung der universitären Ausbildung gehen sollte. D. h. explizites Ziel ist es, eine Anhebung der berufsorientierten Ausbildung am unteren Ende der Ausbildungsskala zu erreichen, d. h. mehr Jugendliche dazu zu bringen, nach der Schulpflicht noch weiterführende mittlere Qualifikationen über eine berufsorientierte Ausbildung zu erlangen, bevor sie auf den Arbeitsmarkt gehen.

## Sonderschulen

In allen OECD-Ländern wurden Sonderschulen für Kinder und Erwachsene eingerichtet, die eine zusätzliche Unterstützung beim Lernen brauchen. Schüler, die Lernschwierigkeiten haben, die behindert sind oder aus zerrütteten Familienverhältnissen kommen, brauchen eine zusätzliche Hilfe, wenn sie Bildungsfortschritte machen wollen. Diese Schüler werden in allen OECD Ländern zunehmend in das Regelschulsystem aufgenommen statt in Sonderschulen. Die normalen Schulen erhalten dann, entsprechend dem Anteil der sozialökonomisch behinderten Minderheiten an der Schule, zusätzliche Ressourcen zur Förderung der benachteiligten Schüler. Kein OECD-Land hat es allerdings bis jetzt geschafft, ein öffentliches Schulsystem zu entwickeln, in dem die sozial-ökonomisch Behinderten voll in das Regelschulsystem integriert sind.

Da es infolge des unterschiedlichen Integrationsgrades der Behinderten in das Regelschulsystem unmöglich ist, sinnvolle internationale Vergleiche anzustellen, wurde eine Taxonomie entwickelt, die zwischen drei Gruppen von Behinderten unterscheidet, unabhängig davon, wie sie in das Schulsystem integriert sind. Kategorie A-Schüler brauchen infolge einer Behinderung eine spezielle Unterstützung; Kategorie B-Schüler haben Lernschwierigkeiten, Kategorie C-Schüler haben eine Familienhintergrund, der keine Chancengleichheit sicherstellt, z. B. Kinder ethnischer oder kultureller Minderheiten, zerrütteter Familien und dergleichen mehr. Zwischen diesen drei Gruppen gibt es Überschneidungen. Wenn man die Schülerzahl aller drei Kategorien summiert (1996), ergibt sich für das Vereinigte Königreich, Finnland und Irland mit 15-20% der höchste Anteil der benachteiligten Kinder an allen Schülern in der Pflichtschule, und in der Schweiz mit 6,2% der geringste (*OECD,* 1998A, S. 228).

Dänemark nahm zwischen 1995 und 1998 an einem Vergleich der Sonderschulsysteme von acht OECD-Ländern teil, zusammen mit Australien, Kanada, Deutschland, Irland, Italien, dem Vereinigten Königreich und USA (*OECD,* 1999C). Dieser Studie zufolge hatten mit Ausnahme von Deutschland und Italien, wo weniger als 5% aller Schüler besondere Unterstützung brauchten, alle anderen teilnehmenden Länder einen Anteil von 10% bis 20% der Schüler, die eine besondere Förderung beim Lernen gebraucht hätten. Tatsächlich werden aber in diesen OECD-Ländern nur etwa 1% aller Schüler speziell gefördert, d. h. als Schüler mit besonderen Bedürfnissen formell erfasst. Die einzige Ausnahme ist Deutschland, wo 4% aller Schüler in Sonderschulen sind. Diese Unterschiede in den Daten sind darauf zurückzuführen, dass zwischen der Erkenntnis der Notwendigkeit der Förderung und der realen Umsetzung der Förderung, etwa über Sonderschulen oder spezielle Klassen innerhalb des Regelschulsystems keine Übereinstimmung herrscht.

*Übersicht 5: Anzahl der Schüler, die eine spezielle Förderung erhalten, in % aller Schüler im Pflichtschulsystem*

*Kategorien A, B und C, 1996 (basierend auf Personenzählungen)*

| | Gesamtanteil an allen Schülern | Kategorie A | Kategorie B | Kategorie C |
|---|---|---|---|---|
| Österreich | m | 1,33 | 2,01 | m |
| Finnland[2] | 16,00 | 1,04 | 13,26 | 1,70 |
| Frankreich[1 2 3] | 18,07 | 2,53 | 2,14 | 13,40 |
| Deutschland | 4,31 | 1,45 | 2,86 | x |
| Niederlande [2 3] | 33,53 | 1,77 | 3,49 | 28,27 |
| Schweiz[2] | 5,80 | 1,62 | 3,76 | 0,42 |
| Vereinigtes Königreich | 2,56 | x | X | x |
| USA | 35,50 | 5,62 | 8,43 | 21,40 |

Q: *OECD* (2000A), S. 192. – [1] Abdeckung unterschiedlich für Volksschüler und Schüler der unteren Sekundarstufe. – [2] Bezugsjahr unterscheidet sich von 1996. – [3] Manche Werte sind geschätzt.

In den letzten Jahren setzte überall ein Trend zu vermehrter Integration benachteiligter und behinderter Kinder in das Regelschulsystem ein. Im Vereinigten Königreich stieg der Anteil der Schüler, die Anspruch auf spezielle Förderungsmaßnahmen haben, von 21% im Jahr 1992 auf 29% 1997.

In den USA erhöhte sich der Anteil zwischen 1990 und 1994 von 9,8% auf 10,3%. Auch in Österreich steigen die Ausgaben für die Förderung der Integration der Kinder in das Schulsystem vor allem im Gefolge der Integration der 2. Generation Migranten.

## 3. Die Rolle des Staates im Schulsystem

Die **dänische** Verwaltung des Schulsystems ist stark dezentralisiert, ähnlich wie in Österreich und Deutschland[1]. Die Gemeinden sind für die Volksschule und untere Sekundarstufe verantwortlich; sie sind die Eigentümer der öffentlichen Schulen und kontrollieren die Qualität der Privatschulen. Die Ausgaben werden vom Staat durch Pauschalzuschüsse gedeckt. Die Finanzierung der Ausbildung wird auf Basis einer Vielzahl von Kriterien, insbesondere der Bevölkerungszahl und ihrer Altersstruktur, kalkuliert. In den öffentlichen Volks- und Hauptschulen wird der Großteil der Schüler unterrichtet. Zwar steigt in letzter Zeit die Zahl der Schüler in Privatschulen, sie hat aber 1999 erst die 15%-Marke erreicht[2]. Der Staat zahlt 80% der laufenden Kosten der Privatschulen.

Die *allgemeinbildende obere Sekundarstufe* (Gymnasium), und zwar sowohl das Regelschulprogramm, das mit dem Studentereksamen abschließt (Matura) und das Erwachsenenprogramm (Maturaschulen in Österreich) untersteht der Länderverantwortung; nur pädagogische Aufgaben verbleiben im Verantwortungsbereich des Unterrichtsministeriums. Die *berufsorientierten* Ausbildungsprogramme der *oberen Sekundarstufe* sind hingegen dem Unterrichtsministerium unterstellt. Es gibt sowohl Handelsschulen und Handelsakademien (HHX) als auch höhere technische Lehranstalten oder Kollegs (HTX).

Die *berufsorientierten* Fachschulen unterstehen mit einigen Ausnahmen dem Unterrichtsministerium, das vom Beirat für Berufsausbildung unterstützt wird. Letzterer setzt sich aus Mitgliedern der Sozialpartner, Gemeinde- und Ländervertretern, Lehrervereinen usw. zusammen. Sozial- und Gesundheitsausbildung untersteht nicht dem Unterrichtsministerium, sondern ist Ländersache, Marineausbildung untersteht dem Wirtschaftsministerium, Post- und Bahnausbildung dem Verkehrsministerium.

Die berufsorientierte Ausbildung untersteht demnach in Dänemark, mit Ausnahme der angeführten Berufe, nicht den Ländern sondern dem Bund, ebenso die berufsorientierte Ausbildung der Arbeitslosen. Die Zusammenarbeit zwischen Bund und Ländern ist aber institutionalisiert, da der Übergang zwischen den verschiedenen Ausbildungssystemen möglich sein muss und gefördert wird.

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[1] Es sind 14 Provinzen und 275 Gemeinden, die für verschiedene Schultypen in unterschiedlichem Maße verantwortlich sind (*Hansen – Rasmussen,* 1995).

[2] Die Zahl der Schüler pro Schule ist in Privatschulen kleiner als in öffentlichen Schulen (160 gegenüber 302).

Ein Wesensmerkmal des **holländischen** Bildungssystems ist das in der Verfassung verankerte Recht auf Gründung einer Schule, die auf einer religiösen, ideologischen oder bildungspolitischen Überzeugung fundiert ist. Die Folge davon ist, dass ein hoher Anteil der Schüler Privatschulen besucht (65% aller Schüler), die sich in ihrer religiösen oder kulturellen Ausrichtung unterscheiden.

Öffentliche Schulen werden von den Gemeinden verwaltet oder von einem Komitee, das von der Gemeinde angelobt wird. Privatschulen werden von einem Verein oder einer Stiftung verwaltet. Die meisten sind entweder katholisch oder protestantisch, aber auch andere konfessionelle Schulen sind ins Leben gerufen worden. Zusätzlich gibt es Privatschulen, die keine religiöse Verankerung haben, sondern die von einem Verein geführt werden, der besondere Unterrichtsmethoden einsetzt, z. B. Montessori oder Steiner-Schulen. Im Gegensatz zu öffentlichen Schulen können Privatschulen Aufnahmekriterien für Schüler festlegen.

Um das Qualitätsniveau der Schulbildung sicherzustellen, legt das Unterrichtsministerium gewisse Bildungsstandards fest, insbesondere die Zahl der Gegenstände, Zielgrößen punkto Ausbildungs- und Prüfungsinhalten der nationalen Prüfungen. Auch die Unterrichtszeiten während des Jahres und die Ausbildungsvoraussetzungen für Lehrer werden vom Ministerium festgelegt; des Weiteren werden die Schulen der Kontrolle des Schulinspektorats des Ministeriums unterstellt.

Das Schulinspektorat spielt eine wichtige Rolle in der Beurteilung der Qualität der Schulen. Es muss auch sichergestellt sein, dass Eltern und Schülern gewisse Rechte im Schulsystem eingeräumt bekommen.

Im Vereinigten Königreich ist die Formulierung der Bildungs- und Ausbildungspolitik zwischen zwei Ministerien aufgeteilt, dem Unterrichtsministerium und dem Arbeitsministerium. Das Arbeitsministerium regelt alle Agenden des Arbeitsmarktes für das gesamte Königreich; im Gegensatz dazu haben Schottland, England und Wales eigene regionale Unterrichtsministerien. Das überregionale Bundesministerium für Unterricht und Beschäftigung (DfEE) ergreift für das gesamte Königreich bildungspolitische Initiativen.

Üblicherweise herrscht Übereinstimmung zwischen den Regionen in bildungspolitischen Fragen, um sicherzustellen, dass die Politik konsistent ist und dass die Qualifikationen, die in den unterschiedlichen Regionen erworben werden, auch überall vergleichbar und einsetzbar sind. Die Standardisierung der Ausbildung soll die Transferierbarkeit des Wissens und die Mobilität der Arbeitskräfte innerhalb des gesamten Staatsgebietes sicherstellen.

Die meisten Schulen werden von Gemeinden verwaltet, fast 5.500 an der Zahl im Vereinigten Königreich. Die Bildungsausgaben, die zur Gänze von der Zentralregierung refundiert werden, machen den Großteil des Gemeindebudgets aus. Inhaltliche Regelungen werden von der Zentralregierung festgelegt. Weiterbildungskollegs (Further Education Colleges) werden allerdings direkt von den Landesregierungen finanziert.

Privatschulen können auf eine lange Tradition im Vereinigten Königreich zurückblicken; ca. 20% aller Schüler besuchen Privatschulen.

Australien besteht aus 6 Bundesstaaten und zusätzlich einigen autonomen Regionen, denen der Bund gewisse Funktionen übertragen hat. Die Länderregierungen nehmen eine aktive Rolle in der Verwaltung der Volks- und Hauptschulen wahr, wie die Festlegung der Curricula, der Prüfungen, der Festlegung der Jahre der Schulpflicht etc.; die Finanzierung erfolgt aus Länder- und Bundessteuern.

Privatschulen sind ein integraler Bestandteil des Schulsystems, mit ca. 30% aller Schüler. Sie erhalten etwa 50% ihrer Ausgaben vom Staat refundiert, ca. zwei Drittel der Gelder kommen vom Bund.

Universitäten haben innerhalb ihrer Charta (Bildungsmission), die ihnen von den Ländern verordnet wird, das Recht auf Selbstverwaltung; sie unterstehen aber dem Bund, demgegenüber sie Rechenschaft über die Ausgaben und die Erreichung des Bildungsziels ablegen müssen. Über 50% der Ausgaben der Universitäten werden vom Bund abgedeckt, der Rest von den Studenten. Die Studenten erhalten aber Stipendien und zinsenfreie Kredite von Staat, um ihre Universitätsausbildungskosten und ihre Lebensunterhaltskosten abzudecken.

Die berufsorientierte Aus- und Weiterbildung wird von den Ländern erbracht; die bildungspolitische Ausrichtung wird im Zusammenwirken mit der Bundesregierung ausgearbeitet. Der Mittler zwischen Bund und Ländern ist die Australien National Training Authority, die 1992 gegründet wurde, um berufsorientierte Ausbildung bundesweit zu planen und voranzutreiben.

## 4. Der Erfolg und die Güte des Schulsystems

Internationale Vergleiche der Qualität des Ausbildung, bzw. des Erfolgs der Absolventen des Schulsystems, wurden zu einem wichtigen Instrument der Bewertung der Performanz des Bildungssystems. Es werden vor allem die Kenntnisse der Schüler in Mathematik und in den Naturwissenschaften sowie im Lesen gemessen und verglichen. Kenntnisse der Mathematik werden in einer globalisierten Wirtschaft, in der die Anpassungsgeschwindigkeit an den technologischen Wandel ein Schlüssel für die Erhaltung der Wettbewerbsfähigkeit ist, zunehmend wichtiger.

Die Ergebnisse der dritten internationalen Mathematik- und Wissenschaftserhebung (Third International Mathematics and Science Study, kurz TIMSS) wiesen für die Schweiz, die Niederlande und Österreich die besten durchschnittlichen Kenntnisse aller 14 Teilnahmeländer zum Zeitpunkt der Erhebung im Jahre 1995 aus (Übersicht 6). Die Niederlande erzielten im Bereich der Naturwissenschaft im Durchschnitt das höchste Wissensniveau, gefolgt von Österreich. Auch das unterste und oberste Quartil der Schüler hatten im Schnitt überdurchschnittliche Kenntnisse in Mathematik und den Naturwissenschaften. Die Aussagekraft dieser Werte wird allerdings dadurch getrübt, dass weder Österreich, die Niederlande und die Schweiz die Anforderungen für eine repräsentative Stichprobe erfüllten.

Die Noten wiesen zum Teil merkliche Abweichungen nach dem Geschlecht auf, mit der Ausnahme von Mathematik in Deutschland und Schweden (Übersicht 7). Unterdurchschnittliche Abweichungen der Noten nach dem Geschlecht hatten auch USA, England, Norwegen, Australien und die Schweiz. Österreich und Holland entsprachen dem OECD-Durchschnitt. Dieses Ergebnis weist darauf hin, dass keine besonderen Anstrengungen zur Verringerung der Geschlechtersegmentation im Bildungssystem ergriffen wurden. Das hat zur Folge, dass Frauen in Österreich und Holland nicht die gleichen Karriere- und Einkommenschancen in einer Zeit haben werden, die vom technischen Fortschritt geprägt ist.

*Übersicht 6: Internationale Unterschiede in den Kenntnissen der Mathematik und der Naturwissenschaften*

*Verteilung der Noten in Mathematik/Naturwissenschaften in der 8. Klasse (1995)*

| | Mathematik | | | Naturwissenschaft | | |
|---|---|---|---|---|---|---|
| | Durchschnitt | 25. Perzentil° | 75. Perzentil° | Durchschnitt | 25. Perzentil° | 75. Perzentil° |
| Australien** | 530 | 460 | 600 | 545 | 475 | 619 |
| Österreich** | 539 | 474 | 608 | 558 | 499 | 623 |
| Dänemark** | 502 | 443 | 561 | 478 | 423 | 541 |
| Deutschland** | 509 | 448 | 572 | 531 | 463 | 602 |
| Niederlande** | 541 | 477 | 604 | 560 | 505 | 619 |
| Norwegen | 503 | 445 | 560 | 527 | 470 | 588 |
| Schweden | 519 | 460 | 579 | 535 | 476 | 598 |
| Schweiz* | 545 | 485 | 607 | 522 | 460 | 587 |
| England* | 506 | 443 | 570 | 552 | 485 | 625 |
| USA* | 500 | 435 | 563 | 534 | 465 | 608 |
| Länderdurchschnitt | 516 | 456 | 576 | 523 | 464 | 586 |

Q: *OECD* (1996), S. 206, 207. – ° 25 oder 75% der Schüler erreichte Noten darunter. – * Diese Länder erfüllten die TIMSS Sampling-Erfordernisse nur teilweise. – ** Diese Länder erfüllten die TIMSS-Sampling-Erfordernisse nicht.

*Übersicht 7: Notenunterschied in Mathematik und den Naturwissenschaften nach dem Geschlecht*

*Notendurchschnitt in Mathematik/Naturwissen schaften in der 8. Klasse nach Geschlecht (1995)*

| | Durchschnitt Mathematik | | | Durchschnitt Naturwissenschaften | | |
|---|---|---|---|---|---|---|
| | Buben | Mädchen | Unterschied im Durchschnitt° | Buben | Mädchen | Unterschied im Durchschnitt° |
| Australien** | 528 | 533 | *5m* | 551 | 541 | *9b* |
| Österreich** | 544 | 536 | *8b* | 566 | 549 | *18b* |
| Dänemark** | 512 | 495 | *17b* | 495 | 464 | *31b* |
| Deutschland** | 512 | 509 | *3b* | 542 | 524 | *18b* |
| Niederlande** | 545 | 537 | *8b* | 570 | 550 | *21b* |
| Norwegen | 505 | 501 | *4b* | 534 | 521 | *13b* |
| Schweiz | 548 | 544 | *5b* | 529 | 515 | *15b* |
| Schweden | 520 | 518 | *2b* | 543 | 528 | *15b* |
| England* | 509 | 505 | *4b* | 563 | 543 | *20b* |
| USA* | 502 | 498 | *4b* | 539 | 530 | *9b* |
| Länderdurchschnitt | 519 | 513 | *7b* | 532 | 515 | *18b* |

Q: *OECD* (1996), S. 216, 217. – ° b bedeutet Buben schnitten besser ab, m bedeutet Mädchen schnitten besser ab. – * Diese Länder erfüllten die TIMSS-Sampling-Erfordernisse nur teilweise. – ** Diese Länder erfüllten die TIMSS-Sampling-Erfordernisse nicht.

## Höchste abgeschlossene Ausbildung der Jugend im Vergleich zu den Erwachsenen

Australien ist das Land, in dem der Anteil der Bevölkerung, der nicht mehr als die untere Sekundarstufe (ISCED 2) absolviert hat, am höchsten ist (44%), gefolgt von den Niederlanden (36%). Das ist eine Quelle der Arbeitslosigkeit, insbesondere auch der Jugendarbeitslosigkeit. Aus dem Grund haben diese beiden Länder in den letzten Jahren verstärkt Maßnahmen ergriffen, um den Anteil der Schüler zu erhöhen, der nach der Pflichtschule in die obere Sekundarstufe geht.

Aber auch Österreich hat einen relativ hohen Anteil von Personen in der Bevölkerung zwischen 25 und 64, der nicht mehr als die Pflichtschule absolviert hat (26,7%). Das sind zum Großteil Frauen in mittleren und höheren Jahren. Sie sind in hohem Maße in der Landwirtschaft oder als Hausfrauen tätig, was dazu führt, dass sie nicht die Arbeitslosenstatistik belasten. Österreich hat den höchsten Anteil der Absolventen von mittleren und höheren Schulen plus Lehre (ISCED 3 und 4) an der Bevölkerung, gefolgt von Deutschland, dem Vereinigten Königreich und Dänemark. Dieser Ausbildungsgrad erlaubt üblicherweise einen relativ problemlosen Übergang vom Schulsystem in den Arbeitsmarkt, nicht jedoch in die Tertiärausbildung. Australien hat den geringsten Anteil der berufsorientierten Ausbildung an der Bevölkerung.

Am oberen Ende der Ausbildungsskala, die die Tertiärausbildung A und B umfasst (ISCED 5A, 5B und 6) sind USA und Finnland führend, gefolgt von Australien und Dänemark. Österreich ist in diesem Bildungssegment das Schlusslicht. Die Übersicht 8 verdeutlicht die Polarisierung der Ausbildung in Österreich und Australien – wobei beide Länder Gegensätze darstellen. Während Australien die mittlere berufsorientierte Ausbildung vernachlässigte, vernachlässigte Österreich die universitäre Ausbildung, insbesondere im technisch-naturwissenschaftlichen Bereich. USA und Deutschland sind im Gegensatz dazu Länder mit einer ausgeglicheneren Verteilung der unterschiedlichen Ausbildungsniveaus auf die Bevölkerung. Die relativ geringe Zahl der Universitätsabsolventen in Österreich ist nicht unabhängig von der spezifischen Trennung der Arbeit zwischen dem öffentlichen und privaten Sektor in Österreich (*Biffl,* 2000). Der Großteil der Universitätsabsolventen arbeitet nämlich im öffentlichen Sektor bzw. dem bis vor kurzem quasi-öffentlichen Sektor des Bankenwesens sowie dem Post- und Nachrichtenwesen.

Die gegenwärtige Diskussion um die Finanzierung des Universitätssystems einerseits und die Lehrmethodik und die Lehrinhalte im Universitätssystem andererseits ist vor dem Hintergrund des wirtschaftlichen Strukturwandels und der Privatisierung weiter Teile des vormaligen öffentlichen Sektors von besonderer Brisanz. Eine Reform des Bildungssystems, die diese neuen Realitäten übersieht, kann den Anforderungen der neuen Arbeitsmarktbedingungen nicht gerecht werden.

Die Stoßrichtung der jüngeren Bildungspolitik ist aus der Übersicht 9 ablesbar, in der der Übergang der Jugendlichen zwischen 15 und 20 von einem Schultypus in den anderen dargestellt wird. Daraus geht hervor, dass die internationalen Unterschiede der Schulbesuchsquote unter den 15- bis 16-jährigen nicht sehr hoch sind, mit Ausnahme der 16-jährigen in den USA und dem Vereinigten Königreich, wo sie bedeutend geringer sind.

*Übersicht 8: Verteilung der Bevölkerung zwischen 25 und 64 nach höchster abgeschlossener Ausbildung und Alter (1998)*

| | Vorschule und Volksschule | Untere Sekundarstufe | Höhere Sekundarstufe | Postsekundäre, nicht tertiäre Schulstufe | Tertiärstufe Typ B | Tertiärstufe Typ A und fortgeschr. Forschungspr. | Alle Bildungsstufen |
|---|---|---|---|---|---|---|---|
| | ISCED 0/1 (1) | ISCED 2 (2) | ISCED 3 (3) | ISCED 4 (4) | ISCED 5B (5) | ISCED 5A/6 (6) | (7) |
| Australien | x(2) | 44,0 | 30,6 | x(3) | 8,8 | 16,6 | 100 |
| Österreich* | x(2) | 26,7 | 57,0 | 5,7 | 4,5 | 6,2 | 100 |
| Dänemark | 0,1 | 21,4 | 53,2 | x(3) | 19,8 | 5,4 | 100 |
| Finnland* | x(2) | 31,7 | 38,9 | - | 16,7 | 12,8 | 100 |
| Deutschland | 2,1 | 14,1 | 56,3 | 4,4 | 9,0 | 14,0 | 100 |
| Niederlande | 12,5 | 23,2 | 40,1 | x(6) | x(6) | 24,2 | 100 |
| Schweiz | x(2) | 18,5 | 58,5 | x(3) | 9,0 | 14,0 | 100 |
| Verein. Königreich | x(2) | 19,2 | 57,3 | x(7) | 8,2 | 15,4 | 100 |
| USA | 5,0 | 8,6 | 51,6 | x(3) | 8,3 | 26,6 | 100 |
| Länderdurchschnitt | 24,4 | 19,4 | 59,9 | 5,4 | 9,4 | 13,6 | |

Q: *OECD* (2000A), S. 33. Wichtig: Die Bezugsspalte befindet sich in den Klammern nach dem "x", x(2) bedeutet, dass die Daten in Spalte 2 enthalten sind. – * Referenzjahr 1997.

ISCED 0: Kleinkinderziehung hat eine Doppelfunktion: Tägliche Fürsorge während die Eltern ihren Beruf ausüben.

ISCED 1: Volksschulbesuch erfordert generell keine Vorbildung.

ISCED 2: Der Kern der unteren Sekundarstufe fährt fort mit dem Grundprogramm der Primärstufe.

ISCED 3: Die höhere Sekundarstufe erfordert den Abschluss der unteren Sekundarstufe oder eine Kombination aus Grundausbildung und Berufspraxis.

ISCED 4: Postsekundäre nicht-tertiäre Bildungsprogramme sind an der Grenze zwischen höherer Sekundarstufe und post-sekundärer Bildung.

ISCED 5A: Programme der Tertiärstufe A sind hauptsächlich theorie-bezogen und sind so konzipiert, dass sie eine ausreichende Qualifikation für fortgeschrittene Forschungsprogramme und Berufe mit hohen Ausbildungserfordernissen bieten, z.B. Medizin, Zahnmedizin oder Architektur. Tertiäre Typ-A-Programme haben eine theoretische Mindestdauer von drei Jahren in Vollzeitäquivalenten, obwohl sie normalerweise 4 Jahre oder länger dauern. Diese Programme werden nicht ausschließlich auf Universitäten angeboten. Umgekehrt sind nicht alle Programme an den Universitäten als Universitätsausbildung anerkannt, d. h. sie erfüllen nicht die Kriterien, um als Tertiärbildung des Typs A klassifiziert zu werden. Tertiärprogramme des Typ A beinhalten Programme zweiten Grades, wie z.B. American Master. Die ersten und zweiten Programme sind unterteilt nach der kumulativen Dauer der Programme.

ISCED 5B: Tertiäre Typ-B-Programme sind normalerweise kürzer als die des Typs A und konzentrieren sich auf praktische, technische oder berufsbezogene Qualifikationen für den direkten Eintritt in den Arbeitsmarkt, obwohl manche theoretische Grundlagen von den fachspezifischen Programmen abgedeckt werden können. Sie haben eine Mindestdauer von zwei Jahren Vollzeitäquivalenten auf tertiärer Ebene.

ISCED 6: Diese Bildungsstufe ist reserviert für Tertiärprogramme, die direkt zum Erwerb einer fortgeschrittenen Forschungsqualifikationen führen, z. B. Ph. D. Die theoretische Dauer dieser Programme ist in den meisten Ländern drei Jahre Vollzeit, obwohl die tatsächliche Dauer normalerweise länger ist. Diese Programme sind fortgeschrittenen Studien und selbständiger Forschung gewidmet.

Mit dem 17. Lebensjahr sinkt die Schulbesuchsquote in allen Ländern, am stärksten in den USA und dem Vereinigten Königreich. In diesen Ländern sinkt die Schulbesuchsquote weiterhin kontinuierlich bis zum 20. Lebensjahr, ebenso in Finnland und Australien. Aber die Besuchsquote der Universitäten steigt als Folge der bildungspolitischen Schwerpunktsetzung auf universitäre Ausbildung. Im Gegensatz dazu ist die Übertrittsquote aus der oberen Sekundarstufe in die Universität in Österreich relativ schwach, dafür besuchen mehr Schüler als anderswo post-sekundäre nicht tertiäre Ausbildungsformen, nämlich die AHS, HAK und HTL. In Deutschland ist die Situation ähnlich, aber um ein Jahr hinausgeschoben, da die AHS sowie die höheren berufsorientierten Schulen ein Jahr länger dauern als in Österreich, d. h. der Arbeitsdruck der Schüler ist in Deutschland in diesen

Schulformen nicht so ausgeprägt wie in Österreich. Der Vergleich der Schulbesuchsquoten verdeutlicht, dass es fast unmöglich ist, einen wahren Einblick in den Bildungsgrad einer Bevölkerung zu erlangen, wenn man nicht auf den Unterschied der Curricula und Jahresunterrichtsstunden in den diversen Schultypen eingeht, sowie auf die Auswahlkriterien für die Aufnahme in verschiedene Schultypen. Nichtsdestotrotz gilt die Grundaussage, dass Tertiärausbildung in Österreich unterentwickelt ist, insbesondere da die Durchlässigkeit nach oben von Absolventen mittlerer Schulen (Fachschule und Lehre) erst in jüngster Zeit über die Einführung der Fachhochschulen theoretisch ermöglicht wurde. Im Gegensatz dazu gibt es das Fachhochschulsystem in Deutschland schon seit längerer Zeit, das vor allem das Ziel der Weiterbildung von Schülern mit mittlerer Berufsausbildung hat. Das österreichische System hat aber nicht diesen Effekt; es zieht tendenziell die bestqualifizierten Maturanten der AHS und der BHS vom Universitätssegment ab und trägt daher kaum zur Ausweitung der tertiären Ausbildungsbasis bei.

Dänemark und die Schweiz weisen ein ganz anderes Bildungsmuster auf. In diesen Ländern ist die obere Sekundarausbildung bis zum 20. Lebensjahr stark besucht, während die universitäre Ausbildungsquote relativ schwach besetzt ist. Im Gegensatz dazu ist die universitäre Ausbildungsquote in den Niederlanden hoch, bei gleichzeitig ähnlich hoher Schulbesuchsquote der oberen Sekundarschule wie in der Schweiz und in Dänemark.

*Übersicht 9: Übergangscharakteristika pro Jahr von 15- bis 20-jährigen: Netto-Schulbesuchquote nach Ausbildungsniveau*

*Basierend auf Personenzählungen (1998) in %*

| | Alter 15 | Alter 16 | Alter 17 | | | Alter 18 | | | Alter 19 | | | Alter 20 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sekundarstufe | Sekundarstufe | Sekundarstufe | Postsekundar, nichttertiär | Tertiärstufe | Sekundarstufe | Postsekundar, nichttertiär | Tertiärstufe | Sekundarstufe | Postsekundar, nichttertiär | Tertiärstufe | Sekundarstufe | Postsekundar, nichttertiär | Tertiärstufe |
| Australien | 99 | 97 | 81 | 1 | 5 | 34 | 3 | 30 | 20 | 3 | 35 | 17 | 2 | 32 |
| Österreich | 94 | 88 | 75 | 11 | | 43 | 19 | 6 | 15 | 11 | 15 | 5 | 4 | 20 |
| Dänemark | 98 | 93 | 82 | | | 74 | | | 54 | | 3 | 30 | | 10 |
| Finnland | 100 | 89 | 93 | | | 82 | | 3 | 24 | | 19 | 14 | | 31 |
| Deutschland | 98 | 96 | 91 | | 1 | 83 | | 3 | 40 | 18 | 8 | 18 | 15 | 15 |
| Niederlande | 99 | 96 | 85 | 1 | 3 | 62 | 1 | 15 | 39 | 1 | 25 | 26 | 1 | 30 |
| Schweiz | 98 | 90 | 85 | | | 78 | 1 | 1 | 54 | 3 | 6 | 23 | 3 | 13 |
| Vereinigtes Königreich | 101 | 81 | 66 | | 2 | 25 | | 24 | 14 | | 33 | 10 | | 33 |
| USA | 99 | 84 | 74 | | 3 | 23 | 3 | 37 | 4 | 3 | 39 | 1 | 3 | 40 |
| Durchschnitt | 93 | 88 | 78 | 1 | 1 | 48 | 4 | 16 | 23 | 4 | 25 | 12 | 3 | 28 |

Q: *OECD* (2000A), S. 136.

# 5. Effekt des Bildungssystems auf die Wirtschaft

Das Bildungssystem hat viele Aufgaben zu erfüllen, nicht nur die, die Jugend auf das Erwerbsleben und dessen Anforderungen vorzubereiten. In Dänemark wird hervorgehoben, dass das Schulsystem die Jugend zu Selbständigkeit und Selbstverantwortung ebenso erziehen soll wie dazu, ein aktives Mitglied einer demokratischen Gesellschaft zu werden. Im Gegensatz dazu hebt man in Holland hervor, dass das Schulsystem Werte und soziale Normen vermitteln soll. Das wichtigste Ziel wird aber in allen Ländern im Beitrag der Bildung zur Erhaltung der Wettbewerbsfähigkeit eines Landes gesehen. Aus- und Weiterbildung soll Produktivitätssteigerungen und ein langfristig stabiles und nachhaltiges Wirtschaftswachstum sichern, indem verhindert wird, dass es zu Facharbeitermangel und anderen speziellen Qualifikationsmängeln kommt.

## Bildungsausgaben und Finanzierungsstruktur

Die Ausgaben der öffentlichen Hand für Bildungsinstitutionen beliefen sich im Durchschnitt der OECD-Länder auf 5,1% des BIP im Jahre 1997, nach 4,8% 1990 (*OECD,* 2000A, S. 54). Die Niederlande und Australien gaben etwas weniger aus, nämlich 4,3% des BIP. Das Vereinigte Königreich liegt mit 4,6% des BIP zwischen diesen Ländern und dem Durchschnitt der OECD. Österreich liegt mit 6,0% des BIP über dem OECD-Durchschnitt, die dänische Regierung gibt noch mehr aus für Bildung als Österreich, nämlich 6,5%.

Wenn man zu den öffentlichen Ausgaben für Bildungsinstitutionen auch noch die Privatausgaben hinzuzählt, steigt der OECD-Durchschnitt der Bildungsausgaben auf 5,8% des BIP im Jahre 1997. Die Niederlande bleiben mit 4,7% des BIP weiterhin unter dem Schnitt, Australien liegt mit 5,6% knapp unter dem Schnitt; Österreich (6,5%) und Dänemark (6,8%) bleiben weiterhin deutlich über dem Schnitt der OECD. Wenn man zu den Bildungskosten auch noch die Stipendien, verbilligte Kredite und sonstige Vergünstigungen der Schüler und Studenten zählt, erhöhen sich die gesamten direkten Bildungskosten der Gesellschaft auf 6,1% des BIP im Durchschnitt der OECD-Länder. Da es in Holland relativ geringe Förderungen der Schüler und Studenten gibt, fallen die Bildungsausgaben gegenüber dem Durchschnitt der OECD-Länder wieder etwas zurück, nämlich auf 5,1% des BIP. Schweden ist das Land mit den höchsten Bildungsausgaben (8,5% des BIP), gefolgt von Dänemark (8,2%), Österreich (6,7%) und Australien (6,1% des BIP). Die Daten legen nahe, dass Österreich in geringerem Maße als die anderen Länder Stipendien und sonstige direkte Förderungen (z. B. Auszahlung der Kinderbeihilfe während des Schul-/Universitätsbesuchs) gewährt. In Österreich ist das institutionelle Bildungssystem als solches relativ kostenintensiv.

Fast die Hälfte der gesamten Ausgaben für Bildungsinstitutionen gehen auf das Konto der Volksschulen und der unteren Sekundarstufe, nämlich 2,4% des BIP im Durchschnitt der OECD. Die Kosten für die Vorschule beliefen sich im Schnitt der OECD auf 0,4% des BIP. Wenn man internationale Kostenvergleiche des Bildungssystems anstellt, sollte man die Kosten für Kindergärten und die Volksschulen zusammenzählen, da es ein unterschiedliches Einstiegsalter in das Pflichtschul-

system gibt. Man sollte auch die Summe aus öffentlichen und privaten Ausgaben für einen Vergleich heranziehen, da es keine einheitliche Aufteilung der Schulen in private und öffentliche gibt.

*Übersicht 10: Bildungsausgaben in % des BIP nach Finanzierungsquelle (1997, 1990)*

| | 1997 | | | 1990 | |
|---|---|---|---|---|---|
| | Direkte öffentliche Ausgaben für Bildungseinrichtungen | Gesamtausgaben (offentliche und private) für Bildungseinrichtungen | Gesamtausgaben (öffentl., privater und internat. Herkunft) für Bildungseinrichtungen sowie öffentliche Subventionen an Haushalte | Direkte öffentliche Ausgaben für Bildungseinrichtungen | Gesamtausgaben (offentliche und private) für Bildungseinrichtungen |
| Australien | 4,3 | 5,6 | 6,1 | 4,3 | 4,9 |
| Österreich | 6,0 | 6,5 | 6,7 | 5,2 | – |
| Dänemark | 6,5 | 6,8 | 8,2 | 6,2 | 6,4 |
| Finnland | 6,3 | 6,3 | 6,9 | 6,4 | 6,4 |
| Deutschland | 4,5 | 5,7 | 5,9 | – | – |
| Niederlande | 4,3 | 4,7 | 5,1 | – | – |
| Schweden | 6,8 | 6,9 | 8,5 | – | – |
| Schweiz | 5,4 | 6,0 | 6,1 | 5,0 | – |
| Verein. Königreich | 4,6 | | | 4,3 | – |
| USA | 5,2 | 6,9 | 7,1 | – | – |
| Länderdurchschnitt | 5,1 | 5,8 | 6,1 | 4,8 | 5,2 |
| OECD insgesamt | 4,8 | 6,1 | 6,5 | 4,4 | 5,0 |

Q: *OECD* (2000A), S. 54.

In Holland entfallen ebenso wie in Dänemark 57% der gesamten Bildungsausgaben auf die Ausbildung der 3- bis 15-jährigen. Das ist deutlich mehr als im OECD-Durchschnitt (46%) und mehr als in Österreich (49%) und Australien (50%). Das resultiert zum Teil aus der Finanzierungsform des Bildungssystems, zum Teil aus der demographischen Struktur der Schüler und Lehrer sowie des übrigen Personals und der Beschäftigungsform des Personals (Beamte im öffentlichen Sektor oder Angestellte in Privatschulen).

*Übersicht 11: Private und staatliche Bildungsausgaben in % des BIP nach Ausbildungsniveau (1997)*

| | Vorschule | Volksschule und untere Sekundarstufe | Höhere Sekundarstufe | Post-sekundäre nicht-tertiäre Bildung | Tertiärstufe | Alle Bildungsstufen |
|---|---|---|---|---|---|---|
| Australien | 0,1 | 2,8 | 1,0 | 0,1 | 1,7 | 5,6 |
| Österreich | 0,5 | 2,7 | 1,5 | – | 1,5 | 6,5 |
| Dänemark | 1,0 | 2,8 | 1,5 | – | 1,2 | 6,8 |
| Finnland | 0,7 | 2,6 | 1,2 | – | 1,7 | 6,3 |
| Deutschland | 0,5 | 2,2 | 1,3 | 0,3 | 1,1 | 5,7 |
| Niederlande | 0,4 | 2,3 | 0,8 | – | 1,2 | 4,7 |
| Schweiz | 0,2 | 2,9 | 1,6 | 0,1 | 1,1 | 6,0 |
| Verein. Königreich | 0,4 | – | – | – | 1,0 | |
| USA* | 0,4 | – | – | – | 2,6 | 6,9 |
| Durchschnitt | 0,4 | 2,5 | 1,3 | 0,1 | 1,3 | 5,8 |
| OECD insgesamt | 0,4 | 2,4 | 1,2 | 0,1 | 1,7 | 6,1 |

Q: *OECD* (2000A), S. 57. – * Post-sekundäre nicht-tertiäre Daten ist in der Tertiärausbildung enthalten.

Ausgaben für die obere Sekundarstufe beliefen sich auf 1,2% des BIP im Schnitt der OECD, Holland lag mit 0,8% des BIP darunter, Österreich und Dänemark mit jeweils 1,5% darüber. Die Kosten der Tertiärausbildung entsprechen in Holland und Australien dem OECD-Durchschnitt von 1,7 % des BIP. In Dänemark und Österreich waren sie etwas geringer – eine Folge der geringeren Universitätsbesuchsquote. Die Ausgaben pro Student sind in Österreich und Dänemark relativ hoch im internationalen Vergleich, was die Frage nach der Kosteneffizienz der Universitätsausbildung aufwirft. Um einen Anhaltspunkt für die Hintergründe der relativ hohen Kosten zu gewinnen, müsste einerseits eine Strukturanalyse der Universitätsausbildung vorgenommen werden – manche Ausbildungsformen sind wegen der kostenaufwendigen technischen Ausstattung (Techniker und Mediziner) teurer als andere, wie etwa Rechts- und Humanwissenschaften. Andererseits müsste die Organisations- und Finanzierungsstruktur untersucht werden und die Hintergründe für die relativ lange Studiendauer.

In dem Zusammenhang ist das Taximeter-Modell der Finanzierung des dänischen Schul- und Universitätssystems von besonderem Interesse. Es wurde zu Beginn der neunziger Jahre eingeführt, um das Finanzierungssystem der rund 1.350 berufsorientierten Bildungsinstitutionen der oberen Sekundarstufe und der Tertiärausbildung zu vereinfachen und transparenter zu machen. Es unterstehen nämlich nur die öffentlichen Pflichtschulen direkt der Zentralregierung; die "selbständig" agierenden Bildungskollegs der oberen Sekundarstufe werden zwar vom Staat finanziert, jedoch auf Basis des Taximeters.

Dieses Finanzierungsmodell unterscheidet zwischen laufenden fixen und variablen Kosten (Kapitalausgaben sowie Löhne für Lehrer und anderes Personal, Unterrichtsmaterialien usw.)[3]. Das variable Element der Finanzierung der laufenden Kosten ist abhängig von der Schülerzahl, die das Ausbildungsprogramm erfolgreich abschließt.

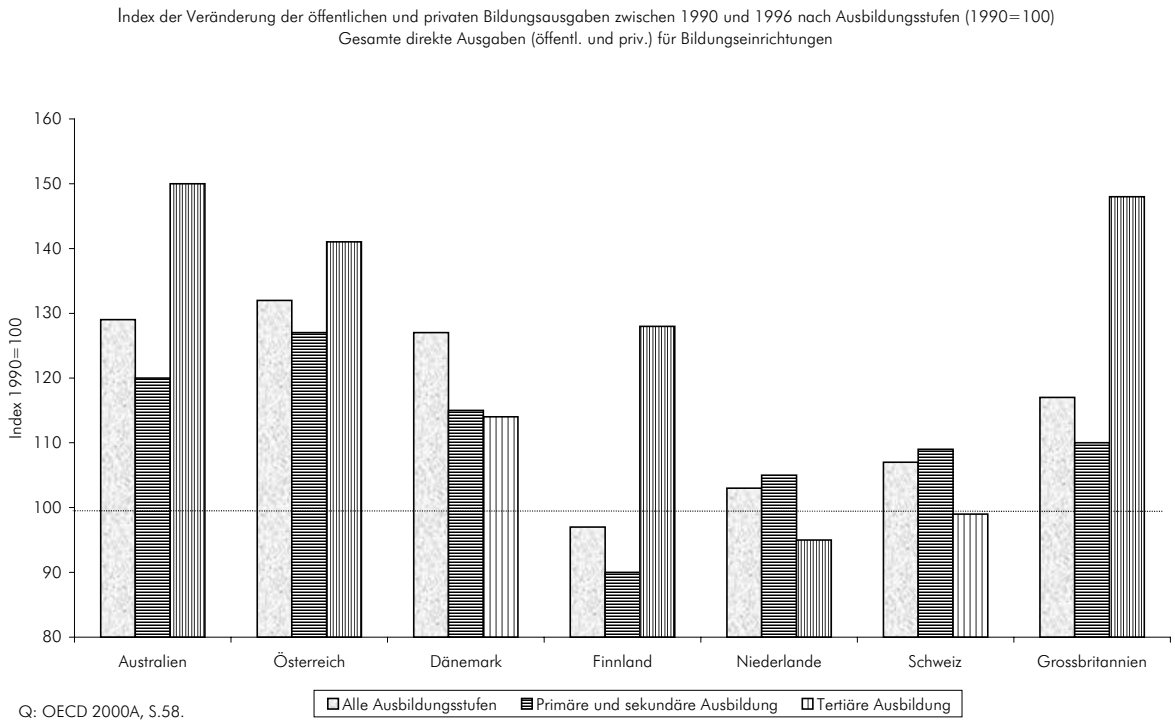
Der Taximeter wurde eingeführt, um Anreize für eine effiziente Ausbildung einerseits und die Einhaltung der Ausbildungszeit andererseits zu schaffen. Das fixe Finanzierungselement betrifft die Kostenabdeckung für die Nutzung der Gebäude, der Investitionen, Zinsen usw.. Das Taximeter-Modell wurde 1997/98 evaluiert und als erfolgreiche Reform, die ihre Ziele erfüllt hat, bewertet. Es führte nicht zu einer Senkung der Bildungsstandards, da externe Prüfer eingeführt wurden, die die Erhaltung der Standards der Kenntnisse der Schüler kontrollierten. Es kann aber durchaus möglich sein, dass das Taximeter-Modell einen Effekt auf die Auswahl/Zulassung der Schüler zur Ausbildung zur Folge hatte.

Im Laufe der neunziger Jahre wiesen die Bildungsausgaben keinen einheitlichen Trend in den einzelnen Ländern auf. In den Niederlanden waren die Gesamtausgaben zwischen 1990 und 1996 relativ konstant; dahinter verbergen sich aber gegenläufige Trends in den einzelnen Bildungssegmenten. Ausgaben in der Primär- und Sekundarstufe stiegen um 5%, in der Tertiärausbildung ver-

[3] Für einen Überblick des Finanzierungssystems siehe *CEDEFOP* (1998).

ringerten sich die Kosten um 5%. Im Gegensatz dazu stiegen die Ausbildungskosten in jedem größeren Bildungsbereich in Österreich. Der durchschnittliche Kostenanstieg betrug 32%, wobei dei Ausgaben im Universitätsbereich besonders stark stiegen (+41%); aber mit +27% zählten die Kostensteigerungen im Primär- und Sekundärbereich ebenfalls zu den höchsten der OECD-Länder. Eine unterschiedliche demographische Dynamik ebenso wie institutionelle Faktoren und bildungspolitische Schwerpunktsetzungen können für die großen internationalen Kostenunterschiede verantwortlich sein.

*Abbildung 2: Veränderung der privaten und öffentlichen Bildungsausgaben nach Bildungsniveau in OECD-Ländern (1990-1996)*




Q: OECD 2000A, S.58.

Zusammenfassend kann gesagt werden, dass das holländische Bildungssystem das effizienteste ist, wenn die Lernerfolge der Schüler den finanziellen Aufwendungen gegenübergestellt werden. Die Kenntnisse der Schüler in Mathematik und den Naturwissenschaften zählen zu den höchsten der OECD-Länder und die Kosten der Bildung in Relation zum BIP zu den geringsten. Dieser internationale Vergleich kann allerdings nur einen ersten Einblick in die Kosten des Staates und der Individuen für die Aus- und Weiterbildung liefern. Das Finanzierungssystem der Bildung ist nämlich in den umfassenderen Rahmen der Sozialversicherung und des Steuersystems eingebettet – eine Sichtung dieses Systems nach ihrem Einfluss auf das Bildungsverhalten der Bevölkerung übersteigt jedoch den hier vorgegebenen Forschungsrahmen bei weitem.

Ein internationaler Vergleich der Effizienz des Bildungssystems kann nicht auf eine Analyse der Ausgaben pro Schüler oder Student verzichten. Bei einem internationalen Vergleich ist allerdings zu berücksichtigen, dass sich Unterschiede in den Schüler/Lehrer Quoten in den einzelnen Bildungssegmenten aus einer Kombination vieler Faktoren ergeben können, etwa unterschiedlichen demographischen Strukturen und der Asymmetrie der Anpassungsgeschwindigkeit. So kann etwa ein demographisch bedingter Anstieg der Zahl der Lehrer in einem Schultyp (Babyboom) nicht so rasch reduziert werden wie es der Rückgang der Jahrgangsbesetzungen wünschenswert erschienen ließe, d. h. wenn der Babyboom von einem raschen Geburtenrückgang gefolgt wird (der Fall Österreichs zwischen 1963 und 1978). Die geringe durchschnittliche Zahl von Schülern pro Lehrer in der unteren und oberen Sekundarstufe in Österreich im Jahre 1998 ist z. B. eine Folge des besonders ausgeprägten Geburtenrückgangs, der auf den Babyboom folgte. Die Niederlande und Skandinavien hatten keinen so starken Geburteneinbruch wie Österreich. Die Niederlande dürften aber obendrein aus bildungspolitischen Überlegungen heraus eine überdurchschnittliche Zahl von Schülern je Lehrer aufweisen, da dies in allen Bildungssegmenten der Fall ist.

*Übersicht 12: Verhältnis von Schülern zu Lehrern nach Ausbildungsniveau*

*Berechnungen basieren auf Vollzeitäquivalenten im Jahre 1998*

| | Vorschule | Volksschule | Untere Sekundarstufe | Höhere Sekundarstufe | Alle Sekundarstufen | Alle Tertiärstufen |
|---|---|---|---|---|---|---|
| Australien | M | 17,9 | 14,7 | 16,8 | 15,5 | m |
| Österreich | 18,6 | 12,7 | 9,3 | 9,7 | 9,5 | m |
| Finnland | 11,9 | 17,7 | 11,0 | m | m | m |
| Deutschland | 23,2 | 21,6 | 16,3 | 13,6 | 15,5 | 12,4 |
| Niederlande | X | 17,8 | m | m | 18,5 | 18,7 |
| Schweden | M | 13,4 | 13,2 | 17,0 | 15,3 | 9,0 |
| Schweiz* | 18,7 | 16,3 | 12,1 | 17,6 | 14,0 | m |
| Verein. Königreich | 21,5 | 22,0 | 16,7 | 16,7 | 16,7 | 17,7 |
| USA | 18,0 | 16,5 | 17,1 | 14,7 | 15,9 | 14,6 |
| Länderdurchschnitt | 15,5 | 17,1 | 14,9 | 15,1 | 15,2 | 14,6 |

Q: *OECD* (2000A), S. 119. – * Nur öffentliche Einrichtungen.

## Überblick über den Arbeitsmarkt der Jugendlichen im Vergleich zu Erwachsenen

Die Arbeitslosigkeit der Jugendlichen ist in allen Ländern höher als die der Erwachsenen. Das Muster zwischen Teenagern und 20- bis 24-jährige ist allerdings im internationalen Vergleich nicht einheitlich.

Im Vereinigten Königreich lag die Arbeitslosenquote bei 6,3% im Jahre 1998, die der Jugendlichen (16 bis 24) war aber doppelt so hoch (12,3%). Eine genaue Überprüfung der Zahlen zeigt, dass vor allem Teenager mit Arbeitsmarktproblemen zu kämpfen haben (Übersicht 13). Sie hatten eine Arbeitslosenquote von 15,5%, wobei die Jugendlichen mit dem geringsten Ausbildungsniveau die größte Schwierigkeit hatten, einen Job zu finden (29,6%). Jugendliche zwischen 16 und 20, die eine obere Sekundarausbildung hatten, hatten "nur" eine Arbeitslosenquote von 13,1%. In Austra-

lien ist die Situation ähnlich. In Dänemark, Österreich und den Niederlanden hingegen ist die Jugendarbeitslosigkeit zwar höher als die der Erwachsenen, der Unterschied ist aber nicht so ausgeprägt wie in den angelsächsischen Ländern.

Die überdurchschnittliche Jugendarbeitslosigkeit ist im Hinblick auf den sinkenden Anteil der Jugendlichen am Arbeitsmarkt ein Paradoxon. Die Zahl der Jugendlichen sank in den neunziger Jahren gegenüber den achtziger Jahren um ein Drittel, einerseits aus demographischen Gründen (schwache Geburtenjahrgänge), andererseits infolge der Verlängerung der Schulbildung. Trotzdem haben sich die Arbeitsmarktchancen der Jugendlichen in Bezug auf die Beschäftigungsmöglichkeiten und die erzielbaren Einkommen nicht signifikant verbessert.

Eine Erklärung hiefür wird üblicherweise in der Entwicklung der Nachfrage gesehen: die traditionellen Eintrittspforten der Jugendlichen in den Arbeitsmarkt, nämlich in Berufe im industriell-gewerblichen Bereich, in Büroberufe, im Verkauf, im Gast- und Schankgewerbe und in persönlichen Diensten (Friseure) wurden knapper. Es stieg vor allem die Nachfrage nach hohen Qualifikationen im Managementbereich, in technischen und hochqualifizierten administrativen Tätigkeiten. Gleichzeitig wurden viele Jobs im untersten Lohnsegment geschaffen, was zur Folge hatte, dass Jugendliche heute häufig schlechtere Arbeitsmarktchancen haben als noch vor 10 Jahren.

*Übersicht 13: Jugendarbeitslosenquoten nach höchster abgeschlossener Ausbildung und Altersgruppe (1998)*

| | Alle Bildungsstufen unter der höheren Sekundarstufe | | | Höhere Sekundarstufe und post-sekundäre nicht-tertiäre Bildung | | | Tertiärstufe (Typ B) | | Tertiärstufe (Typ A) und fortgeschr. Forschungsprogr. | | Alle Bildungsstufen | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ISCED 0/1/2 | | | ISCED 3/4 | | | ISCED 5B | | ISCED 5A/6 | | | | |
| | 15-19 | 20-24 | 25-29 | 15-19 | 20-24 | 25-29 | 20-24 | 25-29 | 20-24 | 25-29 | 15-19 | 20-24 | 25-29 |
| Australien | 23,6 | 20,8 | 12,7 | 12,0 | 10,8 | 6,8 | 6,9 | 5,4 | 5,2 | 2,7 | 19,4 | 12,0 | 7,4 |
| Österreich* | 8,4 | 7,6 | 10,9 | 8,8 | 4,3 | 3,2 | 4,1 | 3,8 | m | 4,2 | 8,6 | 4,7 | 4,4 |
| Dänemark | 8,3 | 9,2 | 10,4 | 12,1 | 4,8 | 5,9 | 9,5 | 4,7 | m | 9,5 | 8,6 | 6,1 | 6,4 |
| Finnland* | 34,5 | 29,1 | 23,5 | 31,8 | 20,7 | 15,4 | 15,9 | 12,2 | 13,5 | 8,5 | 33,6 | 21,3 | 14,8 |
| Frankreich | 23,8 | 37,2 | 26,7 | 26,5 | 22,8 | 15,4 | 14,7 | 10,5 | 18,4 | 11,1 | 24,4 | 25,6 | 16,1 |
| Deutschland | 6,9 | 16,3 | 20,4 | 7,3 | 8,2 | 7,7 | m | 4,8 | m | 4,9 | 7,6 | 9,9 | 8,7 |
| Irland** | 16,9 | 22,3 | 15,1 | 10,8 | 7,4 | 4,6 | 5,4 | 3,5 | 5,4 | 3,1 | 14,3 | 10,3 | 6,9 |
| Niederlande*** | 12,9 | 6,8 | 5,9 | 7,3 | 4,3 | 1,9 | x(5A/6) | x(5A/6) | 4,8 | 1,5 | 11,8 | 5,6 | 3,6 |
| Norwegen* | 26,0 | 13,2 | 9,1 | 13,1 | 8,0 | 5,0 | 5,9 | 3,1 | 8,7 | 5,3 | 16,0 | 8,6 | 5,6 |
| Spanien | 40,9 | 29,4 | 24,6 | 42,5 | 32,2 | 21,9 | 31,7 | 19,5 | 43,6 | 28,6 | 41,2 | 31,9 | 24,3 |
| Schweden*** | 18,4 | 26,7 | 21,2 | 29,1 | 14,8 | 10,2 | 7,1 | 6,7 | 1,2 | 3,4 | 20,4 | 15,4 | 10,1 |
| Ver. Königreich | 29,6 | 24,5 | 19,8 | 13,1 | 9,9 | 7,3 | 6,1 | 2,5 | 6,8 | 2,9 | 15,5 | 10,1 | 7,0 |
| USA | 18,3 | 17,8 | 12,1 | 9,9 | 8,5 | 6,3 | 1,9 | 3,2 | 2,3 | 1,9 | 15,2 | 8,4 | 5,3 |
| Durchschnitt | 22,1 | 18,9 | 15,2 | 20,9 | 13,6 | 9,0 | 10,8 | 7,1 | 13,8 | 7,7 | 20,2 | 13,8 | 9,2 |

Q: *OECD* (2000A), S. 271. – * Referenzjahr 1997. – ** ISCED 5B ist teilweise in ISCED 4 enthalten. – *** ISCED 4 ist in ISCED 5B enthalten.

Prinzipiell gibt es drei Möglichkeiten, die Arbeitslosenquoten der Unqualifizierten zu senken:

- indem man die Lohnersatzquoten, d. h. die Arbeitslosenunterstützung, verringert,
- indem die Löhne am unteren Ende der Lohnskala nicht zu stark steigen,
- indem man den Qualifikationsgrad und das Bildungsniveau anhebt.

Die ersten zwei Maßnahmen erhöhen die Einkommensungleichheit, die dritte ist bestrebt, die Arbeitsproduktivität der Unqualifizierten anzuheben und damit die Beschäftigungschancen zu verbessern. Die Niederlande, das Vereinigte Königreich und Australien haben alle drei Instrumente eingesetzt, Dänemark und Österreich haben die dritte Option forciert; in den letzten Jahren gewinnen aber auch die ersten zwei Instrumente an Bedeutung.

## Der Wert der Ausbildung: Kosten-Nutzen-Analysen

Aus einer ökonomischen Perspektive können die Ausgaben des Staates für Aus- und Weiterbildung als Investition angesehen werden, die sich rentiert, wenn der Barwert der erwarteten Erträge für die Gesellschaft den Barwert der erwarteten Kosten für die Gesellschaft übertrifft. Die Erträge und Kosten für das Individuum und den Arbeitgeber unterscheiden sich von der gesellschaftlichen Ertragsrate und können daher getrennt analysiert werden. Es ist aber schwierig, eine eindeutige Antwort auf die Frage der optimalen Kombination von öffentlichem und privatem Finanzierungsanteil zu finden, da es einerseits nicht einfach ist, den vollen wirtschaftlichen Nutzen von Aus- und Weiterbildung zu quantifizieren, andererseits ist eine Zuordnung auf das Individuum hie und die Gesellschaft da schwer möglich.

Es gibt keine übereinstimmende Sichtweise unter den Wissenschaftern über die Spannweite der echten wirtschaftlichen Erträge der Bildung einerseits und die Messmethode, die für eine Quantifizierung anzuwenden ist, andererseits. Die methodologischen Probleme ergeben sich aus der Tatsache, dass die Bildungschancen für alle Bevölkerungsgruppen nicht gleich gut sind, sondern von Faktoren wie dem sozialen Status der Eltern, den regionalen und finanziellen Schulbesuchsmöglichkeiten, dem Schultyp sowie angeborenen Fähigkeiten des Individuums abhängen. Dies sind nur einige Mechanismen, andere liegen auf der Nachfrageseite des Arbeitsmarktes und betreffen die Branche, die Betriebsgröße und die Berufe. Diese Faktoren auf der Angebots- und Nachfrageseite tragen dazu bei, dass die Erträge einundderselben Ausbildung für verschiedene Individuen unterschiedlich hoch sein können (*Card,* 1994)[4].

[4] Untersuchungen in England und Irland haben gezeigt, dass sich die Bildungsbeteiligung in höheren Schulen infolge der Verringerung der Ausbildungskosten für Kinder ärmerer Schichten merklich erhöhte. Das führte dazu, dass weniger begabte aus reichen Familien von "guten" Jobs verdrängt wurden, d. h. die Bildungsprämie (Rente), die Kinder begüterter Eltern erhielten, schrumpfte (*Dearden,* 1998, *Denny – Harmon,* 2000).

Aus praktischen Überlegungen heraus ist der Grenzertrag einer zusätzlichen Bildungsausgabe der relevante Indikator für den gesellschaftlichen Nutzen der Bildungsausgaben. Die höheren Einkommen, die sich aus der Verbesserung des Humankapitalstocks ergeben – gemessen an der Steigerung der Bildungsausgaben – sind der Investitionsertrag, d. h. die Prämie für eine bessere Qualifikationsstruktur der Arbeitskräfte ebenso wie eine höhere gesamtwirtschaftliche Arbeitsproduktivität. Man kann also zwischen einer wirtschaftlichen Ertragsrate der Bildungsinvestition für das Individuum, für den Arbeitsmarkt (über die Anhebung der Arbeitsproduktivität), und für die Gesellschaft unterscheiden.

Lohnunterschiede können das Resultat unterschiedlicher Investitionsquoten in das Humankapital sein. Eine normale Ertragsquote einer Investition lässt erwarten, dass man für eine Verlängerung der Ausbildung einen besser bezahlten Job erhält, d. h. die Lohnunterschiede sollten den Einkommensausfall kompensieren, den man hat, weil man nicht gleich eine Arbeit aufnimmt sowie etwaige direkte Ausbildungskosten abdecken, die aus der Verlängerung der Ausbildung über die Pflichtschule hinaus entstehen.

Wenn die Ertragsrate höherer Schulbildung merklich über dem normalen Zinsertrag einer Kapitalinvestition liegt, kann das als Beweis dafür gelten, dass die Gesellschaft zu wenig Absolventen höherer Schulen hat. Sie können daher infolge ihrer Knappheit eine Rente beziehen, die es bei einem höheren Wettbewerb, d. h. mehr Absolventen mit dieser Qualifikation, nicht gäbe.

## Individuelle Ertragsrate einer Bildungsinvestition

Jedes der Länder, das hier untersucht wird, hat den wirtschaftlichen Nutzen/Ertrag von Bildungsinvestitionen analysiert. Für die Berechnungen werden die verschiedensten Datenquellen verwendet, die eine große Bandbreite von Fragen abdecken, die sich im Zusammenhang mit der Berechnung von Ertragsraten der unterschiedlichen Bildungswege ergeben. Die Berechnung von Ertragsraten konzentriert sich in den entwickelten Industrieländern auf den Zusatznutzen der Ausbildung, die über die Pflichtschule hinausgeht. Der theoretische Zutritt folgt *Mincer* (1974) und seiner Schätzung einer Humankapitalertragsfunktion. Die Schätzungen können den Schwerpunkt in der Erklärung der geschlechtsspezifischen Lohnunterschiede haben, oder Lohnunterschiede zwischen den verschiedenen Bildungskanälen erklären wollen. Ein weiterer Schwerpunkt kann auf dem Effekt der unterschiedlichen Beschäftigungsdauer (Arbeitserfahrung) auf den Lohn sein, auf Lohnunterschiede zwischen Berufen, dem Familienhintergrund, der angeborenen Fähigkeit und Rasse, zwischen dem öffentlichen und privaten Sektor, zwischen den verschiedenen Wirtschaftsbranchen und Berufen, zwischen Betrieben eingehen. Auch Erträge der Weiterbildungsmaßnahmen von Betrieben können den Forschungsschwerpunkt darstellen.

Ein Überblick über die relativen Einkommen nach höchster abgeschlossener Ausbildung in OECD-Ländern (*OECD,* 2000A, S. 297) zeigt, dass es signifikante Unterschiede in den individuellen Ertragsraten der Aus- und Weiterbildung zwischen den einzelnen Ländern gibt (Übersicht 14). Im

Vereinigten Königreich verdienten Personen (25- bis 64-jährige), die nur die Pflichtschule absolviert hatten, d. h. eine Ausbildung unter ISCED 3/4 hatten, um 36% weniger als Personen mit abgeschlossener mittlerer Ausbildung. Das ist einer der höchsten Lohnabschläge von Hilfsarbeitertätigkeit gegenüber Facharbeiterqualifikationen in der OECD; das Pönale für keine Weiterbildung ist nur in den USA noch höher. Aber auch die Schweiz (26%), Australien (21%) und Deutschland (19%) haben relativ hohe Einkommensunterschiede zwischen Pflichtschulabsolventen und Absolventen der mittleren Schulen. Am geringsten ist der Lohnunterschied zwischen Hilfs- und Facharbeitern in Finnland (3%), gefolgt von Schweden (10%): Dänemark liegt mit einem Lohnabschlag von 15% auf demselben Niveau wie Norwegen, Frankreich und die Niederlande.

Die Ertragsrate einer Universitätsausbildung (ISCED 5 und 6) relativ zu einer mittleren Fachausbildung ist im Vereinigten Königreich eine der höchsten in den OECD-Ländern (68%), d. h. die Lohnspreizung ist in England zwischen den verschiedenen Bildungsniveaus überdurchschnittlich hoch. Ähnlich hohe Erträge wie in England bringt die Universitätsausbildung in Frankreich (69%), Deutschland (63%) und der Schweiz (62%). In Finnland ist die Ertragsrate mit 86% noch höher, eine Folge der Schwerpunktsetzung der universitären Ausbildung auf den Informations- und Kommunikationstechnologiebereich.

Im Gegensatz dazu ist der Mehrertrag einer Universitätsausbildung gegenüber einer mittleren Fachqualifikation in Dänemark mit 15% relativ gering. Der relative Mehrertrag ist ebenso hoch wie der Einkommensabschlag der Hilfsarbeiter gegenüber der mittleren Qualifikation. D. h. in Dänemark ist eine gewisse Symmetrie der Einkommensunterschiede über und unter der oberen Sekundarstufe gegeben. Nur die lange Variante der Universitätsausbildung (ISCED 5a und 6) versetzt einen in Dänemark in die Lage, einen überdurchschnittlichen Einkommensertrag gegenüber einem Absolventen der oberen Sekundarstufe zu erzielen, nämlich um 40%. mehr Diese Ertragsrate ist vergleichbar mit Australien, den Niederlanden und Norwegen, aber etwas höher als in Schweden.

Diese großen internationalen Unterschiede in den relativen Einkommen verschiedener Ausbildungs- und Qualifikationsniveaus ergeben sich aus einer Vielzahl von Faktoren:

- der Nachfrage nach bestimmten Qualifikationen am Arbeitsmarkt (Wirtschaftsstruktur, Technologie),
- dem Angebot an Arbeitskräften der verschiedensten Ausbildungskategorien,
- Mindestlohnregelung (sie können bewirken, dass die Lohnunterschiede geringer sind als im Fall freier Marktmechanismen, d. h. die Lohndifferentiale können geringer sein als die Produktivitätsunterschiede),
- dem Einbindungsgrad der Berufstätigen in ein Kollektivvertragslohnsystem und dem gewerkschaftlichen Organisationsgrad,

- der Arbeitserfahrung (Alter, Dauer der Beschäftigung) von Arbeitskräften mit geringem und hohem Ausbildungsniveau,
- dem unterschiedlichen Ausmaß von Teilzeitarbeit in den verschiedenen Ausbildungssegmenten,
- der Aufteilung der Ausbildungskosten zwischen dem Individuum, dem öffentlichen Sektor und den Betrieben.

*Übersicht 14: Relative Einkommen der 25- bis 64-jährigen und der 30- bis 44-jährigen am Erwerbsarbeitsmarkt nach höchster abgeschlossener Ausbildung und Geschlecht 1997*

*(ISCED 3/4 = 100)*

| | | Alle Bildungsstufen unter der oberen Sekundarstufe | | Tertiärstufe (Typ B) | | Tertiärstufe (Typ A) und fortgeschr. Forschungsprogramme | |
|---|---|---|---|---|---|---|---|
| | | ISCED 0/1/2 | | ISCED 5B | | ISCED 5A/6 | |
| | | Alter 25-64 | Alter 30-44 | Alter 25-64 | Alter 30-44 | Alter 25-64 | Alter 30-44 |
| Australien | Männer | 87 | 83 | 120 | 116 | 144 | 138 |
| | Frauen | 85 | 84 | 113 | 112 | 154 | 154 |
| | M + F | 79 | 75 | 103 | 101 | 136 | 131 |
| Dänemark | Männer | 86 | 86 | 124 | 121 | 139 | 139 |
| | Frauen | 88 | 88 | 119 | 115 | 136 | 144 |
| | M + F | 85 | 85 | 115 | 110 | 140 | 142 |
| Finnland* | Männer | 95 | 92 | 129 | 125 | 189 | 174 |
| | Frauen | 101 | 99 | 123 | 122 | 179 | 172 |
| | M + F | 97 | 96 | 121 | 117 | 186 | 173 |
| Frankreich** | Männer | 88 | 88 | 130 | 137 | 176 | 175 |
| | Frauen | 80 | 81 | 132 | 138 | 161 | 168 |
| | M + F | 84 | 85 | 126 | 132 | 169 | 171 |
| Deutschland | Männer | 88 | 87 | 106 | 108 | 156 | 144 |
| | Frauen | 87 | 84 | 111 | 110 | 156 | 159 |
| | M + F | 81 | 82 | 108 | 106 | 163 | 153 |
| Italien*** | Männer | 73 | 77 | x(5A/6) | x(5A/6) | 173 | 161 |
| | Frauen | 76 | 77 | x(5A/6) | x(5A/6) | 129 | 133 |
| | M + F | 76 | 80 | x(5A/6) | x(5A/6) | 156 | 148 |
| Niederlande* | Männer | 87 | 86 | x(5A/6) | x(5A/6) | 136 | 129 |
| | Frauen | 75 | 74 | x(5A/6) | x(5A/6) | 141 | 145 |
| | M + F | 84 | 84 | x(5A/6) | x(5A/6) | 137 | 132 |
| Norwegen | Männer | 85 | 85 | x(5A/6) | x(5A/6) | 138 | 140 |
| | Frauen | 84 | 90 | x(5A/6) | x(5A/6) | 140 | 143 |
| | M + F | 85 | 87 | x(5A/6) | x(5A/6) | 138 | 138 |
| Schweden | Männer | 88 | 88 | x(5A/6) | x(5A/6) | 135 | 135 |
| | Frauen | 89 | 87 | x(5A/6) | x(5A/6) | 125 | 121 |
| | M + F | 90 | 89 | x(5A/6) | x(5A/6) | 129 | 128 |
| Schweiz** | Männer | 81 | 82 | 119 | 122 | 145 | 139 |
| | Frauen | 74 | 82 | 123 | 122 | 157 | 164 |
| | M + F | 74 | 79 | 137 | 140 | 162 | 156 |
| Vereinigtes Königreich** | Männer | 73 | 70 | 125 | 124 | 157 | 157 |
| | Frauen | 64 | 61 | 135 | 133 | 188 | 192 |
| | M + F | 64 | 63 | 125 | 125 | 168 | 172 |
| USA ** | Männer | 69 | 67 | 113 | 114 | 183 | 182 |
| | Frauen | 62 | 60 | 127 | 130 | 180 | 191 |
| | M + F | 70 | 68 | 116 | 116 | 184 | 184 |

Q: *OECD* (2000A), S. 297. – * 1996. – ** 1998. – *** 1995.

Die Einkommensdifferentiale geben nur erste Anhaltspunkte über den Ertrag der Bildungsinvestition, d. h. die Verlängerung der Ausbildung. Für eine echte Ertragsrate müssten die Nettokosten der Verlängerung der Ausbildung dem Nettonutzen gegenübergestellt werden. Eine saubere Kalkulation ist aber kaum möglich, da die Bildungskosten nicht zur Gänze vom Staat oder dem Individuum getragen werden. Auch die höhere Arbeitsproduktivität ist nicht nur eine Folge besserer Ausbildung, sondern resultiert auch aus einer fortgeschrittenen Technologie und einer effizienteren Arbeitsorganisation, sowie besserem Management. Hinzu kommt, dass Individuen, die ein höheres Maß angeborener Fähigkeiten und eine größere Motivationsbereitschaft haben, d. h. die geringere Lernkosten aufweisen, eher ihre Ausbildung verlängern als lernschwache Personen. Letztere können aber höhere Löhne erzielen als weniger motivierte Personen mit gleichem Ausbildungsgrad (*Griliches,* 1977). Des weiteren wären den direkten Ausbildungskosten die Opportunitätskosten hinzuzurechnen, d. h. die entgangenen Erträge infolge einer Verlängerung der Ausbildung (bei sofortiger Arbeitsaufnahme nach der Pflichtschule könnte ja schon Erwerbseinkommen lukriert werden). Entgangene Erträge sind nicht nur ein wichtiger Bestandteil der individuellen oder privaten Bildungskosten, sondern auch der gesellschaftlichen Kosten infolge von entgangenen Steuereinnahmen und Sozialversicherungsabgaben. Des weiteren muss die Steuerprogression berücksichtigt werden, wenn man individuelle und gesellschaftliche Nettoertragsraten der Investitionen in die Aus- und Weiterbildung über den Lebenshorizont berechnen will.

Ein weiterer Aspekt trägt ein gewisses Maß der Unsicherheit in die Kalkulation der Ertragsrate hinein, nämlich die erwartete Beschäftigungsdauer im Erwerbszyklus, da sie den Abzinsungsfaktor des erwarteten Lebenseinkommens beeinflusst (subjektiver Zinssatz). Die Erträge des Schulbesuches sind vor allem am Beginn des Erwerbslebens hoch – in dieser Phase sind sie aus den unterschiedlichen Einstellungsgehältern nach Schulbildung ableitbar. Mit der Dauer der Erwerbstätigkeit übernimmt der Arbeitsmarkt in hohem Maß die Weiterbildung, d. h. die Arbeitserfahrung wird ein bestimmender Faktor für das weitere Lebenseinkommen (einschließlich Pensionen). Diese Ausführungen verdeutlichen, dass die üblichen Regressionsanalysen zur Berechnung von Bildungsertragsraten den Grad der Komplexität der Informationen, die für eine exakte Kalkulation der Kosten und des Nutzens der Bildung nötig wären, nicht erfassen können.

Weitere Faktoren, die zu berücksichtigen wären, sind:

- das Steuersystem,
- die echte Dauer der Ausbildung, die ja häufig länger als die Norm ist,
- Beiträge in das Pensionssystem.

Die beiden ersten Faktoren reduzieren die Nettoertragsrate der Bildungsinvestitionen, der dritte Faktor erhöht den Ertrag.

Zusammengefasst kann man sagen, dass die individuelle Nettoertragsrate geringer sein kann als die gesellschaftliche. Das ist vor allem dann der Fall, wenn es eine solidarische Lohnpolitik gibt und hohe Standards der Wohlfahrt (Lohnersatzleistungen und Sozialhilfe).

Der Unterschied zwischen der mikroökonomischen und der makroökonomischen Ertragsrate der Bildungsinvestition sollte wegen der Gefahr von falschen Anreizwirkungen nicht zu hoch werden. Eine zu große positive Diskrepanz (Individualertragsrate – Sozialertragsrate $> 0$) kann dazu führen, dass die Schulbesuchsquote in höheren Schulen/Universitäten höher ist, als es das Entwicklungsniveau der Volkswirtschaft verlangt. Eine zu große negative Diskrepanz (Individualertragsrate – Sozialertragsrate $< 0$) kann die individuelle Motivation zur Verlängerung der Ausbildung so stark reduzieren, dass anhaltende Produktivitätssteigerungen und Wirtschaftswachstum nicht mehr sichergestellt sind.

Eine Differenzierung der Ertragsrate der verschiedenen Ausbildungspfade ist sinnvoll, wenn man Anhaltspunkte für bildungspolitische Weichenstellungen gewinnen will.

Einen wichtigen Beitrag zur Analyse der Ertragsraten der Bildung hat *Psacharopoulus* (1987) geliefert. Er hat internationale Vergleiche angestellt, insbesondere zwischen entwickelten Industrieländern und Entwicklungsländern. Die Ergebnisse müssen mit Vorsicht interpretiert werden, insbesondere infolge der schwachen Datenlage und einiger mutiger Annahmen. *Castellanos* (1987) hat die wesentlichen Ergebnisse folgendermaßen zusammengefasst:

a) Ertragsraten von Investitionen in Aus- und Weiterbildung sind in Entwicklungsländern höher als in Industrieländern,

b) Volksschulbildung hat den höchsten Ertrag,

c) Ertragsraten der Bildungsinvestitionen übertreffen in Entwicklungsländern Investitionen in den physischen Kapitalstock während sie in Industrieländern im Schnitt etwa gleich hoch sind.

d) Unterschiede im Einkommen je Einwohner können eher aus dem unterschiedlichen Bildungsgrad der Bevölkerung erklärt werden als aus der unterschiedlichen physischen Kapitalausstattung.

e) Bildungsinvestitionen tragen in hohem Maße zum Wirtschaftswachstum bei, insbesondere in Entwicklungsländern.

f) Tertiärausbildung ist teurer als die Ausbildung im unteren Bildungssegment, insbesondere in Entwicklungsländern.

*Übersicht 15: Individuelle Ertragsraten der Bildung der Beschäftigten im Jahre 1995*

| Australien | Höhere Sekundarstufe | Nicht-Universitär | Universität |
|---|---|---|---|
| | | In % | |
| Frauen | 12,5 | 7,9 | 6,7 |
| Männer | 7,5 | 9,7 | 10,4 |
| *OECD Durchschnitt* | | | |
| Frauen | 16,4 | 11,1 | 12,5 |
| Männer | 14,9 | 10,7 | 12,4 |

Q: *OECD* (1998A: Tabelle A4.3).

Schätzungen der individuellen und gesellschaftlichen Ertragsraten der Schulbildung (*OECD,* 1998B, Tabelle A4.3) zeigen, dass die obere Sekundarstufe im Allgemeinen die höchsten Erträge abwirft, nämlich zwischen 15% (Männer) und 16% (Frauen) im Durchschnitt der OECD. Universitätsausbildung liegt an zweiter Stelle, gefolgt von nichtuniversitärer post-sekundärer Ausbildung. In Australien gibt es einen deutlichen Geschlechterunterschied in den Ertragsraten der Ausbildung. Männer haben die höchsten Ertragsraten mit einer Universitätsausbildung und Frauen mit einer oberen Sekundarausbildung. Dieser Unterschied deutet auf eine klare Geschlechtersegmentation im Bildungssektor hin (Übersicht 15). Eine jüngere Schätzung für Australien (*Borland et al.,* 2000) zeigt, dass die individuelle Ertragsrate für universitäre Ausbildung im Jahr 1997 bei 15% im Schnitt lag und die gesellschaftliche Ertragsrate bei 16,3%.

Eine differenziertere Schätzung individueller Ertragsraten der Bildung im Vereinigten Königreich geht von einer Kohorte von Individuen aus, die 1958 geboren wurden, und verfolgt ihren Schul- und späteren Erwerbsverlauf bis 1991 (*Dearden,* 1998). Diesen Daten zufolge lagen die individuellen Ertragsraten für die Verlängerung der Ausbildung im Schnitt zwischen 5% und 7% pro Jahr für Männer und zwischen 8% und 10% für Frauen. Die Ertragsrate der Bildung sinkt, wenn man zusätzliche Variablen in die Standardlohnfunktion von Mincer einfügt, wie den sozialen Hintergrund der Familie, den Schultypus, individuelle Fähigkeiten (Mathematik- und Lesetests) sowie Beschäftigungsvariablen. Die einfache Formel weist eine Anhebung des Erwerbseinkommens um 8% für Männer und 12% für Frauen aus, wenn sie die Schulbank ein Jahr länger drücken. Wenn man in der Funktion berücksichtigt, dass es ein Stadt-Land-Lohngefälle gibt, verringert sich der Ertrag der Bildungsinvestition auf 7,2% für Männer und 11,6% für Frauen. Wenn man den Unterschied in angeborenen Fähigkeiten, gemessen am Testergebnis im 8. Schuljahr in Mathematik und im Lesen berücksichtigt, sinkt die Ertragsrate der Bildungsverlängerung auf 5,2% für Männer und 10% für Frauen. Wenn man zusätzlich berücksichtigt, dass der familiäre Hintergrund der Eltern (sozialer Status und Interesse an der Schulbildung der Kinder) für den Schulerfolg wichtig ist und das erzielbare Einkommen von der Wirtschaftsbranche und der Betriebsgröße abhängig ist, in der man beschäftigt ist, sinkt der Ertrag der Bildung auf 4,8% bei Männern und 8,3% bei Frauen.

Eine Differenzierung der Ertragsraten der Bildung des Geburtsjahrganges 1958 im Jahr 1991 (33-jährig) nach höchster abgeschlossener Ausbildung im Alter von 23 Jahren, wies nach, dass eine

Verlängerung der Schulbildung über die Pflichtschule hinaus mit signifikanten Erträgen verbunden war. Der Mehrertrag einer Universitätsausbildung gegenüber Pflichtschule lag bei 71% für Männer und 88% bei Frauen. Der Mehrertrag der Matura (A-levels) lag bei 55% für Männer (56% für Frauen) gegenüber beschäftigten Personen mit Pflichtschule als höchstem Bildungsabschluss. Wenn man den Effekt der angeborenen Fähigkeiten, des Schultyps, des Familienhintergrunds und der Beschäftigungscharakteristika auf das Lohnniveau in der Lohnfunktion berücksichtigt, schrumpfte die Ertragsrate der Universitätsausbildung gegenüber Hilfsarbeitern auf 50% für Männer und auf 63% für Frauen.

*Übersicht 16: Individuelle Ertragsrate eines zusätzlichen Jahres des Schulbesuches (Vollzeitschule)*
$ln\ W_{it} = \beta_0 + \beta_1 S_{it} + x_{it} + u_{it}$
*Geburtskohorte 1958 in Beschäftigung 1991*

| | Spezifikation | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | $x1$ | | $x2$ | | $x3$ | | $x4$ | |
| | Koeffizient | (S.E.) | Koeffizient | (S.E.) | Koeffizient | (S.E.) | Koeffizient | (S.E.) |
| | Männer | | | | | | | |
| Konstante | 1,076 | (0,044) | 1,335 | (0,057) | 1,364 | (0,060) | 1,235 | (0,133) |
| Ausbildungsjahre ($S$) | 0,080 | (0,004) | 0,072 | (0,004) | 0,052 | (0,004) | 0,048 | (0,004) |
| Anzahl der Beobachtungen | 2,597 | | 2,597 | | 2,597 | | 2,597 | |
| $R^2$ | 0,1494 | | 0,2139 | | 0,2635 | | 0,2949 | |
| | Frauen | | | | | | | |
| Konstante | 0,189 | (0,052) | 0,478 | (0,070) | 0,494 | (0,077) | 0,722 | (0,147) |
| Ausbildungsjahre ($S$) | 0,122 | (0,004) | 0,116 | (0,004) | 0,100 | (0,005) | 0,083 | (0,005) |
| Anzahl der Beobachtungen | 2.363 | | 2.363 | | 2.363 | | 2.363 | |
| $R^2$ | 0,2502 | | 0,2878 | | 0,3131 | | 0,4138 | |

Q: *Dearden* (1998), S. 17, 19.
$x1$ = Grundertrag(raw return)
$x2$ = kontrolliert nach der Region des Wohnorts
$x3$ = kontrolliert nach Region, Fähigkeiten und Schultyp
$x4$ = kontrolliert nach Region, Fähigkeiten, Schultyp, familiären Background und Arbeitscharakteristika
$S$ = Schuljahre nach der Grundschule
$u$ = Fehlerterm

Der Abschluss einer oberen Sekundarausbildung war mit relativ hohen finanziellen Erträgen verbunden:

- A-Levels, die die Ausbildung gegenüber der Pflichtschule im Schnitt um 2½ Jahre Vollzeitschule verlängern, brachten einen um 37% höheren Ertrag als der Pflichtschulabschluss.
- Mittlere berufsorientierte Ausbildung erhöhte das Einkommen im Jahr im Schnitt um 12% (2-jährige Vollzeitausbildung) gegenüber einem Pflichtschulabsolventen.
- Die jährliche Ertragsrate für höhere berufsorientierte Qualifikation (3,5 Jahre Vollzeitschule über die Pflichtschule hinaus) lag bei 12% gegenüber einem Pflichtschulabsolventen.

Diese Ergebnisse verdeutlichen, dass die Pflichtschule sehr geringe Erträge der Schulbildung vermittelt.

*Übersicht 17: Die Erträge der Schulbildung nach höchster abgeschlossener Ausbildung und Geschlecht*

*Einkommensfunktion: ln* $W_{it} = \beta_0 + \beta_1 S_{it} + x_{it} + u_{it}$
*Geburtskohorte 1958 mit höchster abgeschlossener Ausbildung im Alter von 23 Jahren, die beschäftigt ist (1991)*

| | Spezifikation | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | $x1$ | | $x2$ | | $x3$ | | $x4$ | |
| | Koeffizient | (S.E.) | Koeffizient | (S.E.) | Koeffizient | (S.E.) | Koeffizient | (S.E.) |
| | Männer | | | | | | | |
| Konstante | 1,685 | (0,025) | 1,880 | (0,038) | 1,790 | (0,041) | 1,656 | (0,127) |
| Höchste abgeschlossene Ausbildung 1981: | | | | | | | | |
| Andere | 0,157 | (0,031) | 0,132 | (0,030) | 0,109 | (0,030) | 0,097 | (0,029) |
| Untere Berufsausbildung | 0,284 | (0,029) | 0,270 | (0,028) | 0,216 | (0,028) | 0,194 | (0,028) |
| Mittlere Berufsausbildung | 0,353 | (0,029) | 0,342 | (0,029) | 0,274 | (0,029) | 0,251 | (0,029) |
| A-Levels | 0,552 | (0,037) | 0,506 | (0,036) | 0,405 | (0,037) | 0,376 | (0,038) |
| Höhere Berufsausbildung | 0,549 | (0,034) | 0,526 | (0,033) | 0,444 | (0,033) | 0,419 | (0,034) |
| Hochschulausbildung | 0,707 | (0,031) | 0,658 | (0,031) | 0,530 | (0,034) | 0,501 | (0,036) |
| Anzahl der Beobachtungen | 2,597 | | 2,597 | | 2,597 | | 2,597 | |
| $R^2$ | 0,2263 | | 0,2892 | | 0,3106 | | 0,3352 | |
| | Frauen | | | | | | | |
| Konstante | 1,343 | (0,023) | 1,611 | (0,040) | 1,532 | (0,045) | 1,582 | (0,133) |
| Höchste abgeschlossene Ausbildung 1981: | | | | | | | | |
| Andere | 0,079 | (0,030) | 0,058 | (0,030) | 0,047 | (0,030) | 0,027 | (0,028) |
| Untere Berufsausbildung | 0,173 | (0,027) | 0,157 | (0,027) | 0,122 | (0,028) | 0,084 | (0,027) |
| Mittlere Berufsausbildung | 0,374 | (0,033) | 0,356 | (0,032) | 0,302 | (0,035) | 0,229 | (0,034) |
| A-Levels | 0,562 | (0,038) | 0,541 | (0,037) | 0,479 | (0,039) | 0,372 | (0,039) |
| Höhere Berufsausbildung | 0,671 | (0,034) | 0,655 | (0,034) | 0,606 | (0,036) | 0,452 | (0,037) |
| Hochschulausbildung | 0,882 | (0,032) | 0,832 | (0,032) | 0,754 | (0,037) | 0,636 | (0,040) |
| Anzahl der Beobachtungen | 2.363 | | 2.363 | | 2.363 | | 2.363 | |
| $R^2$ | 0,3333 | | 0,3702 | | 0,3788 | | 0,4447 | |

Q: *Dearden* (1998), p. 21,22.
$x1$ = Grundertrag (raw return)
$x2$ = kontrolliert nach der Region des Wohnorts
$x3$ = kontrolliert nach Region, Fähigkeiten und Schultyp
$x4$ = kontrolliert nach Region, Fähigkeiten, Schultyp, familiären Background und Arbeitscharakteristika
$S$ = Schuljahre nach der Grundschule
$u$ = Fehlerterm

Andere Datenquellen, z. B. Familienausgabenerhebung, die Familienressourcenerhebung sowie das Britische Haushaltspanel, bestätigen die Ergebnisse, die aus obiger Longitudinaldatenanalyse gewonnen wurden (*Chevalier – Walker,* 2001). Die lange Zeitreihe von Querschnittsdatenerhebungen erlaubt zusätzlich noch Aussagen über die Entwicklung der Erträge der Schulbildung im Zeitverlauf. Aus diesen Analysen kann man schließen, dass

- die Ertragsrate der Verlängerung der Ausbildung um ein Jahr bei Männern zwischen 6% und 9% liegt und bei Frauen zwischen 8% und 12%.

- im Schnitt für alle Ausbildungsgrade die Beziehung zwischen dem Lohnniveau und der Ausbildung bei Männern flacher ist als bei Frauen, dass aber Männer im Schnitt mehr verdienen als Frauen.
- der Ertrag der Verlängerung der Ausbildung in den späten achtziger Jahren und frühen neunziger Jahren gestiegen ist, obschon es eine signifikante Steigerung der Bildungsbeteiligung in mittleren und höheren Schulen in dieser Zeit gegeben hat, d. h. die Lohnunterschiede zwischen den Qualifikationsebenen haben zugenommen.
- der Ertrag einer längeren Beschäftigungsdauer (Arbeitserfahrung) ist für Männer höher als für Frauen, was darauf hindeutet, dass Männer eher in Großbetrieben mit ausgeprägten Karriereleitern und Senioritätsentlohnung arbeiten als Frauen.
- der Bildungsertrag ist für Weiße höher als für Farbige.
- der Ertrag einer Universitätsausbildung gegenüber Matura (A-levels) ist von der Studienrichtung abhängt (*Harkness – Machin,* 1999).
  - Diplome im Bereich der Natur- und Ingenieurwissenschaften sowie in Sozial- und Managementwissenschaften haben die höchsten Erträge.
  - Humanwissenschafter und Absolventen von Kunstakademien haben die geringsten Erträge.
- Frauen konnten in den neunziger Jahren in folgenden Fachrichtungen der Universitätsausbildung höhere Erträge erzielen: den Naturwissenschaften (inklusive Medizin), dem Ingenieurbereich sowie in den Humanwissenschaften/Kunstakademien; sie mussten aber Abstriche im Einkommenszuwachs seit den achtziger Jahren hinnehmen hinnehmen, wenn sie Rechtswissenschaften studierten.
- Erträge der Universitätsausbildung stiegen bei Männern seit den achtziger Jahren in allen Fächern außer den Humanwissenschaften/Kunstakademien – hier hatten Männer kaum je einen höheren Investitionsertrag als mit Maturaabschluss (A-Levels).

Es ist sehr schwierig, branchenspezifische von berufsspezifischen Ertragsraten der Aus- und Weiterbildung zu trennen. Gewisse Berufe sind fast ausschließlich Tätigkeiten im öffentlichen Sektor, z. B. medizinische Fachkräfte und Lehrer, andere sind auf die Privatwirtschaft abgestellt, z. B. VerkäuferInnen. Im Vereinigten Königreich haben Frauen dieselbe Bildungsertragsrate im öffentlichen Sektor wie in der Privatwirtschaft. Bei Männern gibt es einen minimalen Unterschied – die Bildungsertragsrate ist im öffentlichen Sektor um 1% geringer als in der Privatwirtschaft[5]. Die obigen Berechnungen für England stellten Brutto-Ertragsraten der Investitionen in eine längere Ausbildung dar, d. h. einkommensbezogene Steuern und Transferleistungen blieben unberücksichtigt.

[5] Genaueres hierzu in *Disney et al* (1998).

*Chevalier – Walker* (2001) haben Ertragsraten auf Basis der Nettoeinkommen berechnet (Haushaltspaneldaten und Haushaltserhebung). Diesen Berechnungen zufolge liegen die durchschnittlichen Nettoertragsraten der Verlängerung der Ausbildung um ca. 20% unter den Bruttoraten. Sie liegen bei 5% für Männer und bei 7% für Frauen.

In den Niederlanden ist es nicht leicht, die Ertragsrate für ein zusätzliches Ausbildungsjahr zu berechnen, da das Schulsystem sehr flexibel ist und viele laterale Übergänge möglich sind. Daher konzentriert man sich in der Erforschung der Bildungsertragsrate auf die Kalkulation von Ertragsraten für bestimmte Bildungspfade; die Verlängerung der Ausbildung entlang eines Pfades erlaubt die Berechnung einer Ertragsrate für diese Bildungsinvestition (*Koning,* 1998, *Odink – Kunnen,* 1998). Ein möglicher Bildungspfad ist der akademische, der große Ähnlichkeit mit dem österreichischen Pfad hat; er ist vergleichbar mit dem Besuch der AHS in der Unterstufe, gefolgt von der AHS-Oberstufe mit anschließendem Universitätsbesuch, ein anderer Pfad führt von der holländischen AHS Unterstufe über die berufsorientierte höhere technische Lehranstalt, die mit der HTL oder HAK in Österreich vergleichbar ist, in die Universität oder Fachhochschule.[6].

Holland hat eine Dreiteilung der unteren Sekundarstufe, im Gegensatz zur Zweiteilung in Österreich, in eine der AHS und der Hauptschule ähnelnde allgemeine Ausbildungsform und eine einfache praxisorientierte, die sich ab dem Ende der Pflichtschule ähnlich dem österreichischen System in berufsorientierte mittlere und höhere Schulen einerseits und in einen akademischen Zweig, ähnlich der AHS in Österreich, aufspaltet. Die mittlere berufsorientierte Ausbildung kann über eine Lehre ebenso wie über eine Fachschule erfolgen. Die Berechnungen von Bildungsertragsraten seitens Koning und Odink – Kunnen weisen für einige Bildungspfade sehr hohe Werte aus; die höchsten Ertragsraten hat der Pfad der allgemeinbildenden höheren Schulen, wenn im Anschluss daran eine Universitätsausbildung oder Fachhochschulausbildung gewählt wird, nämlich um 10 bis 12% mehr als ein Pflichtschulabschluss bringt.

Wenn Jugendliche einen weniger anspruchsvollen Bildungspfad wählen, etwa die Hauptschule und im Anschluss daran eine vertikale Weiterbildung (kein laterales Umsteigen), dann liegt die durchschnittliche Bildungsertragsrate zwischen 3 und 5% gegenüber dem Pflichtschulabschluss.

Wenn jemand eine mittlere Fachschule oder eine Lehre absolviert, hat er keinen höheren Ertrag als im Fall des Pflichtschulabschlusses zu erwarten. Da der reale langfristige Zinssatz am Kapitalmarkt in Holland in den achtziger Jahren bei etwa 2% lag, kann man behaupten, dass eine Verlängerung der Ausbildung sinnvoll, d. h. kosteneffizient, war.

[6] Für einen genauen Überblick siehe Kapitel der Niederlande.

*Übersicht 18: Bildungsinvestitionsertragsrate nach Bildungspfad, 1990*

*Einige Ertragsratenberechnungen in den Niederlanden*

| Studie | *de Boer – van Ingen* (1980) | *Odink – van Breemen* (1983) | *Koss-Fiszer* (1989) | *NEI* (1994) | |
|---|---|---|---|---|---|
| Bezugsjahr | 1972 | 1979 | 1985 | 1990 | 1990 |
| Einkommensunterschiede, die nur der Ausbildung zugewiesen werden | Ja* | Nein** | Ja* | Ja* | Nein** |
| | | | Wirtschaftliche Ertragsrate der Ausbildung in % | | |
| Ertrag der höheren Sekundarstufe – höherer Berufsausbildungsweg | 7 bis 9 | 3 bis 4 | 9 | 5 | 2 |
| Ertrag der höheren Sekundarstufe – Universitätsausbildungsweg | 11 bis 13 | 6 bis 7 | 13 | 5 | 3 |
| Berufsausbildung (Unterstufe) gefolgt von mittlerer Berufsausbildung | | | 8 | 7 | 4 |
| Allgemeine Sekundarausbildung (Unterstufe) gefolgt von mittlerer Berufsausbildung | | | 8 | 1 | 0 |

Q: *Koning* (1998), S. 65. – * Basierend auf der Annahme, dass die Einkommensunterschiede der Individuen einzig und allein die Folgen der Bildung sind (100%). – ** Basierend auf der Annahme, dass nur 60% der Einkommensunterschiede der Individuen die Folgen der Bildung sind.

*Groot* (1992) zufolge waren die Ertragsraten der Verlängerung der Ausbildung über die Pflichtschule hinaus zwischen 1965 und 1985 relativ stabil. *Odink – Kunnen* (1998) errechneten eine Verringerung der Ertragsrate der Universitätsausbildung von ursprünglich 12% Mitte der achtziger Jahre auf 8% in den frühen neunziger Jahren – der Wendepunkt war das Jahr 1989. Erträge der Fachhochschulausbildung verringerten sich in derselben Periode von 9% auf 4%.

*Psacharopoulos* (1985) weist nach, dass das keine ungewöhnliche Entwicklung sein muss. In den USA verringerte sich der Ertrag der Universitätsausbildung zwischen 1940 und 1976 von 11% auf 5%[7]. In den achtziger Jahren wurde in den USA der untere Wendepunkt erreicht. Seither stiegen die Ertragsraten der Universitätsausbildung wieder und erreichten 12% im Jahre 1995.

*Hartog* (2000) weist darauf hin, dass zwischen den Qualifikationen, die das Schulsystem hervorbringt und den Qualifikationen, die am Arbeitsmarkt nachgefragt werden, eine Kluft entstehen kann. Zu jedem Zeitpunkt gibt es eine gewisse Diskrepanz (Mismatch) zwischen den qualifikationsspezifischen Anforderungen eines Jobs und den Kenntnissen der Beschäftigten. Auch wenn man annimmt, dass es einen gewissen Spielraum zwischen den in der Schule erlernten und den am Job benötigten Qualifikationsanforderungen gibt, d. h. eine gewisse Substituierbarkeit von Personen gibt, die verschiedene Ausbildungswege absolviert haben, kann es im Laufe der Zeit zu einer zunehmenden Diskrepanz zwischen erlernten und vom Markt nachgefragten Kenntnissen kommen. Die Kenntnisse, die von den Schulen vermittelt werden, verlieren infolge des technischen Fortschritts

[7] Zum Teil war der starke Zustrom von Jugendlichen und Erwachsenen mittleren Alters in die Universitäten in dieser Periode dafür verantwortlich. Um die Arbeitslosigkeit nicht zu stark steigen zu lassen, wurde nach dem 2. Weltkrieg eine massive Bildungsinvestition gestartet, die vor allem den heimgekehrten Soldaten eine kostengünstige Universitätsausbildung ermöglichte.

ihre Relevanz. Demographischer Strukturwandel und die Beschleunigung des technologischen Wandels können zu einem Auseinanderlaufen der vorhandenen und der für die Erhaltung der Wettbewerbsfähigkeit gebrauchten Qualifikationen in einer Gesellschaft führen. In der Folge kann sich ein gewisses Maß der Über- und Unterqualifikation herausbilden. Überqualifizierung besteht, wenn die tatsächlichen Kenntnisse im ausgeübten Job nicht zur Gänze genutzt werden. Bei Unterqualifizierung ist das Gegenteil der Fall, d. h. die Kenntnisse reichen nicht aus, um alle Jobanforderungen abdecken zu können. Die Termini "Über- und Unterqualifikation" (over- und undereducation) sehen im Ausbildungssystem ein Element des wirtschaftlichen Produktionsprozesses; sie haben daher eine enge Produktivitäts- und Effizienzrechnung vor Augen. Der soziale Aspekt und der Konsumcharakter der Bildung bleibt außer Betracht.

Berechnungen von Hartog zufolge sind die Bildungserträge im Falle einer Überqualifikation zwar positiv aber kleiner als bei passender Qualifikation; der Grenzertrag der Unterqualifikation ist negativ, d. h. man muss einen Lohnabschlag gewärtigen, wenn man für den Job nicht ausreichend qualifiziert ist. Der Lohnabschlag ist aber geringer für Unterqualifizierung als für Überqualifizierung.

Es gibt klare Hinweise dafür, dass sich das Ausmaß der Über- und Unterqualifizierung der Arbeitskräfte mit zunehmendem Alter und steigender Arbeitserfahrung verringert. Das ist darauf zurückzuführen, dass Arbeitskräfte, die für ihren Job überqualifiziert sind, häufig den Job wechseln, bis die eigenen Fähigkeiten mit den Anforderungen des Jobs übereinstimmen. Im Fall der Unterqualifizierung hingegen bleibt der Beschäftigte meist im selben Unternehmen, wo er in den Bereichen, für den die Kenntnisse nicht ausreichen und die für den Betrieb wichtig sind, vom Unternehmen ausgebildet wird (lohnmaximierendes Mobilitätsverhalten).

Daher ist zu erwarten, dass die Löhne nur im Falle der Einstiegsgehälter den Ertrag der Schulbildung abbilden. Je weiter man sich von der Eintrittspforte in den Arbeitsmarkt/Betrieb wegbewegt, desto weniger ist der Lohn ein Resultat der schulischen Ausbildung, sondern eine Funktion der Regelmechanismen des Arbeitsmarktes. Phasen der Arbeitslosigkeit erschweren ebenso wie die Beschäftigungsdauer eine eindeutige Aussage über die Ertragsrate der Bildungsinvestition.

Demnach kann ein angebotsseitiger Wandel der Qualifikationsstruktur ebenso wie ein nachfrageseitiger einen steigenden oder sinkenden Trend der Ertragsrate der Aus- und Weiterbildung zur Folge haben. Hierzu ein Zitat von *Hartog* (2000, S. 141): "The returns to education depend on the job, and hence, the earnings difference between individuals with different education is not constant". Daher sollte man bei Berechnungen der finanziellen Ertragsrate der Aus- und Weiterbildung zusätzlich zum durchschnittlichen Ausbildungsniveau der Erwerbsbevölkerung auch die Verteilung auf die verschiedenen Ausbildungsformen berücksichtigen.

*Übersicht 19: Diskontiertes Lebenseinkommen für ausgewählte Ausbildungsformen in Dänemark (1995)*

| | Diskontiertes Lebenseinkommen (in 1.000 KR) | | Index (Hilfsarbeiter = 100) | |
|---|---|---|---|---|
| | Männer | Frauen | Männer | Frauen |
| *Hilfsarbeiter* | | | | |
| Pflichtschule | 3.262 | 2.558 | 100,0 | 100,0 |
| *Berufsausbildung* | | | | |
| Bankangestellter | 4.511 | 3.561 | 138,3 | 139,2 |
| Verkäufer | 3.973 | 2.845 | 121,8 | 111,2 |
| Bürokraft | 4.017 | 3.251 | 123,1 | 127,1 |
| Maurer | 3.588 | | 110,0 | |
| Zimmermann | 3.772 | | 115,6 | |
| Mechaniker | 3.848 | | 118,0 | |
| Schmied | 3.908 | | 119,8 | |
| Kellner | | 2.732 | | 106,8 |
| Elektriker | 3.914 | | 120,0 | |
| Andere | 3.643 | 2.947 | 111,7 | 115,2 |
| *Kurzfristige höhere Ausbildung* | | | | |
| Elektriker | 4.203 | | 128,8 | |
| Andere technische Ausbildung | 3.798 | | 116,4 | |
| Andere | 4.109 | 3.739 | 126,0 | 146,2 |
| *Mittelfristige höhere Ausbildung* | | | | |
| Lehrer | 3.707 | 3.369 | 113,6 | 131,7 |
| Krankenpfleger | | 3.145 | | 122,9 |
| Ingenieur | 4.772 | | 146,3 | |
| Andere | 4.746 | 3.221 | 145,5 | 125,9 |
| *Langfristige höhere Ausbildung* | | | | |
| Zivilingenieur | 5.167 | | 158,4 | |
| Mittelschullehrer | 3.782 | 3.184 | 115,9 | 124,5 |
| Rechtsanwalt | 5.336 | 4.170 | 163,6 | 163,0 |
| Mediziner | 5.506 | | 168,8 | |
| Sozial- und Humanwissenschaftler | 5.524 | | 169,3 | |
| Naturwissenschaftler | 4.500 | 4.105 | 138,0 | 160,5 |
| Andere | 4.252 | 3.538 | 130,3 | 138,3 |

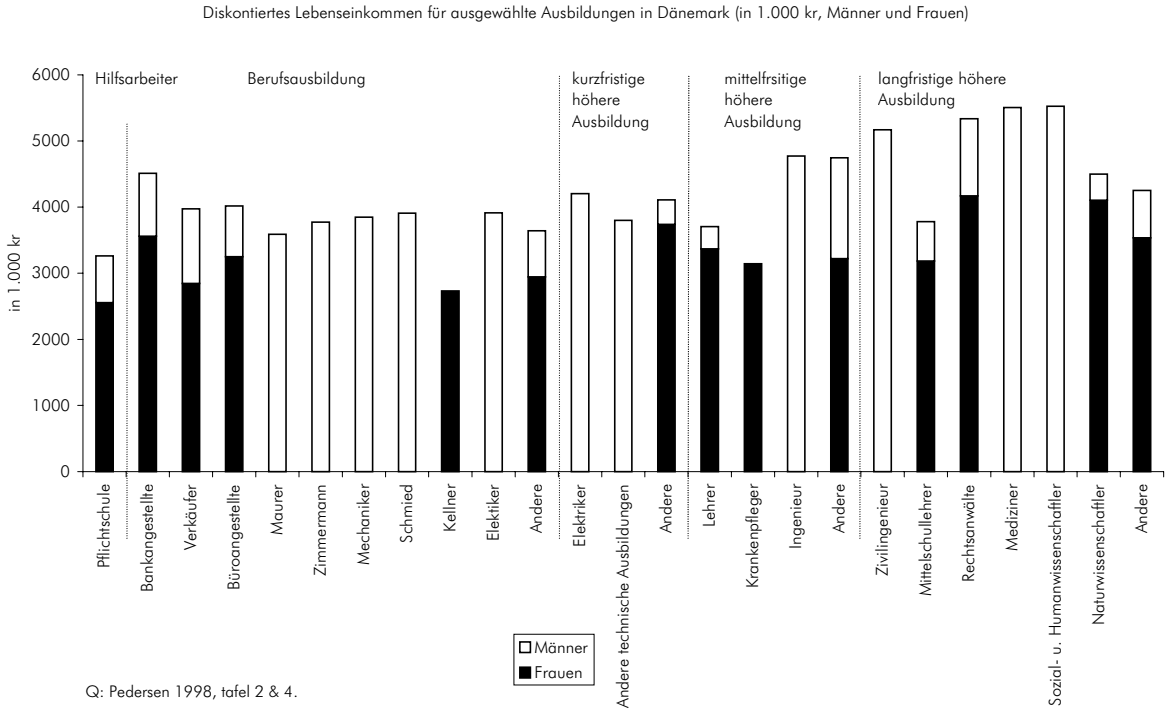
Q: *Pedersen* (1998), tafel 2/4.

Berechnungen der individuellen Ertragsrate der Bildung, auf Basis einer Lebenseinkommensrechnung, seitens des dänischen Finanzministeriums (*Pedersen,* 1998) weisen nach, dass es sich finanziell rentiert, die Ausbildung über die Pflichtschule hinaus zu verlängern. Der positive Ertrag der Bildungsverlängerung resultiert nicht nur aus einem höheren Lohn sondern vor allem auch aus der größeren Wahrscheinlichkeit einer kontinuierlichen Beschäftigung über den Lebenshorizont.

Dass Frauen im Lebenszyklus eine geringere Ertragsrate der Weiterbildung aufweisen als Männer ist vor allem darauf zurückzuführen, dass sie häufiger die Arbeit unterbrechen als Männer. Der Hauptgrund für die Arbeitsunterbrechung ist die Kinderbetreuung (*Gupta – Smith,* 2000). Der negative Effekt, den Kinder auf das Fraueneinkommen haben, verschwindet zwar, wenn die Frauen wieder kontinuierlich arbeiten, aber im Lebenseinkommen kann der Einkommenseinbruch nicht mehr wettgemacht werden.

Frauen, die ein höheres Ausbildungsniveau haben, haben ein höheres Lebenseinkommen als Frauen mit Pflichtschulabschluss. Dies ist vor allem das Resultat von häufigerer Arbeitslosigkeit und anderen Berufsunterbrechungen im Fall unqualifizierter Frauen. Hilfsarbeiter haben nicht nur eine höhere Arbeitslosenquote als besser qualifizierte Arbeitskräfte sondern müssen auch häufiger in Erwerbsunfähigkeits- oder Frühpension gehen. Das ist ein wichtiger Grund für das geringere Lebenseinkommen von Hilfs- und Anlernarbeitern.

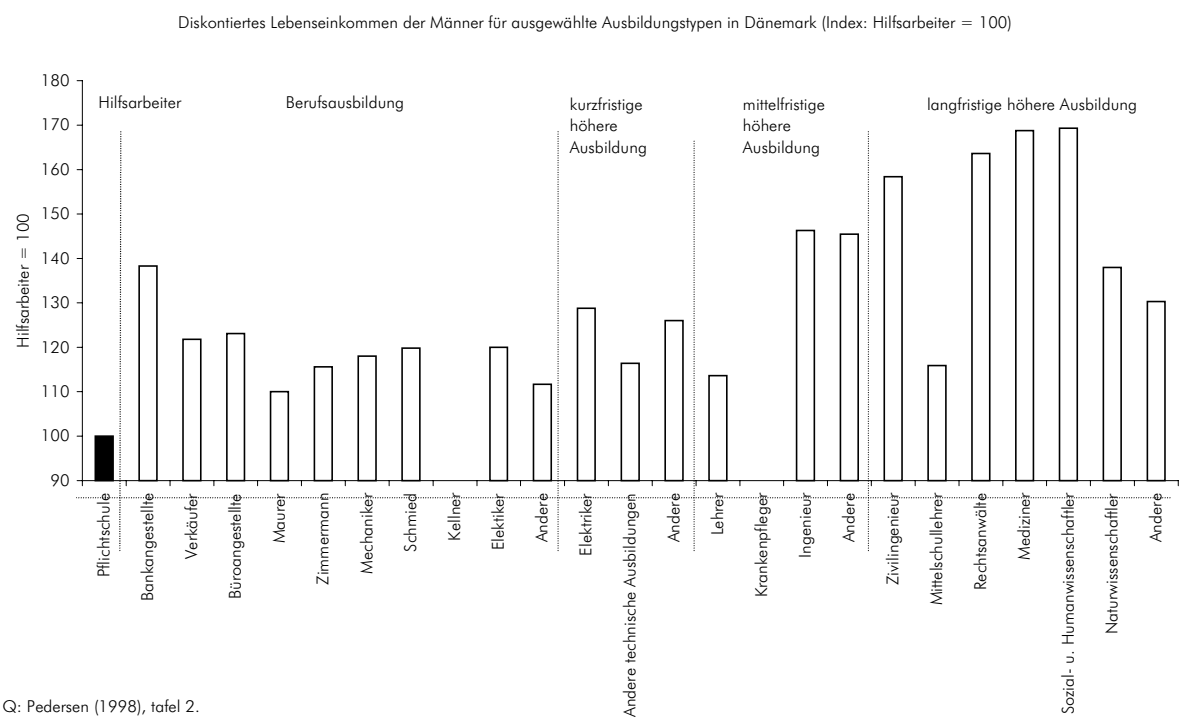
*Abbildung 3: Diskontiertes Lebenseinkommen der Erwachsenen (18-66) nach höchster abgeschlossener Ausbildung (1995)*




Q: Pedersen 1998, tafel 2 & 4.

Die Abbildung 3 verleiht einen klaren Einblick in das Ausmaß des Unterschiedes des Lebenseinkommens von Männern und Frauen in den einzelnen Ausbildungsebenen. Dänemark hat eine deutliche Segmentation der Ausbildung nach Geschlecht und damit auch nach Berufen. Es gibt z. B. kaum Frauen in der Lehrausbildung und kaum Männer in Tourismusberufen. Daher kann für diese Ausbildungsbereiche keine statistisch signifikante Aussage über den finanziellen Ertrag der Ausbildung nach beiden Geschlechtern getroffen werden.

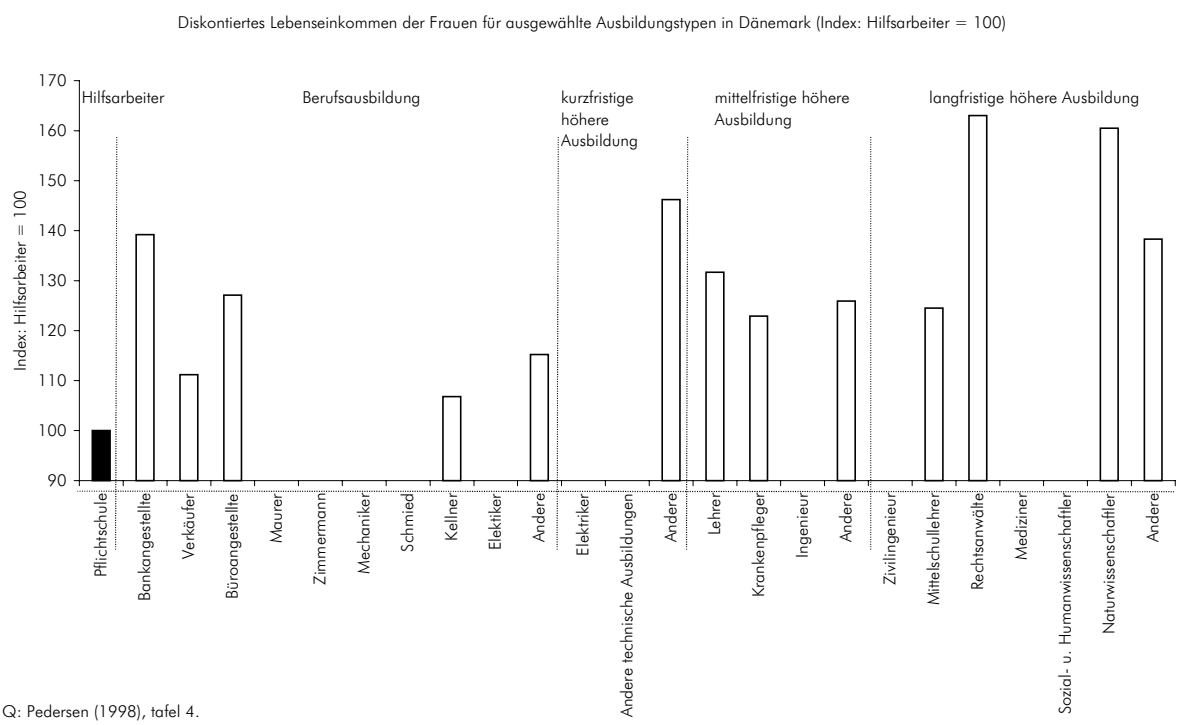
*Abbildung 4: Ertragsrate der höheren Ausbildung relativ zur Pflichtschule (diskontiertes Lebenseinkommen) der Männer (1995)*




Q: Pedersen (1998), tafel 2.

Der Einkommensgewinn, den man mit einer über die Pflichtschule hinausgehenden Ausbildung im Lebenszyklus erzielen kann, ist bei Absolvierung einer langen Universitätsausbildung (Magister und Doktorat) am größten. Das Lebenseinkommen liegt zwischen 60% und 80% über dem eines Hilfsarbeiters und zwar im Fall von Medizin, Rechts-, Wirtschafts- und Managementstudium sowie Ingenieurausbildung; das Lebenseinkommen von Personen mit einer berufsorientierten technischen oder Handelsausbildung (vergleichbar mit HTL oder HAK in Österreich) liegt etwas darunter. Eine Universitätsausbildung in den Humanwissenschaften bringt kein höheres Lebenseinkommen als eine mittlere berufliche Fachausbildung.

*Abbildung 5: Ertragsrate der höheren Ausbildung relativ zur Pflichtschule (diskontiertes Lebenseinkommen) der Frauen (1995)*




Q: Pedersen (1998), tafel 4.

## Beitrag des Bildungssystems zur Arbeitsproduktivität

Von einer Verlängerung der Ausbildung über die Pflichtschule hinaus erwartet man eine Steigerung der gesamtwirtschaftlichen Arbeitsproduktivät. Der statistische Nachweis dieser Annahme ist aber nicht leicht zu erbringen. Es ist schwierig, die Entwicklung der Arbeitsproduktivität über die Zeit zu erklären bzw. das unterschiedliche Produktivitätsniveau zwischen Ländern (*Biffl,* 2001). Unterschiede im BIP je Einwohner – einem Indikator des Lebensstandards eines Landes –, und dem BIP je Arbeitsstunde – einem Indikator der wirtschaftlichen Wettbewerbsfähigkeit –, resultieren aus einem unterschiedlichen sozialökonomischen Entwicklungsniveau einer Volkswirtschaft, aus einer unterschiedlichen Produktionstechnologie und Produktionsstruktur, aus Unterschieden in der Qualifikationsstruktur der Arbeitskräfte sowie aus Unterschieden in:

- den Jahresarbeitsstunden je Erwerbstätigen,
- dem Anteil der Beschäftigten am Arbeitskräfteangebot,
- der Erwerbsquote und
- dem Anteil der Bevölkerung im erwerbsfähigen Alter an der Gesamtbevölkerung.

Aus diesem Grund ist es nicht leicht, die Auswirkungen einer Investition in Aus- und Weiterbildung auf die Produktivitätsentwicklung eines Landes exakt zu quantifizieren. In der Folge soll daher ein

erster Einblick in die unterschiedlichen Produktivitätsniveaus der einzelnen Länder gewährt werden. Zunächst ein Blick auf die internationalen Unterschiede im BIP je Einwohner: das Vereinigte Königreich hatte 1998 mit einem BIP je Einwohner von 21.218 USD (bewertet zu laufenden Preisen und Kaufkraftparitäten) einen etwas geringeren Lebensstandard als Österreich (23.073 USD) und die Niederlande (22.887 USD). Holland und Österreich befinden sich etwa im Mittelfeld einer Rangordnung der OECD-Länder nach dem BIP je Einwohner. Den höchsten Lebensstandard gemessen am BIP je Einwohner hatten, abgesehen von Luxemburg, die USA (30.394 USD, +30% gegenüber dem Vereinigten Königreich), gefolgt von Deutschland (27.569 USD, +23%) und Dänemark (26.297 USD, +19%). Das BIP je Einwohner lag im Vereinigten Königreich um etwa 10% unter dem OECD-Durchschnitt.

Das BIP je Erwerbstätigen ist im Vereinigten Königreich um etwa 3% geringer als in Österreich, gleich hoch wie in Schweden und Kanada, und deutlich geringer als in den USA (–24%). Die internationalen Unterschiede in der Stundenproduktivität dürften nicht sehr hoch sein. Obschon die tatsächlichen Jahresarbeitsstunden je Beschäftigten nur mit großer Ungenauigkeit erfasst werden, dürfte die Stundenproduktivität in Österreich zwischen 6% und 10% hinter den USA herhinken, ziemlich gleich hoch wie in Holland, Dänemark und Japan sein und um etwa 15% über dem EU-Durchschnitt liegen.

Zu beachten ist, dass ein direkter Konnex zwischen dem Einkommen oder dem Lohn eines Individuums und seiner Arbeitsproduktivität von einem konzeptionellen Standpunkt aus nicht hergestellt werden kann. Der Output eines komplexen Arbeitsprozesses ist nämlich das Ergebnis des Zusammenwirkens einer Vielzahl von Inputs. Verschiedene Arbeitsqualifikationen (Arbeitsteilung) werden unterstützt von Finanz- und Realkapital in einer Kombination, die von der Produktionstechnologie abhängt. Der Output ist in der Folge mehr als die Summe der individuellen Inputfaktoren und kann daher auch keinem einzelnen Inputfaktor zugeordnet werden, sondern nur dem Aggregat. Demzufolge macht es nur Sinn, auf der Mikro-Ebene das Produktivitätsniveau von Betrieben zu vergleichen, auf der Meso-Ebene Industriebranchen und die gesamtwirtschaftliche Produktivität auf der Makroebene, wie in Übersicht 20. In dem Zusammenhang ist darauf aufmerksam zu machen, dass sich Produktivitätssteigerungen unter anderem auch in sinkenden Preisen niederschlagen können. Um die Wettbewerbsfähigkeit gegenüber dem Ausland beibehalten zu können, kann es notwendig sein, die Produktivitätssteigerung in der Form von niedrigeren Preisen an den Konsumenten weiterzugeben. Das Ausmaß der Preissenkung wird vom Ausmaß des Wettbewerbs abhängen. Demnach wird ein Teil der Produktivitätssteigerung infolge von einer höheren Aus- und Weiterbildung an das Individuum in der Form von höheren Löhnen weitergegeben, ein Teil wird vom Unternehmen einbehalten und ein Teil wird an den Konsumenten in Form von niedrigeren Preisen weitergegeben.

*Übersicht 20: BIP je Einwohner und Arbeitsproduktivität 1998*

*BIP bewertet zu laufenden Preisen, unter Verwendung von Kaufkraftparitäten, in USD*

| | Output je beschäftigter Person | Output je Einwohner |
|---|---|---|
| Luxemburg | 64.742 | 34.701 |
| USA | 62.214 | 30.394 |
| Deutschland | 55.002 | 27.569 |
| Norwegen | 49.117 | 26.611 |
| Schweiz | 52.426 | 26.297 |
| Dänemark | 48.682 | 26.297 |
| Kanada | 47.112 | 24.106 |
| Japan | 65.053 | 24.103 |
| Belgien | 52.562 | 24.003 |
| Österreich | 48.781 | 23.073 |
| Niederlande | 52.563 | 22.887 |
| Australien | 49.848 | 22.697 |
| Irland | 55.585 | 22.429 |
| Frankreich | 57.440 | 22.089 |
| Italien | 62.187 | 21.999 |
| Finnland | 50.474 | 21.677 |
| Vereinigtes Königreich | 47.186 | 21.218 |
| Schweden | 47.029 | 21.162 |
| Neuseeland | 40.193 | 17.801 |
| Spanien | 50.129 | 16.743 |
| Portugal | 31.475 | 15.242 |
| Griechenland | 38.728 | 14.411 |

Q: *OECD* (2000B), S. 17.

## Gesellschaftliche Ertragsrate der Bildungsinvestition

Die individuelle Ertragsrate der Bildungsexpansion kann sich stark von der gesellschaftlichen unterscheiden. Das aufwendigste Berechnungsverfahren von all den Ländern, die hier untersucht werden, wurde vom Finanzministerium in Dänemark angewendet. *Hoj – Ransby* (1996) berechneten gesellschaftliche Ertragsraten der Bildungsexpansion in einer 3-stufigen Kosten-Nutzen-Analyse:

1. Das Netto-Lebenseinkommen wurde für Personen, die mehr als eine Pflichtschule absolviert hatten, berechnet, d. h. direkte und indirekte Ausbildungskosten (Opportunitätskosten), die über die Pflichtschule hinausgingen, wurden vom Lebenseinkommen abgezogen.

2. Die Kosten, die der Gesellschaft für die Bildung, die über die Pflichtschule hinausgeht, erwachsen, werden berechnet. Dabei war das Taximeter-Finanzierungssystem eine wichtige Kalkulationshilfe.

3. Der interne Zinssatz der Ausbildungsverlängerung wurde berechnet. Diese Rate gibt die Höhe des Nutzens an, der sich aus der Verlängerung der Ausbildung eines Jugendlichen mit durchschnittlichen Fähigkeiten um 1 Jahr ergibt.

Übersicht 21 zeigt, dass das durchschnittliche Einkommen mit zunehmender Ausbildungsdauer steigt – eine Ausnahme ist die Ausbildung von Kindergärtnerinnen. Die Einkommensunterschiede

zwischen Berufen, die eine Universitätsausbildung erfordern, sind höher als zwischen verschiedenen mittleren Fachqualifikationen.

Auch die Ausbildungskosten steigen mit der Ausbildungsdauer. Die Zusammensetzung der Kosten ist je nach Ausbildungsgebiet unterschiedlich. In den Humanwissenschaften (Mittelschullehrer) spielt das Stipendium eine hohe Rolle, da das Studium häufig unterbrochen wird und da es hohe drop-out-Raten gibt.

*Übersicht 21: Wachstum des Lebenseinkommens und Kosten pro Schüler zu Preisen 1995; gesamtwirtschaftlicher Nutzen der Bildungsexpansion*

| | Ausbildungsjahre nach der Pflichtschule | Anstieg im Lebenseinkommen (in Millionen DKR) | Direkte und indirekte Kosten pro Schüler (in 1.000 DKR) | Wirtschaftliche Ertragsrate in % |
|---|---|---|---|---|
| Hilfsarbeiter | 0 | 0,0 | 0,0 | 0 |
| *Berufsausbildung* | | | | |
| Verkäufer | 3 | 0,9 | 52,3 | 8,9 |
| Bürokraft | 3 | 1,3 | 52,3 | 11,4 |
| Schmied | 4 | 1,3 | 146,4 | 8,6 |
| Mechaniker | 4 | 1,0 | 158,5 | 6,5 |
| Ingenieur | 4 | 2,0 | 129,2 | 14,5 |
| Maurer | 4 | 0,9 | 125,2 | 6,5 |
| Elektriker | 4 | 1,0 | 121,5 | 7,5 |
| Bauarbeiter | 4 | 0,7 | 90,4 | 5,5 |
| *Kurzfristige höhere Ausbildung* | | | | |
| Kindergärtner | 4,5 | – 0,4 | 276,4 | – 2,5 |
| Techniker | 4,5 | 0,9 | 295,1 | 2,2 |
| *Bachelor's degree (~Magister)* | | | | |
| Lehrer | 7 | 2,0 | 427,3 | 4,6 |
| Wirtschaftsfachmann | 6 | 7,8 | 378,7 | 14,0 |
| Ingenieur | 6 | 5,2 | 495,5 | 9,3 |
| *Master's degree* | | | | |
| Mittelschullehrer | 9 | 3,3 | 1026,9 | 3,9 |
| Ökonom | 8 | 11,6 | 417,2 | 15,3 |
| Rechtsanwalt | 8 | 7,6 | 417,2 | 11,4 |
| Ingenieur | 8 | 7,7 | 678,1 | 9,5 |
| Mediziner | 9 | 9,7 | 900,7 | 10,5 |

Q: *Hoj – Ransby* (1996), S. 14.

Eine Art, wie man den gesellschaftlichen Nutzen einer Investition in eine höhere Ausbildung beurteilen kann, ist der Vergleich der Ertragsrate der Ausbildungsform mit einer alternativen Realkapitalinvestition. Hoj und Ransby zogen den Realzins heran und zogen davon die Steigerung der Reallöhne ab. Sie kamen zu folgender Schlussfolgerung: "If the calculated (social) internal rate of return is larger than 5% for a given programme of education, it is beneficial to society to invest in that type of education" (S. 15).

Wenn man diese Maßstäbe anlegt, war jede Form der Verlängerung der Ausbildung über die Pflichtschule hinaus für die Gesellschaft von Vorteil, mit Ausnahme der Ausbildung von Kindergärtnerinnen und Mittelschullehrern.

Der gesellschaftliche Nutzen einer berufsorientierten Ausbildung ist im Durchschnitt ebenso hoch wie der einer langen Universitätsausbildung. Das ist darauf zurückzuführen, dass die berufliche mittlere Ausbildung relativ billig ist. Zu bedenken ist in diesem Zusammenhang, dass Betriebe einen Teil der berufsorientierten Ausbildungskosten über die Lehrausbildung tragen. Das wurde in den dänischen Berechnungen nicht berücksichtigt.

## 6. Das Konzept lebenslangen Lernens

In den OECD-Ländern wird der Investition in Humankapital über Systeme des lebenslangen Lernens zunehmende Bedeutung beigemessen. Die OECD-Arbeitsminister sehen in lebenslangem Lernen eine wesentliche Determinante für ein nachhaltiges Wirtschaftswachstum in einer Gesellschaft, die auf Wissen basiert. Eine Anpassung der Kenntnisse und Qualifikationen der Gesellschaft an den laufenden Bedarf kann nur zum Teil über die Anpassung der Curricula der Erstausbildung erfolgen. Laufende Aus- und Weiterbildung ist nötig, um die Kenntnisse der Erwachsenen an den Wandel der Nachfrage anzupassen und einmal erworbenes Wissen auszubauen bzw. Unqualifizierten eine zweite Bildungschance zu geben.

Das Konzept des lebenslangen Lernens ist nicht neu. Eine OECD-Publikation aus dem Jahre 1973 hat sich schon mit diesem Thema befasst "to provide better opportunity for individual development, greater education and social equality, and better interplay between the education and other social sectors, including a better contribution to the potential for necessary economic growth (*OECD,* 1973, S. 48). Aber die Rahmenbedingungen innerhalb derer in OECD-Ländern heute lebenslanges Lernen diskutiert wird, sind neu (*Hake et al.,* 1999, *Baaijens et al.,* 1998). Lebenslanges Lernen ist ein Element der EU-Beschäftigungs- und Wirtschaftspolitik, und ein Mittel, um die sozioökonomischen Strukturen der Mitgliedsländer für die Anforderungen einer globalisierten Wirtschaft und einer Informationsgesellschaft vorzubereiten. Um gezielte Maßnahmen setzen zu können, ist es in einem ersten Schritt notwendig festzustellen, wo wir im Bereich des lebenslangen Lernens stehen. Internationale Erhebungen wie der internationale Test der Schreib- und Lesefähigkeit der Erwachsenen (IALS), enthält auch Informationen über das Ausmaß, die Häufigkeit, Dauer und Art der laufender Weiterbildung. Die Niederlande haben ebenso wie das Vereinigte Koenigreich und Australien an dieser internationalen Erhebung, im Gegensatz zu Österreich, teilgenommen (*OECD,* 1998A, S. 204-220).

Dieser Erhebung zufolge haben 36% aller 25- bis 64-jährigen in Holland in den 12 Monaten vor der Erhebung an einer Weiterbildungsmaßnahme teilgenommen – ebensoviel wie in Australien. Der Weiterbildungsanteil war etwas geringer als in der Schweiz, den USA und dem Vereinigten Königreich. Letztere hatten Weiterbildungsquoten zwischen 42% und 45% der 25- bis 64-jährigen. Das Land mit der höchsten Weiterbildungsquote Erwachsener war Schweden mit 54%. Der Großteil der Weiterbildung hat einen Bezug zur Erwerbsarbeit. Die Weiterbildungsquote hängt vom Alter ab – sie sinkt mit steigendem Alter. Das geschlechtspezifische Muster ist nicht eindeutig. In

einigen Ländern ist die Weiterbildungsquote der Männer höher, z. B. in den Niederlanden, dem Vereinigten Königreich, der Schweiz und Australien, in anderen die der Frauen, so in Schweden.

Wenn man beschäftigt ist, kommt man eher in den Genuss einer Weiterbildungsmaßnahme, als wenn man arbeitslos ist. Das Ausmaß der Erstausbildung spielt eine wichtige Rolle für die Weiterbildungschancen. Wenn jemand eine Ausbildungsform der oberen Sekundarstufe abgeschlossen hat, erhält er eher eine berufliche Weiterbildung als wenn er/sie nur einen Pflichtschulabschluss hat. Je höher der Erstausbildungsgrad desto höher die Chancen für lebenslanges berufsorientiertes Lernen. Das ist ein Grund dafür, dass die Ertragsrate der Bildungsinvestitionen von Universitätsabsolventen höher ist als die von Absolventen höherer und mittlerer Schulen.

*Übersicht 22: Weiterbildungsquote der 25- bis 64-jährigen nach Alter und Geschlecht 1994-95*

| | | Alter 25-34 | Alter 35-44 | Alter 45-54 | Alter 55-64 | Alle |
|---|---|---|---|---|---|---|
| Australien | M + F | 42 | 40 | 32 | 20 | 36 |
| | Männer | 46 | 40 | 33 | 20 | 37 |
| | Frauen | 38 | 41 | 32 | 20 | 34 |
| Niederlande | M + F | 46 | 41 | 32 | 16 | 36 |
| | Männer | 51 | 42 | 36 | 13 | 38 |
| | Frauen | 42 | 40 | 29 | 20 | 34 |
| Schweden | M + F | 56 | 61 | 58 | 38 | 54 |
| | Männer | 57 | 58 | 54 | 37 | 53 |
| | Frauen | 54 | 64 | 62 | 40 | 56 |
| Schweiz | M + F | 52 | 45 | 39 | 25 | 42 |
| | Männer | 55 | 43 | 39 | 29 | 44 |
| | Frauen | 47 | 46 | 40 | 22 | 40 |
| Vereinigtes Königreich | M + F | 54 | 54 | 42 | 23 | 45 |
| | Männer | 57 | 52 | 44 | 23 | 46 |
| | Frauen | 51 | 55 | 40 | 24 | 44 |
| USA | M + F | 46 | 46 | 44 | 28 | 42 |
| | Männer | 45 | 49 | 45 | 23 | 42 |
| | Frauen | 46 | 44 | 43 | 32 | 42 |

Q: *OECD* (1998), S. 214.

Leider haben Österreich und Dänemark nicht an der internationalen Erhebung der Lese- und Schreibkenntnisse und der Weiterbildung der Erwachsenen im Jahre 1995 teilgenommen (*OECD,* 1998A, S. 204-220), daher gibt es keine international vergleichbaren Informationen über das Ausmaß der Weiterbildung der Erwachsenen für Österreich. Dänemark hat schon zu einem früheren Zeitpunkt (1991) an einer ähnlichen Erhebung unter OECD-Ländern teilgenommen (*OECD,* 1995). Damals lag Dänemark punkto Weiterbildungsmaßnahmen der Erwachsenen etwas über dem Vereinigten Königreich. Es galt auch hier, dass die Weiterbildungsquote mit steigendem Alter sinkt, dass sie mit zunehmendem Erstausbildungsgrad steigt, und dass sie für Beschäftigte höher ist als für Arbeitslose.

Dänemark hat für die Aus- und Weiterbildung der Erwachsenen seit den achtziger Jahren zunehmende budgetäre Ressourcen zur Verfügung gestellt (*OECD,* 1997, S. 103-122). Aus- und Weiterbildung wird von der Arbeitsmarktverwaltung (AMU) organisiert; die Aus- und Weiterbildung der Arbeitskräfte (Beschäftigte oder Arbeitslose) erfolgt in Erwachsenenbildungszentren (VUC) und in

Volkshochschulen. Wenn man die privaten und öffentlichen Ausgaben für berufsorientierte Aus- und Weiterbildung zusammenrechnet, zählt Dänemark zu den OECD-Ländern, die am meisten für Weiterbildung ausgeben, nämlich 2,1% des BIP im Jahre 1995. Nur 1% der Ausgaben für Weiterbildung wurden von den Privatpersonen selbst bezahlt, 29% der Kosten übernahmen die Betriebe, den Rest der Staat. Die Ausgaben des Staates kamen zu 50% aus dem allgemeinen Steuertopf, die zweiten 50% aus Abgaben für den Zweck der Weiterbildung.

Der Bildungsurlaub (bis zu einem Jahr) ist der häufigste Verwendungszweck der Erwachsenenbildungsausgaben des Staates. Das Ziel der Erwachsenenbildung ist eine Anhebung der beruflichen Kenntnisse der Erwerbsbevölkerung; wenn ein Erwachsener eine höhere Ausbildung anstrebt (mittlere und lange Universitätsausbildung), muss er/sie einen Eigenbeitrag leisten. Der Beweggrund für die staatliche Finanzierung der Erwachsenenbildung ist derselbe wie für die Erstausbildung, nämlich die Verbesserung der Qualifikationen der Arbeitskräfte, um ein nachhaltiges Wirtschaftswachstum und Produktivitätssteigerungen sicherzustellen. Ein weiteres, mindestens ebenso wichtiges, Ziel ist es, die Marginalisierung gewisser Beschäftigtengruppen zu bekämpfen und die regionale und berufliche Mobilität und damit die Flexibilität des Arbeitsmarktes zu erhöhen.

In den neunziger Jahren hat sich die Erkenntnis durchgesetzt, dass Weiterbildungsmaßnahmen der Erwachsenen, infolge der Überalterung zunehmend an Bedeutung gewinnen müssen, um die Diskrepanz zwischen den vorhandenen Kenntnissen und den nachgefragten nicht zu groß werden zu lassen. Die Reform der Erwachsenenbildung mit dem Ziel der institutionellen Verankerung lebenslangen Lernens ist ein integraler Bestandteil der Arbeitsmarktreform Dänemarks, die 1996 in Angriff genommen wurde.

Eine jüngere Erhebung der Qualifikationen der Erwachsenen in England (*Hillage et al,* 2000) hat ergeben, dass es nicht nur Defizite an gewissen Schlüsselqualifikationen gibt, sondern dass einer von fünf Erwachsenen sehr geringe Lese- und Schreibkenntnisse hat und dass fast die Hälfte aller Erwachsenen schlecht im Rechnen sind. Bildungsinstitutionen der Gemeinden (local education authorities), die ein integraler Bestandteil der öffentlichen Verwaltung sind, sind für die Erwachsenenbildung vor Ort verantwortlich. Im Jahre 1998 nahmen mehr als 1 Million Menschen an Bildungsprogrammen der Gemeinden teil. Der jüngst gegründete Beirat für Lernen und Qualifikation (Learning and Skills Council) ist für die Erforschung des Ausmaßes und der Art der Qualifikationsengpässe sowie für die Planung ihrer Bekämpfung zuständig. Er ist auch für die Finanzierung der Aus- und Weiterbildung der Jugendlichen und Erwachsenen in den Bildungsinstitutionen der Gemeinden verantwortlich. Traditionellerweise haben sich Arbeitnehmervertretungen, ähnlich wie in Österreich das BFI, um die Weiterbildung der Arbeitskräfte bemüht. Dies gilt auch weiterhin. Es gibt also keine Knappheit an Bildungsangeboten für Erwachsene in England – das Problem ist viel eher, lernferne Bevölkerungsschichten von der Notwendigkeit der Weiterbildung zu überzeugen. Die Barrieren einer Weiterbildung sind nicht nur Geldmangel, sondern vor allem auch Zeitmangel, keine positive Erwartungshaltung in Bezug auf den finanziellen Ertrag einer Weiterbildungsmaß-

nahme und ein geringes Selbstvertrauen bezüglich der Lernfähigkeit. Um dem entgegenzuwirken, hat England sich vorgenommen, bis zum Jahr 2002 die Bildungsbeteiligung von Erwachsenen mit dem Zweck der Vermittlung gewisser Grundkenntnisse, zu verdoppeln.

Im Zusammenhang mit der Bildungsoffensive Englands in den neunziger Jahren wurde eine neue Institution geschaffen, nämlich die "University for Industry", d. h. die Universität für die Wirtschaft. Sie agiert wie ein one-stop-shop Netzwerk, das eine Brücke zwischen den Aus- und Weiterbildungsmöglichkeiten auf der einen Seite und den Bedürfnissen der Lernwilligen auf der anderen Seite schlägt. Die UfI kann sowohl über elektronische Medien als auch an vielen Stellen vor Ort persönlich kontaktiert werden. Eine massive Vermarktungscampagne soll die Nachfrage nach Weiterbildung stimulieren. Die sofortigen Qualifizierungsschwerpunkte liegen in der Vermittlung von Grundkenntnissen einerseits und Fachqualifikationen, insbesondere im Bereich der Informations- und Kommunikationstechnologie, dem Management von Klein- und Mittelbetrieben und dem Facharbeitermangel in gewissen Wirtschaftszweigen andererseits.

Zusätzlich wurde eine Nationale Qualifizierungssteuerungsgruppe (National Skills Task Force) ins Leben gerufen, die den zukünftigen Qualifizierungsbedarf erforschen soll. Die Forschungsergebnisse sollen an die UfI und andere Bildungsinstitutionen weitergeleitet werden, um zu verhindern, dass es zu vermehrten Engpässen in gewissen Qualifikationen kommt.

Auch in Australien wurden in den neunziger Jahren die Weichen für eine bildungspolitische Neuorientierung in Richtung einer Gesellschaft, die lebenslanges Lernen zu ihrem Motto macht, gestellt. Im Jahre 1992 wurde eine intergouvernmentale Weiterbildungsanstalt gegründet, die Australian National Training Authority. Sie hat zum Ziel, mit Hilfe der Wirtschaft und der Bildungs- und Arbeitsmarktforschung Qualifikationsengpässe aufzuspüren und Curricula zu entwickeln, die von den einzelnen Bildungsinstitutionen angeboten werden können. Sie ist auch eine Akkreditierungsinstitution, d. h. sie stellt sicher, dass gewisse standardisierte Ausbildungsinhalte modular angeboten, gelernt und in einem Test abgefragt werden können.

Ein Faktor ist für die Entwicklung und den Erfolg eines Systems lebenslangen Lernens von besonderer Bedeutung: die Weiterbildung muss auf gewissen Schlüsselqualifikationen, Grundkenntnissen in Lesen, Schreiben und Rechnen, aufbauen. Des weiteren ist die Fähigkeit zur Lösung von Problemen zu fördern, d. h. danach zu trachten, dass gelerntes Wissen praktisch umgesetzt werden kann; soziale Kompetenz und Kommunikationsfähigkeit sind weitere Schlüsselqualifikationen, die man für lebenslanges Lernen braucht, ebenso die Motivationsfähigkeit (Eigen- und Fremdmotivation).

# 7. Zusammengefasste Schlussfolgerungen

Die internationalen Studien lassen den Schluss zu, dass es zwar nicht leicht ist, den gesellschaftlichen Nutzen der Investitionen in Aus- und Weiterbildung exakt zu quantifizieren, dass er aber positiv ist und sich in einer höheren Produktivität und einem höheren Lohn niederschlägt. Es ist auch klar geworden, dass ein optimaler Ertrag nur dann erzielt wird, wenn die Investition ins Humankapital vom Management genutzt werden kann, indem es die passende Technologie und Arbeitsorganisation dafür auswählt.

Des weiteren ist hervorzuheben, dass eine höhere Ausbildung nicht notwendigerweise mit steigender Beschäftigung verbunden ist. Die Bandbreite der Kenntnisse, die von den Bildungsinstitutionen vermittelt wird, muss sich an den Strukturen der Nachfrage und ihrer Entwicklung orientieren. Ein wesentlicher Faktor für eine erfolgreiche Bildungspolitik ist ihre Ergänzung um eine Wirtschaftspolitik, die eine ausreichende Nachfrage nach Arbeitskräften sicherstellt.

Diese Überlegungen nehmen Bezug auf das wirtschaftspolitische Ziel eines nachhaltigen Wirtschaftswachstums, das Vollbeschäftigung sicherstellt und ausreichend Mittel freisetzt, die verhindern, dass bestimmte Personengruppen infolge ihres geringen Qualifikationsgrades vom Arbeitsmarkt marginalisiert und der Gesellschaft ausgegrenzt werden. Es muss aber auch angemerkt werden, dass Ausbildung mehr ist als nur ein Faktor, der sicherstellt, dass man arbeiten und Geld verdienen kann. Bildung ist eine Grundvoraussetzung für eine zivilisierte, stabile und humane Gesellschaft. Sie stellt nämlich sicher, dass die intellektuellen, ästhetischen und spirituellen Fähigkeiten des Einzelnen und der Gesellschaft entfaltet werden können.

Obschon der Schwerpunkt der vorliegenden Studie auf der berufsorientierten Ausbildung liegt, hat der internationale Vergleich gezeigt, dass die allgemeinbildenden Schulen ein wichtiges Element in der Bildungslandschaft sind, das in der "Learning Society" an Bedeutung gewinnen wird.

Der internationale Vergleich hat des Weiteren gezeigt, dass es keinen Zweifel daran gibt, dass sich die Resultate des Bildungssystems, gemessen an gewissen Indikatoren, seit den achtziger Jahren verbessert haben. Es erhöhten sich nicht nur die Besuchsquoten und Verbleibsraten der Schüler in der oberen Sekundarstufe, sondern auch die in der postsekundären und tertiären Ausbildung. Der Eintritt in den Arbeitsmarkt wurde infolge der Verlängerung der Ausbildung zunehmend hinausgeschoben. Es gibt aber noch immer gewisse Probleme, die sich verschärfen können, wenn sie nicht rechtzeitig bekämpft werden, und zwar in der Gestalt steigender Arbeitslosigkeit und einer Verlangsamung des Wirtschaftswachstums. Eines der wesentlichen Probleme, das sich vor allem im Vereinigten Königreich und in Australien stellt, ist die instabile Beschäftigung und das geringe Erwerbseinkommen eines nicht unbeträchtlichen Anteils der Jugendlichen. Dieser Gruppe von Jugendlichen ist gemeinsam, dass sie ein sehr geringes Ausbildungsniveau haben, meist keine obere Sekundarausbildung abgeschlossen haben und auch später keinen zweiten Versuch der

Höherqualifizierung unternommen haben. Ihre Lese-, Schreib- und Rechenkenntnisse sind gering, was ein Hauptgrund für ihre geringen Beschäftigungschancen ist. Viele von ihnen kommen aus ärmlichen und zerrütteten Familienverhältnissen und/oder haben andere sozialökonomischen Handicaps.

Die Bildungspolitik muss daher bestrebt sein, einerseits einer größeren Zahl von Jugendlichen eine über die Pflichtschule hinausgehende Ausbildung angedeihen zu lassen, andererseits den drop-outs eine zweite Bildungschance zu geben, damit sie als Erwachsene nicht Gefahr laufen, völlig ausgegrenzt zu werden. Die wirtschaftlichen Kosten der Eingliederung dieser Problemgruppe sind meist höher als der wirtschaftliche Nutzen. Aber eine zivilisierte Gesellschaft muss auch den gesellschaftlichen Kosten und Nutzen Rechnung tragen. In diesem Fall ergibt sich aus dem zusätzlichen Mitteleinsatz nicht nur ein Gewinn für das Individuum sondern auch für die Gesellschaft.

Sowohl im Vereinigten Königreich als auch in Australien ergaben sich Arbeitskräfteknappheiten in den Bereichen, die das Bildungssystem vernachlässigt hat, nämlich in der mittleren berufsorientierten Ausbildung. Die jüngere Bildungspolitik dieser Länder hat aber dieses Problem aufgegriffen und die Rahmenbedingungen für berufsorientierte Ausbildung verändert, sodass schon jetzt ein signifikanter Aufholprozess im Bereich der mittleren berufsorientierten Ausbildung zu beobachten ist.

Im Fall der Niederlande hat sich zwar die Wirtschaft in den neunziger Jahren merklich erholt, das Bildungssystem steht aber vor der Herausforderung, den hohen Anteil unqualifizierter Arbeitskräfte mit Qualifikationen auszustatten, die ihre Beschäftigungs- und Einkommenschancen verbessern.

Die dänische Bildungspolitik ist bestrebt, die individuellen und gesellschaftlichen Ertragsraten der Investition in höhere Bildung anzuheben. Daher wurden die Bildungsbudgets, im Gegensatz zu anderen Politikbereichen, im Gefolge der Budgetkonsolidierung nicht beschnitten. 1997 war Dänemark hinter Schweden das Land, das am meisten Geld, gemessen an Ausgaben in % des BIP, für die Bildung ausgegeben hat.

In den neunziger Jahren hat Dänemark umfassende Reformen im Bildungssystem und dessen Finanzierung vorgenommen, die das ganze System, das ursprünglich dem Österreichs sehr ähnlich war, dem angelsächsischen nähergebracht hat.

Die wirtschaftlichen Erfolge Dänemarks in den neunziger Jahren, insbesondere das starke Wachstum der Arbeitsproduktivität und der Rückgang der Arbeitslosigkeit, dürfen einen nicht zur Schlussfolgerung verleiten, dass das einzig und allein das Resultat der Reform des Bildungssystems ist. Die vollen Auswirkungen derartiger tiefgreifender Reformen werden meist erst nach einiger Zeit sichtbar. Die Bildungsreform darf auch nicht losgelöst von den anderen wirtschafts- und arbeitsmarktpolitischen Änderungen gesehen werden. Obendrein ist eine kleine offene Volkswirtschaft wie die Dänemarks stark von den wirtschaftlichen Entwicklungen am Weltmarkt, vor allem aber denen der EU, abhängig.

Nichtsdestoweniger können die Ergebnisse der Kosten-Nutzenanalysen den Bildungsausgaben einen hohen positiven Beitrag zum Wirtschafts- und Produktivitätswachstum bescheinigen sowie einen Beitrag zur sozialen Wohlfahrt. Das gilt insbesondere für Dänemark, einem Land mit hohen sozialpolitischen Standards, die sich einerseits in einem hohen Mindestlohn und andererseits einem umfassenden Wohlfahrtsystem niederschlagen. Sie stellen aber eine besondere Herausforderung für die Bildungspolitik dar, da das Bildungsniveau und die berufsorientierten Kenntnisse vor allem am unteren Ende der Bildungsskala laufend angehoben werden müssen, um die Arbeitsproduktivität mit dem Mindestlohn Schritt halten zu lassen und um die internationale Wettbewerbsfähigkeit sicherzustellen.

Demnach sind alle vier Länder, die hier untersucht wurden, mit demselben Problem konfrontiert, nämlich in allen Ausbildungsebenen der Erstausbildung die Bildungsinhalte an den Wandel der Anforderungen des Marktes anzupassen, um den Jugendlichen den Eintritt in den Arbeitsmarkt zu erleichtern. Des weiteren müssen Vorkehrungen für die laufende Weiterbildung der Arbeitskräfte getroffen werden. Die OECD (1999A) hat diese Herausforderung folgenderweise skizziert. Das Bildungssystem muss bestrebt sein:

- Den Anteil der Jugendlichen zu erhöhen, der eine Ausbildungsform der oberen Sekundarstufe abgeschlossen hat, die entweder eine anerkannte berufliche Fachausbildung vermittelt oder den Übergang in die Tertiärausbildung oder beides.
- Ein hohes Qualifikationsniveau der Jugendlichen am Ende der Übergangsphase sicherzustellen.
- Den Anteil der Teenager, die weder einer Weiterbildungsmaßnahme noch einer Erwerbsarbeit nachgehen, zu senken.
- Die Beschäftigungschance der jungen Erwachsenen nach Abschluss der Ausbildung anzuheben.
- Die Dauer und die Häufigkeit der Jugendarbeitslosigkeit zu verringern.
- Eine durchgehende Beschäftigung nach Abschluss der oberen Sekundarstufe sicherzustellen.
- Eine ausgeglichene Verteilung der Ausbildungsstruktur nach Geschlecht, Regionen und nach sozialem Hintergrund der Familie sicherzustellen.

Jedes Land muss, aufbauend auf die eigenen historischen Entwicklungspfade der sozialen und wirtschaftlichen Organisation, das Bildungssystem weiterentwickeln, um den Anforderungen einer globalisierten Wirtschaft und Gesellschaft, die die von den modernen Informations- und Kommunikationstechnologien getragen wird, zu entsprechen. Kosten-Nutzen-Analysen des Bildungssystems und seiner Elemente können dabei wichtige Anhaltspunkte für eine Neuorientierung des Systems liefern.

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# RESUME: AUSTRALIA, DENMARK, THE NETHERLANDS AND UNITED KINGDOM

GUDRUN BIFFL

*Comparative education can help us understand better our past; locate ourselves more exactly in the present; and discern a little more clearly what our education future may be.*

H.J. Noah (1983), The Use and Abuse of Comparative Education, Inaugural Lecture as Gardner, Cowles Professor of Economics of Education, November 1, 1983, Columbia University, N.Y.

## 1. Introduction

To a greater or lesser extent, the economic background of all the countries studied is one of recession and inflation in the second half of the 1970s and in the 1980s, followed by recovery and growth, the Netherlands faring the worst (see Graph 1) but making a spectacular recovery in the 1990s. The recovery was in general connected with institutional reforms, which were introduced to adapt the functional mechanisms of the economies to the requirements of globalised markets. The mix of causal factors for the economic weaknesses differed in the various countries and so did the reforms undertaken. The education and training systems were universally included in the reform process. The technological changes in the context of globalised competition, have given a considerable boost to vocational education and training, this being recognised as an area of high priority by governments and industry. Investment in education and training is an accretion of human capital. Like physical capital, it is a significant element in the engine of economic growth.

In the U.K., there is a perceived shortage of skills, particularly intermediate vocational ones, in addition to important skill gaps in certain localities and sectors, especially in IT, engineering and construction. A Skills Task Force was appointed in 1998 to review skills shortages and to advise how education and training can assist to alleviate such shortages.

Much the same story applies to Australia where a new body, the Australian National Training Authority (ANTA) was established to take a national approach to vocational education and training to fill the gap in vocational skills.

In Denmark, on the other hand, with its traditional commitment to vocational education and the apprenticeship system, decentralisation of educational planning and the concomitant re-organisation of funding have been the focus of reforms of vocational education in the 1990s

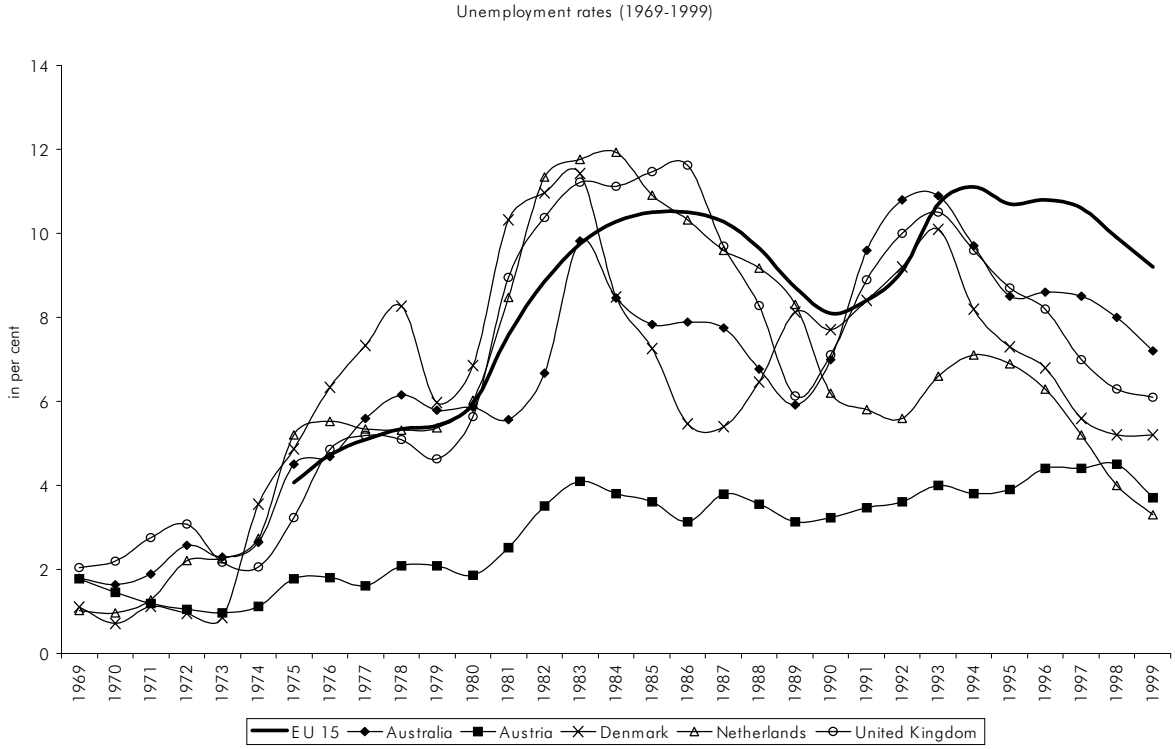
(*Kjaersgaard,* 1994, *Wittrup,* 2000). The objective was the combination of a system of incentives and more decentralisation of decision making and operation in order to

- relate vocational and higher education to the market,
- induce educational institutions to become more results oriented and consumer focused,
- introduce incentives to economise on resources.

In the Netherlands, the main policy changes to bring about economic recovery and lower inflation, have been in the application of fiscal, welfare and labour market measures. The changes in education and training policy have been few and minor, reliance being placed on the existing system, with its strong commitment to vocational education as in the case of Denmark, to provide the necessary support for the other policy changes noted.

In all four countries, the shift in the structure of industry from manufacturing to service industries, has had an important impact on the nature of the demand for labour, with consequential effects on older workers but also on those entering the labour market. Young people who, by their education and training or lack of education and training, have not adapted sufficiently to the change in demand, have had difficulty finding work or are relegated to areas of insecure, low skilled and low paid jobs.

*Graph 1: Unemployment development in the countries under comparison*



The level of educational attainment, the length of formal schooling and training, and the level of literacy have generally been regarded as proxy measures of human capital. Although educational attainment and the degree of literacy may be expected to go together, as it appears to do in the case of Australia, this is not invariably so. Austria and Denmark have not participated in the international literacy survey; but of the OECD countries covered in the measure of literacy, Australia is in about the middle range, with Sweden topping the list.

*Table 1: Percentage of the population that has attained a specific level of education, by age and gender 1998*

| | | At least upper secondary education[1] | | | | | At least tertiary-type A[2] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 25-64 | 25-34 | 35-44 | 45-54 | 55-64 | 25-64 | 25-34 | 35-44 | 45-54 | 55-64 |
| Australia | Men | 63 | 69 | 66 | 61 | 54 | 17 | 17 | 19 | 17 | 11 |
| | Women | 49 | 60 | 50 | 43 | 35 | 17 | 21 | 18 | 14 | 9 |
| Austria[3] | Men | 80 | 87 | 84 | 76 | 68 | 8 | 8 | 9 | 8 | 7 |
| | Women | 66 | 80 | 71 | 60 | 46 | 5 | 6 | 6 | 3 | 2 |
| Denmark | Men | 81 | 85 | 80 | 83 | 73 | 6 | 8 | 6 | 7 | 5 |
| | Women | 76 | 86 | 79 | 72 | 60 | 4 | 6 | 5 | 4 | 2 |
| Finland[3] | Men | 67 | 82 | 76 | 61 | 43 | 14 | 15 | 16 | 14 | 10 |
| | Women | 69 | 86 | 80 | 63 | 40 | 12 | 14 | 14 | 11 | 7 |
| Germany | Men | 89 | 89 | 90 | 89 | 86 | 17 | 15 | 19 | 20 | 15 |
| | Women | 79 | 86 | 84 | 78 | 66 | 11 | 13 | 14 | 11 | 5 |
| Netherlands | Men | 69 | 73 | 70 | 68 | 61 | 27 | 28 | 29 | 29 | 22 |
| | Women | 60 | 75 | 65 | 51 | 39 | 21 | 27 | 23 | 18 | 12 |
| Sweden | Men | 74 | 87 | 77 | 70 | 59 | 13 | 9 | 14 | 15 | 12 |
| | Women | 78 | 88 | 83 | 76 | 61 | 13 | 11 | 13 | 15 | 11 |
| Switzerland | Men | 87 | 92 | 86 | 87 | 83 | 19 | 20 | 19 | 20 | 18 |
| | Women | 76 | 85 | 79 | 72 | 60 | 9 | 11 | 11 | 7 | 4 |
| U.K. | Men | 70 | 68 | 72 | 72 | 64 | 17 | 18 | 18 | 17 | 12 |
| | Women | 50 | 55 | 51 | 47 | 39 | 14 | 16 | 15 | 13 | 9 |
| United States | Men | 86 | 87 | 87 | 87 | 80 | 28 | 26 | 27 | 32 | 26 |
| | Women | 87 | 89 | 89 | 88 | 79 | 25 | 29 | 26 | 26 | 18 |
| Country mean | Men | 64 | 72 | 67 | 61 | 50 | 15 | 16 | 17 | 16 | 12 |
| | Women | 58 | 72 | 63 | 52 | 38 | 12 | 16 | 13 | 10 | 6 |

Source: *OECD* (2000A), p. 37. – [1] Excluding ISCED 3C Short programmes. – [2] The category "at least tertiary-type A" includes tertiary-type A and advanced research programmes. – [3] Year of reference 1997.

The educational attainment level of the adult population of working age is an indicator for the stock of human capital. It highlights the education policy of the past and is a point of reference for more recent education policy. Some indication of where the various countries stood in the international league in educational attainment in 1998 is given in Table 1. It shows that, for the 25-64 age population group, the proportion of those with at least upper secondary education, is substantially higher for both men and women in Austria and Denmark, as compared with the U.K., Australia and the Netherlands. This is also true for the various age sub-groups. However, the

reverse holds for those with at least tertiary type A[1] attainment. These figures suggest that there is a greater concentration of vocational skills in Austria, Denmark and other OECD countries than exists in the U.K., Australia and The Netherlands, a fact which the U.K., Australian and to a certain extent also the Dutch policy seeks to correct by its education and training policy. The distribution of educational attainment levels of the population is more polarised in the U.K., Australia and Netherlands than in Austria or Denmark, with an above average share of unskilled on the bottom end of the distribution and an above average share of persons with university education on the top of the distribution. This is starkly shown in Table 2 (taken from *OECD,* 1995, p. 53). Although the figures relate to 1990, it illustrates dramatically the comparatively low proportion of those with craft skills and the high proportion of those with no skills in the U.K..

*Table 2: Vocational qualifications in various European economies, around 1990*

*Percentage of economically active persons of working age*

| | Britain 1989 | France 1988 | Germany 1988 | The Netherlands 1989 | Switzerland 1991 |
|---|---|---|---|---|---|
| Degree | 11 | 7 | 11 | 8 | 11 |
| Technician | 7 | 7 | 7 | 19 | 9 |
| Craft | 18 | 33 | 56 | 38 | 57 |
| None | 64 | 53 | 26 | 35 | 23 |

Source: *OECD* (1995), p. 53.

The structure of the population by educational attainment level does not provide an adequate picture of the skill structure of the work force, however. It may be generalised that the higher the educational attainment level of a person the higher the participation rate. This general tenet is overshadowed by socio-economic and institutional factors, which affect the level of labour force participation of women. While, in 1999, the participation rate of men did not differ much between the countries under comparison - it was lowest in Austria with 84 percent of the 25 to 64 year olds, and highest in Australia with 87 percent – there were considerable differences for women. It was highest in Denmark with 76 percent of the 25-64 year olds, closely followed by the U.K. (73 percent), and lowest in The Netherlands (62 percent), closely followed by Austria (63 percent), and Australia (64 percent). The relatively large international discrepancy of female activity rates is a result of different perceptions about the role of women in society and the division of labour between household and market work. In the Nordic countries, like Denmark and Finland, a larger proportion of household services has been transferred to the market since the 1960s, in particular to the public sector (mainly child care and social services) than in countries like Netherlands, Austria, Australia or Germany.

[1] Type A (ISCED 5A) programmes are largely theory based and are designed to provide minimum qualifications for entry to advanced research programmes and professions with high skill requirements.

Women with low educational attainment levels tend to remain in the household or be discouraged from entering the workforce compared to those with higher educational attainment (Table 3). In countries with an above average female labour force participation, e.g., Denmark and the U.K., a larger proportion of women with low educational attainment becomes a feature of the labour market. In these circumstances, measures have been introduced to encourage employment of the less skilled.

*Table 3: Labour force participation rates by level of educational attainment and gender 1998 (for 25-64 year olds)*

| | | Below upper secondary education ISCED 0/1/2 | Upper secondary and post-secondary non-tertiary education ISCED 3/4 | Tertiary-type B ISCED 5B | Tertiary-type A and advanced research programmes ISCED 5A/6 | All levels of education |
|---|---|---|---|---|---|---|
| Australia | Men | 81 | 89 | 92 | 94 | 87 |
| | Women | 55 | 66 | 78 | 82 | 64 |
| Austria* | Men | 72 | 86 | 89 | 93 | 84 |
| | Women | 48 | 68 | 81 | 85 | 63 |
| Denmark | Men | 77 | 86 | 92 | 95 | 86 |
| | Women | 56 | 79 | 87 | 96 | 76 |
| Finland* | Men | 69 | 86 | 88 | 92 | 81 |
| | Women | 60 | 78 | 85 | 89 | 75 |
| France | Men | 77 | 89 | 93 | 91 | 85 |
| | Women | 57 | 76 | 83 | 83 | 69 |
| Germany | Men | 77 | 84 | 93 | 88 | 85 |
| | Women | 46 | 69 | 81 | 83 | 66 |
| Netherlands** | Men | 78 | 88 | x(5A/6) | 91 | 86 |
| | Women | 44 | 70 | x(5A/6) | 82 | 62 |
| Norway* | Men | 79 | 91 | 96 | 93 | 90 |
| | Women | 61 | 81 | 93 | 90 | 80 |
| Sweden** | Men | 80 | 89 | 88 | 93 | 87 |
| | Women | 67 | 83 | 86 | 92 | 81 |
| Switzerland | Men | 90 | 94 | 97 | 96 | 94 |
| | Women | 65 | 75 | 85 | 84 | 74 |
| United Kingdom | Men | 68 | 88 | 91 | 93 | 86 |
| | Women | 52 | 76 | 85 | 87 | 73 |
| United States | Men | 75 | 88 | 92 | 94 | 88 |
| | Women | 50 | 73 | 82 | 82 | 73 |
| Country mean | Men | 78 | 89 | 93 | 93 | 87 |
| | Women | 51 | 69 | 80 | 83 | 64 |

Source: *OECD* (2000A), p. 269. – * Year of reference 1997. – ** ISCED 4 is included in ISCED 5B.

## 2. The structure of the educational system

The object of the education policy of the various governments is not only to provide the skill base for sustained economic growth but also to ensure greater social inclusion of those who are disadvantaged by lack of adequate skill to enjoy greater job security and higher wages. However, this report considers mainly economic costs and benefits of education and training, in particular the relationship between investment in human capital and labour market performance. The

analysis is based upon a review of the relevant literature and interviews of planners of educational policy and researchers of educational outcomes in government departments and universities. The starting point of the analysis is a presentation of the educational system.

## The major building blocks of the education system

The four countries concerned have a standard progression of education, from primary level, then on to lower secondary education, followed by upper secondary education; then post-secondary or tertiary education either academic or vocational. There are small variations in the duration of schooling in the three segments of schooling arising partly from compulsory education years.

The commencement, duration and termination duration of compulsory education varies a little between the four countries. In Denmark, it spans from the age of 7 to 16. In Holland, full-time compulsory education is from 5 to 16, followed by two years of part-time compulsory education. In the U.K., compulsory schooling is from 5 to 16; while in Australia, it is from 5 to 15 compared to 6 to 15 in Austria.

There are basic differences in the educational structures of Denmark and Holland on the one hand, and the U.K. and Australia on the other. In Denmark, secondary education is streamed at the secondary and tertiary level into general and vocational education. In Holland, there are two general and two vocational streams at lower and upper secondary education, a system very similar to Austria, in which the two parallel streams are differentiated by initial endowment or ability differences of the pupils. This differentiation is carried through into tertiary education in two streams. In Denmark, the proportion of students in general and vocational education is about 50/50; in Holland, over 60 percent are in the vocational stream, rather less than in Austria, where about 80 percent of upper secondary students attend intermediate to higher vocational schools.

In the U.K. and Australia, the general education path dominates right through secondary education; it bifurcates into academic and vocational after this. The concern with the shortage of vocational skills, especially intermediate skills, has led both governments to concentrate more resources into vocational education. Provision has been made for vocational courses in the last two years of secondary schooling while post-secondary vocational education, especially in apprenticeships, have been widened and strengthened. Teething problems have been encountered, but the new direction is clear and we may in time expect the U.K. and Australia to move closer to the Danish and Dutch systems. However, in both groups there are opportunities for lateral movements between the streams.

The case for early provision of a binary system is by no means universally accepted as appropriate among educationists, especially as a basis for lifelong learning. An OECD study (1999A:59 et seq) has identified three principal types of pathways through upper secondary education and training and beyond it to work and tertiary education:

- General education pathways, in which a high proportion of upper secondary students take part in general education. Countries falling into this category include Australia, Canada, Japan and the USA, where some three-quarters of such students participate in general education. Broadly, this pathway is a preparation for tertiary study.
- School-based vocational pathways, in which the principal aim of a high proportion of students is to obtain an upper secondary level occupational qualification for direct entry into the labour market. Countries in this category are Hungary and the Czech Republic involving 82 percent and 70 percent respectively of all upper secondary students in these pathways; and to a lesser extent Austria and Finland, where about 40 percent of such students are involved.
- Apprenticeship-type vocational pathways, involving a contractual arrangement with employers and a direct link with the workplace, with the object of securing occupational qualification. This is a dominant feature of the Swiss and German systems, affecting more than 50 percent of all young people; and to a lesser extent (40 percent), the Austrian system.

The small proportion falling outside these pathways generally face difficulties in either further education or employment or both.

Comparing the main education and training pathways chosen by upper secondary students in Austria after compulsory education and other countries, the following picture emerges for 1996 (*OECD,* 1999A: Table 2.2):

The contrast between the two sets of countries is sharp: the Austrian experience is reflected in Denmark, Germany and to a lesser extent, the Netherlands; while the Australian picture is mirrored by North America and New Zealand. The U.K. occupies an intermediate position. It appears that a high proportion of upper secondary students in general education is associated with a high rate of participation of young people in tertiary education, as shown in North America and Australia, in contrast to Austria and Switzerland.

The pathways of young people through education and into work in Australia and the U.K. are more varied and individualised as a result of the diverse post school education and training options which are now available. Their education systems with rather loose links with the labour market (in contrast to the Austrian and German, for example) tends 'to have a strong emphasis on general education oriented to university study, modularisation of curriculum provision and courses . . . [and] most young people acquire their vocationally-specific skills on-the-job, rather than prior to entering employment' (*Philip McKenzie,* 2000:5). The question arises whether the mixed pathway should be preferred to divergent pathways of the Austrian type. One expert (*Philip McKenzie,* 2000:5) view is that:

*Table 4: Estimated distribution of upper secondary students by the main education and training pathways after compulsory education (1996 or closest year)*

| | Pathway | | |
|---|---|---|---|
| | Apprenticeship-type | School-based vocational | General education |
| *Thematic Review countries* | | | |
| Australia | 3 | 2 | 94 |
| Austria | 41 | 37 | 22 |
| Canada | 1 | 5 | 94 |
| Czech Republic | *x* | 82 | 18 |
| Denmark | 44 | 14 | 42 |
| Finland | 5 | 47 | 48 |
| Hungary | *x* | 70 | 30 |
| Japan | *a* | 26 | 74 |
| Norway | 25 | 27 | 48 |
| Portugal | 4 | 32 | 64 |
| Sweden | *n* | 60 | 40 |
| Switzerland | 60 | 9 | 31 |
| United Kingdom | 24 | 33 | 43 |
| United States | *n* | 12 | 88 |
| *Other countries* | | | |
| Belgium | 3 | 65 | 32 |
| France | 11 | 43 | 46 |
| Germany | 52 | 24 | 24 |
| Greece | *n* | 32 | 68 |
| Ireland | 5 | 15 | 80 |
| Italy | *a* | 72 | 28 |
| Korea | *a* | 42 | 58 |
| The Netherlands | 23 | 47 | 30 |
| New Zealand | 8 | 30 | 62 |
| Poland | *m* | 69 | 31 |
| Spain | 2 | 37 | 61 |

Symbols for missing data: *a* . . . Not applicable; *m* . . . Data not available; *n* . . . Magnitude either negligible or zero; *x* . . . Included in another column.
Sources: *Australia:* Country Note, Background Report, and *Ball – Robinson* (1998). Refers to 16 year-olds. Note that the proportion entering the school-based vocational and apprenticeship-type pathways rises between the ages of 16 and 19, and for the 15-19 age group as a whole is roughly 20 percent. *Canada: OECD* (1998i). *Czech Republic: OECD* (1998i). Refers to new upper secondary entrants. *Denmark:* Background Report. Refers to the destinations of those leaving compulsory school. The school-based vocational category refers to HHX and HTX programmes which also share many of the characteristics of general education programmes. *Hungary:* Country Note. Refers to secondary school commencements. *Japan:* Background Report. Refers to total students. *Norway:* Country Note. Refers to first year of upper secondary education. Proportions in the general pathway rise somewhat by the third and final year of upper secondary education. *Portugal: OECD* (1998i). *Sweden:* Background Report. Refers to upper secondary entrants. *United Kingdom:* Background Report. Refers to England and Wales. *United States:* Background Report. Refers to 1992. All other countries: *OECD* (1998a), Table C2.1.

The Australian approach to education and training offers great flexibility to young people, especially in the tertiary education sector. However, on the downside Australian education perhaps offers less certainty for young people than in countries where there is a tighter connection between education and labour market systems. Those who leave school early in Australia without any recognised qualifications tend to struggle to find stable work. Because of the relatively strong emphasis on general education programs up to the end of secondary school, early school leaving tends to be associated with a disadvantaged social background and difficulty in coping with school.

It is arguable that the mixed pathway of the U.K./Australian type provides a better balance between general and vocational education and establishes a better basis for later learning developments. (*OECD,* 1999A:68). However, the urgent immediate need for vocational education, not at the expense of academic education, is beyond dispute in both countries.

## Special Education Needs (SEN)

Special education systems have been developed for children and adults who need extra support for efficient learning in all OECD countries. Students with disabilities, learning deficiencies or who come from disadvantaged backgrounds need additional support to make educational progress. Increasingly these students tend to be included in mainstream education, additional resources being allotted to the mainstream schools to cater for the special needs kids. None of the OECD countries has yet a fully inclusive public education system.

Since the differing degree of integration of special needs kids into mainstream education makes international comparisons difficult, a new tri-partite international taxonomy classifies special programmes in an internationally consistent way. Category A needs arise from impairing conditions; category B needs refer to learning difficulties and category C refers to disadvantage. There is a substantial overlap between these categories. If one takes all three elements together, the proportion of children with special needs in compulsory education was 6.2 percent in Switzerland, 15.9 percent in Finland, about 15 percent in the United Kingdom and some 20 percent in Ireland in 1996 (*OECD,* 1998A, p. 228).

Denmark participated in an international comparison of special education needs systems in eight OECD countries (together with Australia, Canada, Germany, Iceland, Italy, the United Kingdom and the United States) undertaken in 1995 to 1998 (*OECD,* 1999C). In Denmark 13 percent of pupils were recognised as having special needs, a proportion similar to the United States (12 percent), Canada (10 percent to 16 percent), Australia (12 percent to 20 percent) and the United Kingdom (15 percent to 20 percent), but higher than in Germany (4.3 percent) and Italy (2 percent).

The proportion of students formally assessed and placed in special schools, however, is less than 1 percent of all students in all countries under analysis except in Germany (where it is 4 percent) and the United Kingdom (with 1.3 percent). The differences in data are based on different perceptions of special needs and thus of policy towards special needs.

The way to cater for special needs is to either put pupils into special schools, into special classes in regular schools or in regular classes in regular schools. In Denmark, there was a tendency in the 1980s to put special needs pupils into special classes in regular schools (from 24 percent 1981 to 32 percent 1988); but the majority of SEN-pupils are placed in special schools, although the proportion has fallen from 50 percent 1981 to 46 percent 1988. The share of special education

needs pupils in regular classes has been declining over that time span from 26 percent to 22 percent.

In general a move towards inclusion can be discerned, reflected in regular schools identifying larger numbers of pupils as having special needs. In the United Kingdom, the number of certified students and individual education programmes increased from 2.1 percent to 2.9 percent between 1992 and 1997. In the United States the number of students receiving special education services increased between 1990 and 1994 from 9.8 percent to 10.3 percent. Also Austria is increasing the expenditure on special needs pupils, in particular to improve the integration of children of foreign migrants.

*Table 5: Number of students receiving additional resources as a percentage of all students in compulsory education*

*Categories A, B and C, 1996 (based on head counts)*

| | Total percent of all students | Cross-national category A | Cross-national category B | Cross-national category C |
|---|---|---|---|---|
| Austria | m | 1.33 | 2.01 | m |
| Finland[2] | 16.00 | 1.04 | 13.26 | 1.70 |
| France[1 2 3] | 18.07 | 2.53 | 2.14 | 13.40 |
| Germany | 4.31 | 1.45 | 2.86 | x |
| The Netherlands[1 2 3] | 33.53 | 1.77 | 3.49 | 28.27 |
| Switzerland[2] | 5.80 | 1.62 | 3.76 | 0.42 |
| United Kingdom | 2.56 | x | x | x |
| United States | 35.50 | 5.62 | 8.43 | 21.40 |

Source: OECD (2000A), p. 192. – [1] Coverage different for primary and lower secondary education. – [2] Year of reference different from 1996. – [3] Some figures are estimated.

## 3. The role of the state in the education system

The **Danish** administration of its educational system is quite regionalised, somewhat like Austria and Germany, consisting of 14 counties and 275 municipalities[2]. The municipalities are responsible for primary and lower secondary education; they own and run public schools and they are supervising the quality of private schools. The expenses are covered by block grants from the government; the size of the grants to counties and municipalities is calculated on the basis of a number of criteria, in particular the number of citizens and the age structure. The municipal primary and lower secondary schools teach the majority of pupils. The number of pupils in private schools has risen, however, in the last decade and amounts now to some 15 percent of all students[3]. The state covers about 80 percent of the recurrent expenses of private schools.

[2] For a detailed account of the economic management of the Danish education system see *Hansen – Rasmussen* (1995).

[3] The proportion of the number of private schools is somewhat higher (28 percent) since the average size of private schools is smaller (160 pupils compared to 302 pupils in the average public school).

*General upper secondary education* (gymnasium), i.e., both the mainstream programme, which leads to the Studentereksamen, and the programme for mature students (HF = higher preparatory exam), is under the control of the *counties;* only the responsibility for pedagogical matters lies with the Ministry of Education. *The vocational upper secondary programmes*, however, are the responsibility of the *Ministry of Education;* programmes are offered in commercial (HHX = higher commercial exam) and technical (HTX = higher technical exam) colleges.

*Vocational Training of Youth* is in the main[4] the responsibility of the *Ministry of Education,* assisted by the council for Vocational Education, which is composed of social partners, local and regional authorities, teacher associations etc.

Vocational education and also labour market policy, which has a strong education and training element, is thus, with some exceptions, not in the domain of the counties or municipalities. They co-operate, however, in order to encourage young (unemployed) people to enter upper secondary education.

A key feature of the **Dutch** education system is the freedom to found schools on the basis of religious, ideological and educational beliefs (article 3 of the constitution). As a result the Netherlands has a very high proportion of privately run schools (65 percent of all schoolchildren), which may differ in terms of their cultural and religious outlook. Public schools are run by the municipal authorities or by a governing committee appointed by the municipality. Private schools are run by an association or foundation; most of them are either Catholic or Protestant, but other religious beliefs have also founded schools. In addition, private non-denominational schools exist, which are run by an association not based on specific religious or cultural beliefs. Unlike public schools, which must admit all pupils, private schools can impose criteria for admission.

In order to safeguard standards of education the Ministry of Education, Culture and Science imposes a number of statutory standards in relation to the quality of education, in particular the subjects, the attainment targets and the content of national examinations. Furthermore the number of teaching periods per year, teacher training and qualifications, the obligation of schools to plan and report to the Education Inspectorate are determined by the government.

The Education Inspectorate plays an important role in judging and controlling the quality of schools. Also the right of parents and of pupils in matters of the school have to be ensured.

The formulation of education and training policy in the **U.K.** is split between the Department for Education and Employment (DfEE) for England and its counterpart in Wales and Scotland. The DfEE, however, retains responsibility for employment matters throughout the U.K.. It is also the case that the DfEE is the leader in education policy initiatives for the whole country.

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[4] Exceptions are not only social and health service schools, which are under control of the counties, but also maritime education (Ministry of Industry and Commerce) and Postal and Railways Schools (Transport Ministry).

There is generally considerable uniformity between the different regions on most educational issues. This ensures not only that overall policy is consistent between the regions but also that the various curriculum and qualifications authorities work together. The need for compatibility if not uniformity in qualifications standards, is to ensure labour mobility and the transfer of students nation-wide.

Most schools are administered by local authorities, of which there are nearly 500 in the U.K., and education expenditure, funded by the central government, account for the bulk of local authority budgets. However, on such matters as curriculum, the power rests with the central government. Further Education Colleges receive their funds directly from the regional government.

Private schools are a longstanding feature of U.K. education with about 20 percent of children in such schools.

**Australia** is governed under a federal system of six States and a number of Territories to which the federal government has delegated certain administrative powers. The State governments play and active role in the administration of primary and secondary education, prescribing curricula, examinations, compulsory schooling etc.

Private schools are a characteristic feature of the Australian education scene, with an intake of some 30 percent of children. Non-government schools derive more than 50 percent of their funds from governments – about two-thirds of which comes from the federal government.

Universities, on the other hand, although under State control, have virtually been given a free hand to run their affairs subject to their charters legislated by the States. But as over 50 percent of university funds are derived from the Federal Government, it plays an important indirect controlling function on universities.

The delivery of vocational education and training is in the hands of the States, but policy for this section is shared with the Federal Government through the Australian National Training Authority, a body set up in 1992 for the purpose of streamlining and advancing vocational education.

## 4. Performance of the education system

International comparisons of student achievement have become an essential tool in assessing the performance of education systems, by measuring achievement in mathematics, science and reading. Mathematical skills are increasingly important in a globalised economy in which the adaptation to technological change is a key variable of competitiveness. Data from the Third International Mathematics and Science Study (TIMSS) show that Switzerland, the Netherlands and Austria are the three countries with the highest mean mathematics achievement of their 14 year olds for the year 1995 (Table 6). The Netherlands top all countries in the average science achievement level, closely followed by Austria. Also the lowest quartile and the top quartile had

higher mathematics and science achievement levels than the average of all OECD countries in these attainment groups. One has to bear in mind, however, that the Netherlands, as well as Austria and Switzerland, did not fulfil the sampling requirements for a representative survey.

*Table 6: Student differences in mathematics and science achievement*

*Distribution of mathematics/science achievement scores, eighth grade (1995)*

| | Mathematics | | | Science | | |
|---|---|---|---|---|---|---|
| | Mean | 25th percentile° | 75th percentile° | Mean | 25th percentile° | 75th percentile° |
| Australia** | 530 | 460 | 600 | 545 | 475 | 619 |
| Austria** | 539 | 474 | 608 | 558 | 499 | 623 |
| Denmark** | 502 | 443 | 561 | 478 | 423 | 541 |
| Germany** | 509 | 448 | 572 | 531 | 463 | 602 |
| Netherlands** | 541 | 477 | 604 | 560 | 505 | 619 |
| Norway | 503 | 445 | 560 | 527 | 470 | 588 |
| Sweden | 519 | 460 | 579 | 535 | 476 | 598 |
| Switzerland* | 545 | 485 | 607 | 522 | 460 | 587 |
| England* | 506 | 443 | 570 | 552 | 485 | 625 |
| USA* | 500 | 435 | 563 | 534 | 465 | 608 |
| Country mean | 516 | 456 | 576 | 523 | 464 | 586 |

Source: *OECD* (1996), p. 206, 207. – ° 25 or 75 per cent of students score below this point. – * Countries met TIMSS sampling requirements only partially. – ** Countries did not meet TIMSS sampling requirements.

*Table 7: Gender differences in mathematics and science*

*Mean mathematics/science achievement by gender in eighth grade (1995)*

| | Mean mathematics | | | Mean science | | |
|---|---|---|---|---|---|---|
| | Boys | Girls | Difference in means° | Boys | Girls | Difference in means° |
| Australia** | 528 | 533 | *5g* | 551 | 541 | *9b* |
| Austria** | 544 | 536 | *8b* | 566 | 549 | *18b* |
| Denmark** | 512 | 495 | *17b* | 495 | 464 | *31b* |
| Germany** | 512 | 509 | *3b* | 542 | 524 | *18b* |
| Netherlands** | 545 | 537 | *8b* | 570 | 550 | *21b* |
| Norway | 505 | 501 | *4b* | 534 | 521 | *13b* |
| Switzerland* | 548 | 544 | *5b* | 529 | 515 | *15b* |
| Sweden | 520 | 518 | *2b* | 543 | 528 | *15b* |
| England* | 509 | 505 | *4b* | 563 | 543 | *20b* |
| USA* | 502 | 498 | *4b* | 539 | 530 | *9b* |
| Country mean | 519 | 513 | *7b* | 532 | 515 | *18b* |

Source: *OECD* (1996), p. 216, 217. – ° b means boys score higher, g means girls score higher. – * Countries met TIMSS sampling requirements only partially. – ** Countries did not meet TIMSS sampling requirements.

Gender differences in Dutch student achievement were not much higher than the average of all OECD countries in both mathematics and science (Table 7) – the same holds for Austria. Only Sweden and Germany have hardly any difference in the mean mathematics achievement by gender. Also significantly below the OECD average are countries like USA, England, Norway,

Australia and Switzerland. This goes to show that no particular efforts beyond the ones in other OECD countries have been made in the Netherlands and Austria to reduce gender segmentation in education. The increasing demand for workers with mathematics and science skills in a period of economic development, which is driven by technological change, implies that the career opportunities and the earnings potential of women are not going to be as good as those for men in the Netherlands and Austria.

## Educational attainment level of youth relative to adults

Australia stands out with 44 percent of the population having attained no more than lower secondary education (ISCED 2), followed by Netherlands with 36 percent. This is an important source of youth unemployment in those countries and one which is being rectified by encouraging a higher retention rate within upper secondary education.

But also Austria has a relatively high share of persons in the population 25 to 64 who have no more than lower secondary education (26.7 percent), to a large extent middle aged and older women. They tend to be farmers or remain in the household sector thus not raising the unemployment figures unduly.

Taking upper secondary education and post-secondary non-tertiary education together (ISCED 3 and 4), Austria stands out, followed closely by Germany, with the U.K. and Denmark trailing a little behind. This level of attainment provides a viable base for transition to further education and employment. It will be seen that Australia is at the bottom of the list.

At the top end of the educational ladder, taking Tertiary A and B together (ISCED 5A, 5B and 6), the USA and Finland stand out, followed by Australia and Denmark, while Austria is well at the bottom of the list. Table 8 shows the polarisation of attainment particularly for Austria and Australia, but in opposite directions, suggesting a neglect of intermediate skills in Australia and a neglect of tertiary education in the case of Austria. The USA and Germany are examples in which a more reasonable balance is achieved for these types of skills. The relatively small proportion of university graduates in the Austrian labour force has to be seen in the context of the division of labour between the public and private sector (*Biffl,* 2000). In Austria, the majority of university graduates is employed in the public sector or the until recently quasi public sector, like telecom and banking. As industrial restructuring and privatisation of public sector services is gaining momentum in Austria, the implications for the educational system, in particularly tertiary education and its funding, are being debated. Invariably this debate will lead into a reform of the education system and its funding, given that the majority of university graduates in Austria will, in future, have to expect to find employment in the private sector, as is the case of the countries under comparison.

*Table 8: Distribution of the population 25 to 64 years of age by level of educational attainment (1998)*

| | Pre-primary and primary education | Lower secondary education | Upper secondary education | Post secondary non-tertiary education | Tertiary-type B education | Tertiary-type A and advanced research programmes | All levels of education |
|---|---|---|---|---|---|---|---|
| | ISCED 0/1 | ISCED 2 | ISCED 3 | ISCED 4 | ISCED 5B | ISCED 5A/6 | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Australia | x(2) | 44.0 | 30.6 | x(3) | 8.8 | 16.6 | 100 |
| Austria* | x(2) | 26.7 | 57.0 | 5.7 | 4.5 | 6.2 | 100 |
| Denmark | 0.1 | 21.4 | 53.2 | x(3) | 19.8 | 5.4 | 100 |
| Finland* | x(2) | 31.7 | 38.9 | - | 16.7 | 12.8 | 100 |
| Germany | 2.1 | 14.1 | 56.3 | 4.4 | 9.0 | 14.0 | 100 |
| The Netherlands | 12.5 | 23.2 | 40.1 | x(6) | x(6) | 24.2 | 100 |
| Switzerland | x(2) | 18.5 | 58.5 | x(3) | 9.0 | 14.0 | 100 |
| United Kingdom | x(2) | 19.2 | 57.3 | x(7) | 8.2 | 15.4 | 100 |
| USA | 5.0 | 8.6 | 51.6 | x(3) | 8.3 | 26.6 | 100 |
| Country mean | 24.4 | 19.4 | 59.9 | 5.4 | 9.4 | 13.6 | |

Source: *OECD* (2000A), p. 33. Note: Column of reference is given in brackets after "x", x(2) means that data are included in column 2. – * Year of reference 1997.

ISCED 0: Early childhood education serves a dual purpose: to give the child daily care while parents are at work.
ISCED 1: Programmes at the primary level generally require no previous formal education.
ISCED 2: The core of lower secondary education continues the basic programmes of the primary level.
ISCED 3: Upper secondary level requires the completion of the lower secondary level of educationor a combination of basic education and vocational experience.
ISCED 4: Post-secondary non-tertiary educational programmes are at the boundary between upper secondary and post-secondary education.
ISCED 5A: Tertiary-type A programmes are largely theory-based and are designed to provide sufficient qualifications for entry to advanced research programmes and professions with high skill requirements, such as medicine, dentistry or architecture. Tertiary-type A programmes have a minimum cumulative theoretical duration of three years' full-time equivalent, although they typically last four or more years. These programmes are not exclusively offered at universities. Conversely, not all programmes nationally recognised as university programmes fulfil the criteria to be classified as tertiary-type A. Tertiary-type A programmes include second degree programmes like the American Master. First and second programmes are sub-classified by the cumulative duration of the programmes.
ISCED 5B: Tertiary-type B programmes are typically shorter than those of tertiary-type A and focus on practical, technical or occupational skills for direct entry into the labour market, although some theoretical foundations may be covered in the respective programmes. They have a minimum duration of two years full-time equivalent at the tertiary level.
ISCED 6: This level is reserved for tertiary programmes that lead directly to the award of an advanced research qualification, e.g., an Ph.D. The theoretical duration of these programmes is 3 years full-time in most countries, although the actual enrolment time is typically longer. The programmes are devoted to advanced study and original research.

The more recent efforts to increase the educational attainment level of the population can be judged by looking at the school attendance rate by age in Table 9.

It will be seen that for 15 and 16 year olds, the attendance rates for secondary education are more or less the same for most of the countries listed except for 16 year olds in the USA and the U.K., where they are significantly lower.

At 17, the secondary education attendance rates for all countries fall but the fall is greatest for the USA and the U.K.. For these two countries as well as for Australia and Finland, the fall continues through to the age of 20 but attendance at tertiary education rises; confirming the high tertiary education component of the population noted in Table 8.

In Austria, on the other hand, the move into tertiary education is not as great as the countries just considered; but the shift into post-secondary non-tertiary is marked (higher vocational education in the commercial, technical and tourist field – HAK and HTL). Germany presents a similar picture except that it has a significant post secondary non-tertiary component at age 19 and 20.

Denmark and Switzerland, present another picture again. Here attendance at secondary education is maintained at a high level right through to the age of 20, with a small increase in tertiary education.

The Netherlands maintains a high level of attendance in secondary education while increasing attendance at tertiary level.

It would be interesting to find out whether these divergent pictures reflect different skills demands or whether they are simply supply effects, reflecting the inclinations of the student population. The most likely explanation is that both factors have been at play to varying extents.

*Table 9: Transition characteristics at each year of age from 15 to 20: net enrolment rates by level of education*

*Based on head counts (1998) in percent*

| | Age 15 | Age 16 | | Age 17 | | | Age 18 | | | Age 19 | | | Age 20 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Second. education | Second. education | Second. education | Post-second. non-tertiary | Tertiary education | Second. education | Post-second. non-tertiary | Tertiary education | Second. education | Post-second. non-tertiary | Tertiary education | Second. education | Post-second. non-tertiary | Tertiary education |
| Australia | 99 | 97 | 81 | 1 | 5 | 34 | 3 | 30 | 20 | 3 | 35 | 17 | 2 | 32 |
| Austria | 94 | 88 | 75 | 11 | | 43 | 19 | 6 | 15 | 11 | 15 | 5 | 4 | 20 |
| Denmark | 98 | 93 | 82 | | | 74 | | | 54 | | 3 | 30 | | 10 |
| Finland | 100 | 89 | 93 | | | 82 | | 3 | 24 | | 19 | 14 | | 31 |
| Germany | 98 | 96 | 91 | | 1 | 83 | | 3 | 40 | 18 | 8 | 18 | 15 | 15 |
| Netherlands | 99 | 96 | 85 | 1 | 3 | 62 | 1 | 15 | 39 | 1 | 25 | 26 | 1 | 30 |
| Switzerland | 98 | 90 | 85 | | | 78 | 1 | 1 | 54 | 3 | 6 | 23 | 3 | 13 |
| U.K. | 101 | 81 | 66 | | 2 | 25 | | 24 | 14 | | 33 | 10 | | 33 |
| USA | 99 | 84 | 74 | | 3 | 23 | 3 | 37 | 4 | 3 | 39 | 1 | 3 | 40 |
| Country mean | 93 | 88 | 78 | 1 | 1 | 48 | 4 | 16 | 23 | 4 | 25 | 12 | 3 | 28 |

Source: *OECD* (2000A), p. 136.

## 5. Economic impact of the education system

The education system is seen by Denmark not only as a means to prepare youth for the labour market but also as an important instrument of empowerment of the individual to active participation in a democratic society. In contrast, the Dutch stress the role of the education system, apart from its socio-economic role, as a vehicle to create and transfer norms and values to youth. The preservation of the competitiveness of the economy is, however, for all countries of pivotal importance, which one hopes to foster through investment in human capital. The latter is supposed

to raise long-term economic growth and productivity. This is achieved by ensuring that no skill shortages of the work force occur, which could cause a deterioration of productivity growth and rising inflation.

## Expenditure on education and funding structure

The OECD average total public expenditure on all institutions of education amounted to 5.1 percent of GDP in 1997 (OECD, country mean), compared to 4.8 percent 1990 (*OECD,* 2000A, p. 54). The Netherlands spent with 4.3 percent of GDP, equal to Australia, somewhat less than the U.K. (4.6 percent) and the OECD average (5.1 percent), and clearly less than Austria (6 percent, 1990: 5.2 percent).

If private expenditure devoted to educational institutions is included, the OECD average goes up to 5.8 percent of GDP in 1997 (country mean, *OECD,* 2000A), 4.7 percent in the case of the Netherlands, 6.8 percent and 5.6 percent in respect of Denmark and Australia respectively. The contribution of private resources is greatest for Australia. If one includes direct public financial support of students (grants and loans) and private households to public expenditure on education, the OECD public and private average expenditure on education rises to 6.1 percent of GDP (country mean). In the Netherlands public financial support of households and students is relatively limited such that total expenditure of the public and private sector to education reaches only 5.1 percent of GDP, while Sweden stands out, followed by Denmark, Austria and Australia. The figures indicate that Austria offers less financial support to households or students to cover expenses linked with education (student grants) than the Netherlands, Denmark and Australia. Since students continue to receive child benefits in Austria, subject to reasonable study progress, one could see it as a special form of student grant system.

Public expenditure on primary and lower secondary education makes up almost half of all the expenditure on educational institutions, public and private taken together – the OECD average was 39 percent in 1997, i.e., 2.4 percent of GDP. Pre-primary school expenditure amounts to 0.4 percent of GDP. It is necessary to add up nursery and compulsory school expenditure when making international comparisons, since there are differences in the entry age to compulsory education as well as the private/public financial contribution mix.

In the case of Holland, 57 percent of all expenses on education accrue to the 3 to 15 year olds; this is the same proportion as in Denmark but considerably more than in the OECD on average (46 percent) and also more than in Austria (49 percent) and Australia (50 percent). This results partly from demographic structures of the student population, partly from the funding system of education and the employment structure and system (employee status of teachers and other personnel - the public-private sector mix) in the education system.

*Table 10: Educational expenditure as a percentage of GDP for all levels of education by source of funds (1997 and 1990)*

| | 1997 | | | 1990 | |
|---|---|---|---|---|---|
| | Direct public expenditure for educational institutions | Total expenditure (public and private) for educational institutions | Total expenditure (public, private and internat. sources) for education institutions plus public subsidies to households | Direct public expenditure for educational institutions | Total expenditure (public and private) for educational institutions |
| Australia | 4.3 | 5.6 | 6.1 | 4.3 | 4.9 |
| Austria | 6.0 | 6.5 | 6.7 | 5.2 | – |
| Denmark | 6.5 | 6.8 | 8.2 | 6.2 | 6.4 |
| Finland | 6.3 | 6.3 | 6.9 | 6.4 | 6.4 |
| Germany | 4.5 | 5.7 | 5.9 | – | – |
| Netherlands | 4.3 | 4.7 | 5.1 | – | – |
| Sweden | 6.8 | 6.9 | 8.5 | – | – |
| Switzerland | 5.4 | 6.0 | 6.1 | 5.0 | – |
| United Kingdom | 4.6 | | | 4.3 | – |
| USA | 5.2 | 6.9 | 7.1 | – | – |
| Country mean | 5.1 | 5.8 | 6.1 | 4.8 | 5.2 |
| OECD total | 4.8 | 6.1 | 6.5 | 4.4 | 5.0 |

Source: *OECD* (2000A), p. 54.

Expenditure on upper secondary education amounted to 0.8 percent of GDP in 1997 for Holland (OECD average 1.2 percent, Austria and Denmark 1.5 percent), i.e., 17 percent of total expenditure. For Holland, tertiary education costs are very similar to the OECD average and for Denmark, with 1.2 percent of GDP, while Australia stands out with 1.7 percent, but well below the U.S. figure of 2.6 percent.

It will be seen that Austria spends somewhat more in relative terms on tertiary education (1.5 percent of GDP) even though the enrolment rate of 20 year olds is 10 percentage points lower in Austria than in Holland. This raises the question of cost- effectiveness of the Austrian tertiary education institutions. In order to better judge the efficiency of the system, one has to take account of the different composition of tertiary education, however. Some study fields are more expensive than others due to more sophisticated technical equipment like computer facilities or laboratory work.

Special mention should be made of the Danish model of 'taximeter' funding. While the funding of the public compulsory education institutions is under central management and control, the 'self-governing' colleges of education of upper secondary education receive public funds to cover their recurrent costs (teachers' wages, other wages, teaching material including capital expenditure) on the basis of the taximeter model[5]. The taximeter consists of a fixed and a variable component of finance. The variable element of current costs is based on the number of students who graduate

[5] For a detailed account of the financing of vocational education and training see *CEDEFOP* (1998).

from the programmes. This is intended to provide incentive for more effective teaching and a faster throughput of students. The fixed cost element is concerning buildings, investment, interest etc. The system was first introduced for schools of higher education in 1994[6] and extended to vocational upper secondary education and open education after a reform of the funding system in 1997.

The taximeter model was also chosen as the funding system, in order to simplify the funding system of 1,350 institutions of upper secondary vocational education and of higher education and to render funding mechanisms more transparent to the Ministry of Education.

Because of concerns that the model might affect the quality of education adversely, the model has been evaluated in 1997/98 (government report) and proven successful in the case of colleges of education and vocational colleges, i.e., the objectives of the reform were obtained[7]. The Danish Centre for the Evaluation of Higher Education (EVC) stated that the taximeter model did not result in a decline of educational standards, e.g., as a result of funding induced higher pass rates. One reason being that external examiners introduce a measure of control for the preservation of standards. On the other hand, the taximeter might bias the selection process of students, i.e., favouring selection of those students who are most likely to pass.

In the course of the 1990s public and private expenditure on all levels of educational institutions has remained fairly stable in the Netherlands. The overall cost development does not reveal, however, that this was not a universal trend but rather the result of diverging cost trends in the different educational levels. While expenditure on primary and secondary educational institutions has increased between 1990 and 1996 by 5 percent, expenditure on tertiary educational institutions has fallen by 5 percent. This is very different to Austria. In Austria public and private expenditure on all major educational institutions has risen. The average increase amounted to 32 percent; the rise was particularly pronounced in the case of the university system (+41 percent), but still considerable – with +27 percent – in the primary and secondary education system. Different demographic dynamics, institutional factors as well as genuine educational policy differences account for the differences.

To sum up, one may say that the Dutch education system is the most efficient by the test of performance and cost. The performance of children in mathematics and science is good on the basis of international comparisons, and the cost of education is relatively low (measured in educational expenditure as a percentage of GDP). International comparisons can, however, only

[6] Open education, i.e., vocational part-time education for adults, has been funded on the basis of the taximeter-model since 1990. Open education is, however, in contrast to initial higher education partly funded by user fees.

[7] Universities are less affected by grants, which are related to student numbers (passed exams), since about two thirds of their total grants are grants for research and capital expenses. Besides, the governance structure of universities differs from the one of colleges of education.

provide a limited insight into the costs to the state and the individual, since the funding system has to be seen in the context of the social security and tax system.

*Table 11: Educational expenditure from public and private sources for educational institutions as a percentage of GDP by level of education (1997)*

| | Pre-primary education | Primary and lower secondary education | Upper secondary education | Post-secondary non-tertiary education | Tertiary education | All levels of education |
|---|---|---|---|---|---|---|
| Australia | 0.1 | 2.8 | 1.0 | 0.1 | 1.7 | 5.6 |
| Austria | 0.5 | 2.7 | 1.5 | – | 1.5 | 6.5 |
| Denmark | 1.0 | 2.8 | 1.5 | – | 1.2 | 6.8 |
| Finland | 0.7 | 2.6 | 1.2 | – | 1.7 | 6.3 |
| Germany | 0.5 | 2.2 | 1.3 | 0.3 | 1.1 | 5.7 |
| Netherlands | 0.4 | 2.3 | 0.8 | – | 1.2 | 4.7 |
| Switzerland | 0.2 | 2.9 | 1.6 | 0.1 | 1.1 | 6.0 |
| United Kingdom | 0.4 | – | – | – | 1.0 | |
| USA* | 0.4 | – | – | – | 2.6 | 6.9 |
| Country mean | 0.4 | 2.5 | 1.3 | 0.1 | 1.3 | 5.8 |
| OECD total | 0.4 | 2.4 | 1.2 | 0.1 | 1.7 | 6.1 |

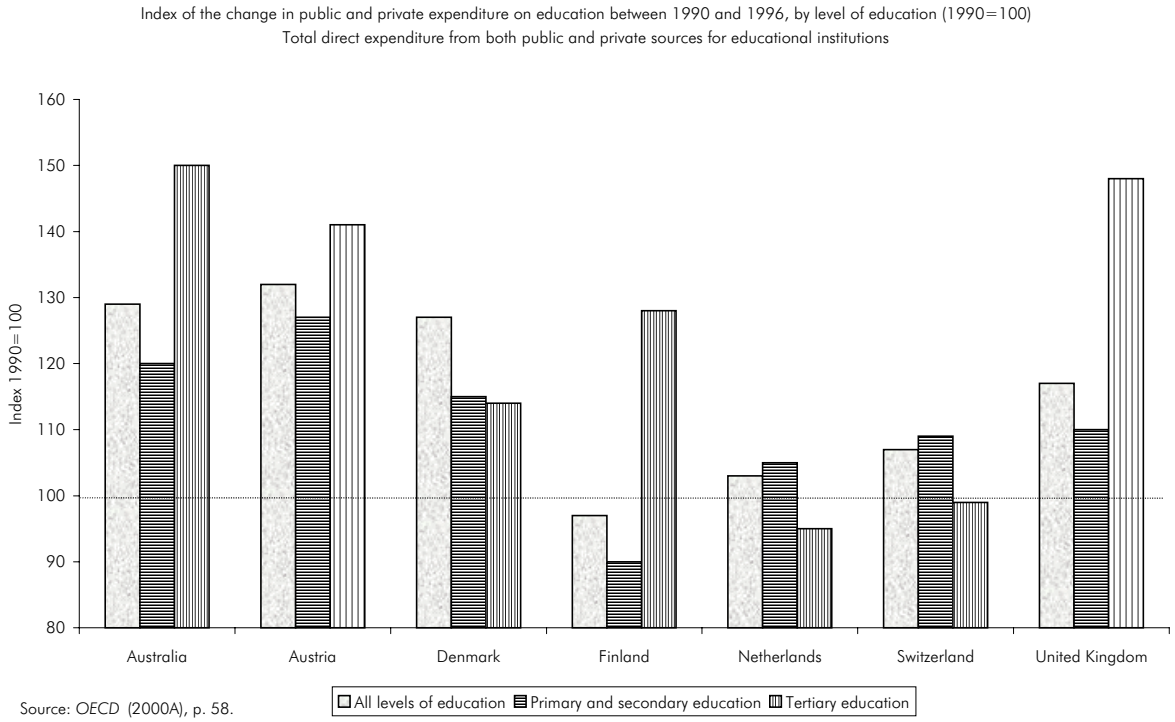
Source: *OECD* (2000A), p. 57. – *Post-secondary non-tertiary data included in tertiary education.

Expenditure per pupil or student in higher education has to be taken into account. International differences in the student/teacher ratios may derive from differing demographic pressures in different stages in the education system and the asymmetry in adjustment speeds, they may result, however, also from genuinely different educational policies. In Austria, the low student/teacher ratio in 1998 is not only the result of educational policy but also of more pronounced structural demographic change than in most other OECD countries[8], i.e., a larger and concentrated babyboom followed by a pronounced babyslump, and a rigid public sector employment system based on tenure which does not offer the employment flexibility of the private sector. This is one reason for the relatively high cost of secondary education in Austria.

The Netherlands have quite consistently in every level of education an above average student/teacher ratio, also in tertiary education. This feature leads one to suspect that it is genuine educational policy. In 1998, the ratio in tertiary education was 18.7 students per teaching staff compared to 14.6 in the OECD (country mean). This is the only educational level in which Austria has an above average student/teacher ratio. The ratio of 15.7 is, however, still lower than in the Netherlands. This may be the result of a different composition of tertiary education by study field than in other OECD countries, it may also be an indicator of different quality standards.

[8] The Netherlands and Nordic countries have had a much smoother demographic development, in particular less fluctuation in fertility, than Austria.

*Graph 2: Change in public and private expenditure by level of education, in OECD countries (1990-1996)*




Source: *OECD* (2000A), p. 58.

*Table 12: Ratio of students to teaching staff by level of education, calculations (based on full-time equivalents) 1998*

| | Early childhood education | Primary education | Lower secondary education | Upper secondary education | All secondary education | All tertiary education |
|---|---|---|---|---|---|---|
| Australia | m | 17.9 | 14.7 | 16.8 | 15.5 | m |
| Austria | 18.6 | 12.7 | 9.3 | 9.7 | 9.5 | m |
| Finland | 11.9 | 17.7 | 11.0 | m | M | m |
| Germany | 23.2 | 21.6 | 16.3 | 13.6 | 15.5 | 12.4 |
| Netherlands | x | 17.8 | m | m | 18.5 | 18.7 |
| Sweden | m | 13.4 | 13.2 | 17.0 | 15.3 | 9.0 |
| Switzerland* | 18.7 | 16.3 | 12.1 | 17.6 | 14.0 | m |
| United Kingdom | 21.5 | 22.0 | 16.7 | 16.7 | 16.7 | 17.7 |
| United States | 18.0 | 16.5 | 17.1 | 14.7 | 15.9 | 14.6 |
| Country mean | 15.5 | 17.1 | 14.9 | 15.1 | 15.2 | 14.6 |

Source: *OECD* (2000A), p. 119. – * Public institutions only.

## Overview of the labour market of youth and young adults

While the total unemployment rate was 6.3 percent in the U.K. in 1998 (*OECD,* 2000B) youth unemployment (16-24 year olds) was 12.3 percent, i.e., double the average rate. A closer look at the composition reveals particularly high labour market problems of 16-19 year olds (Table 13). They had an unemployment rate of 15.5 percent, in which the group with the lowest educational attainment level, i.e., youth with no upper secondary education, had the highest unemployment rates (29.6 percent), while 16-19 year olds with upper secondary education had an unemployment rate of 13.1 percent. The picture is similar for Australia, in contrast to Austria, Denmark and the Netherlands. Nevertheless, compared to the total unemployment rate, the youth unemployment rate of the 15-19 year olds is significantly higher in both Austria and Denmark.

The unemployment differential between youth and adults is a matter of concern; the declining proportion of youth in the population of working age suggests that the problem of youth unemployment does not result from supply factors. A combination of demography and increased participation in education and training have reduced the number of young people available for work by almost one third in the 1990s compared to the 1980s. In spite of that, labour market opportunities of youth in terms of wages and employment opportunities, have not been overwhelming. There is a general acceptance that this is the result of demand developments, i.e., the traditional entry ports of youth into the labour market, craft and related manufacturing jobs, clerical work, sales, catering and hairdressing have become scarce, while jobs requiring higher skills levels in managerial, technical and administrative jobs have risen in demand. At the same time the segment of low wage employment is increasing, with the result that unskilled youth has worse labour market prospects now than a decade ago.

In principle there are three ways to reduce the unemployment rate of the least educated:

- by reducing the replacement ratios in the benefit system,
- by keeping a check on the wages at the lower end of the wage distribution,
- by increasing the educational attainment and skill level of the least educated.

The first two options increase income inequality. The third tries to increase the labour productivity of the least skilled and through that improve the employment prospects. The Netherlands, U.K. and Australia have chosen a combination of all three instruments, giving particular emphasis on the last option. Denmark has chosen the third option, preferring to avoid greater income inequality.

*Table 13: Youth unemployment rates by level of educational attainment and age group (1998)*

| | Below upper secondary education | | | Upper secondary and post-secondary non-tertiary education | | | Tertiary-type B | | Tertiary-type A and advanced research programmes | | All levels of education | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ISCED 0/1/2 | | | ISCED 3/4 | | | ISCED 5B | | ISCED 5A/6 | | | | |
| | 15-19 | 20-24 | 25-29 | 15-19 | 20-24 | 25-29 | 20-24 | 25-29 | 20-24 | 25-29 | 15-19 | 20-24 | 25-29 |
| Australia | 23.6 | 20.8 | 12.7 | 12.0 | 10.8 | 6.8 | 6.9 | 5.4 | 5.2 | 2.7 | 19.4 | 12.0 | 7.4 |
| Austria* | 8.4 | 7.6 | 10.9 | 8.8 | 4.3 | 3.2 | 4.1 | 3.8 | m | 4.2 | 8.6 | 4.7 | 4.4 |
| Denmark | 8.3 | 9.2 | 10.4 | 12.1 | 4.8 | 5.9 | 9.5 | 4.7 | m | 9.5 | 8.6 | 6.1 | 6.4 |
| Finland* | 34.5 | 29.1 | 23.5 | 31.8 | 20.7 | 15.4 | 15.9 | 12.2 | 13.5 | 8.5 | 33.6 | 21.3 | 14.8 |
| France | 23.8 | 37.2 | 26.7 | 26.5 | 22.8 | 15.4 | 14.7 | 10.5 | 18.4 | 11.1 | 24.4 | 25.6 | 16.1 |
| Germany | 6.9 | 16.3 | 20.4 | 7.3 | 8.2 | 7.7 | m | 4.8 | m | 4.9 | 7.6 | 9.9 | 8.7 |
| Ireland** | 16.9 | 22.3 | 15.1 | 10.8 | 7.4 | 4.6 | 5.4 | 3.5 | 5.4 | 3.1 | 14.3 | 10.3 | 6.9 |
| The Nether-lands*** | 12.9 | 6.8 | 5.9 | 7.3 | 4.3 | 1.9 | x(5A/6) | x(5A/6) | 4.8 | 1.5 | 11.8 | 5.6 | 3.6 |
| Norway* | 26.0 | 13.2 | 9.1 | 13.1 | 8.0 | 5.0 | 5.9 | 3.1 | 8.7 | 5.3 | 16.0 | 8.6 | 5.6 |
| Spain | 40.9 | 29.4 | 24.6 | 42.5 | 32.2 | 21.9 | 31.7 | 19.5 | 43.6 | 28.6 | 41.2 | 31.9 | 24.3 |
| Sweden*** | 18.4 | 26.7 | 21.2 | 29.1 | 14.8 | 10.2 | 7.1 | 6.7 | 1.2 | 3.4 | 20.4 | 15.4 | 10.1 |
| U.K. | 29.6 | 24.5 | 19.8 | 13.1 | 9.9 | 7.3 | 6.1 | 2.5 | 6.8 | 2.9 | 15.5 | 10.1 | 7.0 |
| USA | 18.3 | 17.8 | 12.1 | 9.9 | 8.5 | 6.3 | 1.9 | 3.2 | 2.3 | 1.9 | 15.2 | 8.4 | 5.3 |
| Country mean | 22.1 | 18.9 | 15.2 | 20.9 | 13.6 | 9.0 | 10.8 | 7.1 | 13.8 | 7.7 | 20.2 | 13.8 | 9.2 |

Source: *OECD* (2000A), p. 271. – * Year of reference 1997. – ** ISCED 5B includes some ISCED 4. – *** ISCED 4 is included in ISCED 5B.

## The value of education: cost-benefit analyses

From an economic point of view, public spending on education and training can be regarded as an investment: it is worthwhile if the net present value of its expected benefits to society exceeds the net present value of expected social costs. The benefits and costs to the individual and the employer differ from the social rate of return and may be treated separately. It is difficult to obtain a definite answer to the question of the optimal public/private funding mix of education, however, because it is difficult to quantify the full economic benefits of education and training and the division between the 'social' and 'private' net benefit.

There is little consensus both on the range of the true returns to education and on the appropriate method to measure it. The methodological difficulties arise from the fact that educational decisions are not equally distributed amongst individuals but structured in terms of educational background and social status of the parents, the educational opportunities in the region (urban versus rural) and the innate ability of the individual – to name but a few structuring mechanisms. Further, access to different types of schooling is not only unequal for all individuals, but the returns to education may also be different for individuals with the same type of education (*Card,* 1994)[9].

[9] Analyses for the U.K. and Ireland show that an increasing participation in higher education of youth from the bottom of the socio-economic distribution, a result of reducing the cost of higher education to the disadvantaged, has resulted in

For practical purposes the most relevant economic indicator of the benefits of education spending to society is the marginal rate of return on the incremental resources allocated to education. The higher earnings which result from increases in human capital (measured by increasing expenditure in education and training) are the return on this investment and the premium for better skills and thus presumably higher productivity. Thus one may differentiate between economic rates of return to investment in human capital for the individual, the labour market in terms of productivity impact and for the society, i.e., social returns to education.

Differences of wages may result from differences in investment in human capital. A normal rate of return on this investment lets one to expect to show up in a higher wage for higher education, i.e., the wage differences are compensating for foregone earnings during the time of education and direct cost of education beyond compulsory education. If rates of return to higher education are more pronounced than warranted by normal interest rates, this can be taken as an indicator of under-schooling in a society.

*Individual rates of return*

Every country under analysis has undertaken substantial research into the economic returns to education; the datasets used are varied and allow a wide gamut of issues associated to returns to education to be addressed. The unit of observation is the individual and the theoretical approach is an augmented specification of the standard human capital earnings function as proposed by *Mincer* (1974). The focus of research may differ, e.g., be centred around the reason for gender specific wage differentials, around wage differentials in general (due to education, experience and occupation, to family background and ability, race), between private-public sector wage differentials or between different industries, also wage differentials between firms may be the focus of research or returns to enterprise related training.

An overview of relative earnings from employment by educational level in OECD countries (*OECD,* 2000A, p. 297), shows that there is a considerable difference in individual rates of return to education between countries.

The shortfall in earnings due to less than upper secondary education, i.e., of a skill level below ISCED 3/4, amounted to 36 percent in the case of the U.K. in 1998 for the population 25 to 64 years of age. This is one of the highest negative differentials for unskilled labour of any OECD country, only equalled by the USA. Switzerland (26 percent), Australia (21 percent) and Germany (19 percent) follow suit. Significantly lower earnings shortfalls apply to unskilled workers in Finland (3 percent), and Sweden (10 percent). In Denmark the shortfall in earnings due to less than upper

"crowding out" of some less talented from better off backgrounds such that the premium to higher education of the better off has been reduced (*Dearden,* 1998, for the U.K., *Denny – Harmon*, 2000 for Ireland in the 1970s).

secondary education amounted to 15 percent, which is fairly similar to Norway, France and Netherlands.

The premium for tertiary education skills of ISCED 5 or 6 compared to upper secondary education skills for the U.K. was, in contrast, one of the highest in OECD countries with 68 percent. Similarly high returns to higher education can be reaped in France (69 percent), Germany (63 percent), and Switzerland (62 percent), significantly higher ones in Finland (86 percent). In Denmark, in contrast, the premium for tertiary education skills of ISCED 5 compared to upper secondary education skills is only 15 percent, the same premium as the latter group earns relative to those with less than upper secondary education. Only advanced degrees (ISCED 5a and 6) allow one to get significantly more income before tax than with upper secondary education (+40 percent) in Denmark. This return to higher education is fairly similar to Australia, Netherlands and Norway, but higher than in Sweden.

The wide international differences in the returns to higher education (mean annual average earnings before tax) reflect a number of factors:

- skill demands in the work force (industrial structure, technology),
- the supply of workers at the various levels of educational attainment,
- minimum wage legislation – may cause the actual wage difference to be smaller than in a labour market with free mobility of wages, implying smaller differences in wages than in labour productivity,
- the coverage of collective bargaining agreements and the strength of unions,
- the range of work experience of workers with high and low educational attainment,
- the relative incidence of part-time work at different educational attainment levels,
- the division of educational expenditure upon the individual, the state and the entrepreneurs.

The earnings differentials by education do not tell us the exact return to education. Neither the net costs of higher education nor the net benefits of higher education are easy to calculate. Costs of education are not entirely borne by the individual where subsidies are given; nor is higher productivity of work only due to higher educational attainment of the individual because of the technology and managerial input associated with it.

In addition, individuals with greater innate ability (lower learning costs), tend to proceed with further education and training to a greater extent than less able ones; and they may also get higher wages than the less able ones with the same educational background (*Griliches,* 1977). Besides,

the cost of education includes not only direct costs but also opportunity cost such as foregone earnings[10].

*Table 14: Relative earnings of 25 to 64 and 30 to 44 year olds from employment by level of educational attainment and gender 1997*

*(ISCED 3/4 = 100)*

| | | Below upper secondary education ISCED 0/1/2 | | Tertiary-type B education ISCED 5B | | Tertiary-type A and advanced research programmes ISCED 5A/6 | |
|---|---|---|---|---|---|---|---|
| | | Ages 25-64 | Ages 30-44 | Ages 25-64 | Ages 30-44 | Ages 25-64 | Ages 30-44 |
| Australia | Men | 87 | 83 | 120 | 116 | 144 | 138 |
| | Women | 85 | 84 | 113 | 112 | 154 | 154 |
| | M + W | 79 | 75 | 103 | 101 | 136 | 131 |
| Denmark | Men | 86 | 86 | 124 | 121 | 139 | 139 |
| | Women | 88 | 88 | 119 | 115 | 136 | 144 |
| | M + W | 85 | 85 | 115 | 110 | 140 | 142 |
| Finland* | Men | 95 | 92 | 129 | 125 | 189 | 174 |
| | Women | 101 | 99 | 123 | 122 | 179 | 172 |
| | M + W | 97 | 96 | 121 | 117 | 186 | 173 |
| France** | Men | 88 | 88 | 130 | 137 | 176 | 175 |
| | Women | 80 | 81 | 132 | 138 | 161 | 168 |
| | M + W | 84 | 85 | 126 | 132 | 169 | 171 |
| Germany | Men | 88 | 87 | 106 | 108 | 156 | 144 |
| | Women | 87 | 84 | 111 | 110 | 156 | 159 |
| | M + W | 81 | 82 | 108 | 106 | 163 | 153 |
| Italy*** | Men | 73 | 77 | x(5A/6) | x(5A/6) | 173 | 161 |
| | Women | 76 | 77 | x(5A/6) | x(5A/6) | 129 | 133 |
| | M + W | 76 | 80 | x(5A/6) | x(5A/6) | 156 | 148 |
| Netherlands* | Men | 87 | 86 | x(5A/6) | x(5A/6) | 136 | 129 |
| | Women | 75 | 74 | x(5A/6) | x(5A/6) | 141 | 145 |
| | M + W | 84 | 84 | x(5A/6) | x(5A/6) | 137 | 132 |
| Norway | Men | 85 | 85 | x(5A/6) | x(5A/6) | 138 | 140 |
| | Women | 84 | 90 | x(5A/6) | x(5A/6) | 140 | 143 |
| | M + W | 85 | 87 | x(5A/6) | x(5A/6) | 138 | 138 |
| Sweden | Men | 88 | 88 | x(5A/6) | x(5A/6) | 135 | 135 |
| | Women | 89 | 87 | x(5A/6) | x(5A/6) | 125 | 121 |
| | M + W | 90 | 89 | x(5A/6) | x(5A/6) | 129 | 128 |
| Switzerland** | Men | 81 | 82 | 119 | 122 | 145 | 139 |
| | Women | 74 | 82 | 123 | 122 | 157 | 164 |
| | M + W | 74 | 79 | 137 | 140 | 162 | 156 |
| United Kingdom** | Men | 73 | 70 | 125 | 124 | 157 | 157 |
| | Women | 64 | 61 | 135 | 133 | 188 | 192 |
| | M + W | 64 | 63 | 125 | 125 | 168 | 172 |
| USA ** | Men | 69 | 67 | 113 | 114 | 183 | 182 |
| | Women | 62 | 60 | 127 | 130 | 180 | 191 |
| | M + W | 70 | 68 | 116 | 116 | 184 | 184 |

Source: *OECD* (2000A), p. 297. – * 1996. – ** 1998. – *** 1995.

[10] Foregone earnings are not only an important part of individual or private costs but also of social costs in terms of foregone taxes and social security benefits. The progressivity of the tax system has to be taken into account, in order to calculate the net individual and social returns to investment in education and training over the life cycle.

Another aspect, the expected duration of employment over the working life cycle, introduces a measure of uncertainty through the choice of an adequate discount factor (subjective rate of interest) of expected lifetime earnings (wage return to education and experience). The returns to education are stronger in earlier years of the life cycle and can probably be estimated more precisely; as the labour market takes over to increase human capital (experience), returns to education become less certain. Clearly, standard regression techniques cannot incorporate all information and allow inferences about all parameters.

Further factors which affect the net rate of return to education are

1. the tax system;
2. longer actual duration of education than the norm;
3. contributions to pension schemes.

The first two factors diminish the net rate of return to education, the third factor enlarges the return. All that said, the individual rate of return may actually be lower than the social rate of return, particularly in countries with solidaristic wage agreements and high welfare standards. Differences between micro and macro-economic rates of return should not get too large, however. A large positive discrepancy between individual and social rates of return may result in a higher rate of educational participation of individuals than is warranted in terms of total prosperity of the population, and a large negative discrepancy may reduce the incentive of the individual to continue with higher education thus hampering total productivity and economic growth.

Also, a differentiation of the rates of return by type of education is warranted in order to provide guidance for educational choices to individuals and to governments in formulating their educational policy. The estimated rates of return which follow should be understood with these qualifications in mind.

The outstanding international studies of private and social rates of return from education in developed and developing countries have been made by *Psacharopoulos* (1987). Although such calculations should be treated with reservation because of data deficiencies and assumptions, these have been convenient summarised as follows (*Castellanos,* 1987):

(a) rates of return to education are generally higher in less developed countries;
(b) primary education tends to yield the highest return;
(c) returns to investment in human capital are above returns to physical capital in less developed countries, while the two types of return are of almost equal magnitude in advanced countries;
(d) per capita income differences can be better explained by differences in the endowment of human rather than physical capital;

(e) investment in education contributes substantially to the rate of growth of output in most countries particularly in the less developed group; and

(f) higher education is very expensive in relation to other levels, particularly in less developed countries.

*Table 15: Private rates of return of employed persons in 1995*

| Australia | Upper Secondary | Non-University | University |
|---|---|---|---|
| | | In percent | |
| Women | 12.5 | 7.9 | 6.7 |
| Men | 7.5 | 9.7 | 10.4 |
| *OECD Average* | | | |
| Women | 16.4 | 11.1 | 12.5 |
| Men | 14.9 | 10.7 | 12.4 |

Source: *OECD* (1998A: Table A4.3).

Estimates of private and social rates of returns from university education for a number of countries, including **Australia**, show that the former are generally well above the latter for both men and women (*OECD,* 1998B: Table A4.3).

A recent Australian estimate on the basis of 1997 data put the private rate of return on investment in university education at 15 percent and the social rate of return at 16.3 percent. (*Jeff Borland, Peter Dawkins, David Johnson and Ross Williams,* 2000)

An estimation of rates of return to education for a cohort of individuals in the **U.K.** (*Dearden,* 1998), who have been followed from birth (1958) to the age of 33 (in 1991) showed that the individual rate of return for another year of schooling was typically between 5 percent to 7 percent for men and 8 percent to 10 percent for women. The results may be more refined by including variables about family background, the type of school attended, the individual ability as demonstrated in maths and reading tests, and employment variables into the standard Mincerian earnings function. Then the returns to another year of full-time schooling declined versus the benchmark of 8 percent for men and 12 percent for women. When one controlled for region of residence the returns to another year of full-time schooling fell to 7.2 percent in the case of men and 11.6 percent for women. Controls for ability and type of school, resulted in the returns to another year of full-time education to drop to 5.2 percent in the case of men and to 10 percent in the case of women. When one also controlled for family background and work characteristics (firmsize, industry, union member), the rate of return dropped to 4.8 percent for men and to 8.3 percent for women.

*Table 16: Rates of return to another year of full-time schooling*

$\ln W_{it} = \beta_0 + \beta_1 S_{it} + x_{it} + u_{it}$

*Birth cohort 1958 in employment 1991*

| | Specification | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | $x1$ | | $x2$ | | $x3$ | | $x4$ | |
| | Coef. | (S.E.) | Coef. | (S.E.) | Coef. | (S.E.) | Coef. | (S.E.) |
| | Males | | | | | | | |
| Constant | 1.076 | (0.044) | 1.335 | (0.057) | 1.364 | (0.060) | 1.235 | (0.133) |
| Years of Education ($S$) | 0.080 | (0.004) | 0.072 | (0.004) | 0.052 | (0.004) | 0.048 | (0.004) |
| Number of observations | 2,597 | | 2,597 | | 2,597 | | 2,597 | |
| $R^2$ | 0.1494 | | 0.2139 | | 0.2635 | | 0.2949 | |
| | Females | | | | | | | |
| Constant | 0.189 | (0.052) | 0.478 | (0.070) | 0.494 | (0.077) | 0.722 | (0.147) |
| Years of Education ($S$) | 0.122 | (0.004) | 0.116 | (0.004) | 0.100 | (0.005) | 0.083 | (0.005) |
| Number of observations | 2,363 | | 2,363 | | 2,363 | | 2,363 | |
| $R^2$ | 0.2502 | | 0.2878 | | 0.3131 | | 0.4138 | |

Source: *Dearden* (1998), p. 17, 19.
$x1$ = raw return
$x2$ = controlled for region of residence
$x3$ = controlled for region, ability and school type
$x4$ = controlled for region, ability, school type, family background and work characteristics
$S$ = years of schooling beyond basic school
$u$ = error term

A differentiation of rates of return to education of the birth cohort of 1958 in 1991 by the highest educational attainment level at the age of 23 showed that there were significant returns to education beyond compulsory school. The raw return to a university degree was 71 percent for men (88 percent for women) compared to individuals with no more than compulsory education. The return to A levels was 55 percent beyond that of employed persons with compulsory education as the highest attainment level (for women 56 percent). If one controlled for ability, type of school, family background and job characteristics, the return to a university degree relative to compulsory education fell to 50 percent in the case of men and to 63 percent in the case of women.

Finishing upper secondary education offered relatively high financial rewards:

- A levels, comprising on average 2½ years of full-time education beyond compulsory education, were linked to about 37 percent higher returns than compulsory education.
- The annual return to a middle vocational qualification was around 12 percent (assuming 2 years beyond compulsory education).
- The annual return for higher vocational education, assuming 3.5 years of extra full-time schooling beyond compulsory education, was also around 12 percent.

These results show that men and women with nothing but compulsory education, have very low returns for their time spent in school.

*Table 17: The returns to schooling by educational attainment level and gender*

*Earnings function:* $\ln W_{it} = \beta_0 + \beta_1 S_{it} + x_{it} + u_{it}$
*Birth cohort 1958, highest educational attainment at age 23, in employment 1991*

| | Specification | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | $x1$ | | $x2$ | | $x3$ | | $x4$ | |
| | Coef. | (S.E.) | Coef. | (S.E.) | Coef. | (S.E.) | Coef. | (S.E.) |
| | Males | | | | | | | |
| Constant | 1.685 | (0.025) | 1.880 | (0.038) | 1.790 | (0.041) | 1.656 | (0.127) |
| Highest Qualification 1981: | | | | | | | | |
| Other | 0.157 | (0.031) | 0.132 | (0.030) | 0.109 | (0.030) | 0.097 | (0.029) |
| Lower vocational | 0.284 | (0.029) | 0.270 | (0.028) | 0.216 | (0.028) | 0.194 | (0.028) |
| Middle vocational | 0.353 | (0.029) | 0.342 | (0.029) | 0.274 | (0.029) | 0.251 | (0.029) |
| A Levels | 0.552 | (0.037) | 0.506 | (0.036) | 0.405 | (0.037) | 0.376 | (0.038) |
| Higher vocational | 0.549 | (0.034) | 0.526 | (0.033) | 0.444 | (0.033) | 0.419 | (0.034) |
| Degree | 0.707 | (0.031) | 0.658 | (0.031) | 0.530 | (0.034) | 0.501 | (0.036) |
| Number of observations | 2,597 | | 2,597 | | 2,597 | | 2,597 | |
| $R^2$ | 0.2263 | | 0.2892 | | 0.3106 | | 0.3352 | |
| | Females | | | | | | | |
| Constant | 1.343 | (0.023) | 1.611 | (0.040) | 1.532 | (0.045) | 1.582 | (0.133) |
| Highest Qualification 1981: | | | | | | | | |
| Other | 0.079 | (0.030) | 0.058 | (0.030) | 0.047 | (0.030) | 0.027 | (0.028) |
| Lower vocational | 0.173 | (0.027) | 0.157 | (0.027) | 0.122 | (0.028) | 0.084 | (0.027) |
| Middle vocational | 0.374 | (0.033) | 0.356 | (0.032) | 0.302 | (0.035) | 0.229 | (0.034) |
| A Levels | 0.562 | (0.038) | 0.541 | (0.037) | 0.479 | (0.039) | 0.372 | (0.039) |
| Higher vocational | 0.671 | (0.034) | 0.655 | (0.034) | 0.606 | (0.036) | 0.452 | (0.037) |
| Degree | 0.882 | (0.032) | 0.832 | (0.032) | 0.754 | (0.037) | 0.636 | (0.040) |
| Number of observations | 2,363 | | 2,363 | | 2,363 | | 2,363 | |
| $R^2$ | 0.3333 | | 0.3702 | | 0.3788 | | 0.4447 | |

Source: *Dearden* (1998), p. 21,22.
$x1$ = raw return
$x2$ = controlled for region of residence
$x3$ = controlled for region, ability and school type
$x4$ = controlled for region, ability, school type, family background and work characteristics
$S$ = years of schooling beyond basic school
$u$ = error term

Other data sets – the Family Expenditure Survey (FES), the Family Resources Survey (FRS), and the British Household Panel Study (BHPS) corroborate the results obtained from the longitudinal data set (*Chevalier – Walker,* 2001). The availability of FES and GHS, i.e., cross section data sets, over a long stretch of years allows the investigation of the stability of returns over time. From this research one may see that:

- The rate of return to education tends to be around 6 percent and 9 percent for men and between 8 percent and 12 percent for women.
- Although men earn more than women, on average, for all levels of education, the relationship between education and wages is flatter for men than for women.

- There is a tendency for returns to education to rise in the late 1980s and early 1990s, in spite of significant increases in the higher education participation rate, very likely, because of widening differentials for skill.
- The returns to experience (age) are small for women but quite large for men.
- Returns to education are significantly lower for non-whites than for whites.
- The return to a university degree relative to A levels differs significantly by subject of study (*Harkness – Machin,* 1999):
  - Science/engineering degrees and social science/business degrees offer the highest return to further education.
  - Arts/humanities degrees have the lowest return to further education.
- Returns to degrees increased for women in Science(including medicine) and Engineering as well as in Arts/Humanities and decreased in law and others since the early 1980s.
- Returns to degrees for men increased for all subjects in the 1980s and decreased in the 1990s for all subjects except Arts/Humanities, where the return has never been significantly different from zero compared to A levels.

It is very difficult to disentangle sectorial differences in returns to education from occupational ones. Certain occupations are almost invariably public sector jobs, e.g., medical professions and teachers, and other private sector jobs, e.g., sales personnel. In any case, calculations for the U.K. suggest that there is no difference in the return to education for women in public sector jobs compared to the private sector and the difference for men is minimal (the public sector offering a 1 percent lower rate of return to another year of education)[11].

The analyses of rates of return for the U.K. so far, have only been in terms of gross returns to education, not taking income related taxes and transfers into account. Chevalier and Walker (2001) have used net earnings data from BHPS and GHS (General Household Survey) and calculated returns to education. On average net returns to education are about 20 percent lower than the corresponding gross returns. The net returns to another year of education are then 5 percent for men and 7 percent for women.

Due to the flexibility of the school system and the frequent detours from educational paths developed by educational planners it is not easy to calculate returns to an additional year of education for the **Netherlands**. Therefore research in the Netherlands (*Koning,* 1998, *Odink – Kunnen,* 1998) tends to differentiate economic returns to an additional year of schooling by different educational paths, e.g., lower general secondary education (two streams as in Austria – comparable to the AHS and Hauptschule) to higher general secondary education (HAVO, VWO,

[11] For a differentiated account see *Disney et al.* (1998).

comparable to the streams of AHS and BHS in Austria) or to intermediate vocational school (MBO, comparable to BMS in Austria), or apprenticeship. The transition from upper secondary to tertiary education may also follow different trajectories, e.g., from higher general secondary education (VWO/HAVO, i.e., AHS in Austria) to university (WO) or higher professional education (HBO, Fachhochschule) or from intermediate vocational education (MBO) to higher professional education (HBO, Fachhochschule).

The calculations by Koning and Odink – Kunnen show that certain paths have substantial returns to education, in particular those in upper secondary general education streams, who continue with higher vocational/professional education (HBO). Transferred to the Austrian system it would mean that graduates from AHS and BHS, who continue with Fachhochschule, have the highest rate of return to education, i.e., 10 percent to 12 percent more than the group with nothing but compulsory education. The calculations are based on cross-sectional data for the year 1990.

Persons who follow less demanding educational streams, but who still take the 'fast' route, i.e., no detours in other types of education than the ones originally planned for intermediate achievement levels, do also fairly well in relation to compulsory school leavers. They received on average a rate of return on education of 3 to 5 percent.

No positive return to education beyond compulsory education was found in case of medium vocational education and training. These results are similar to Austria (mittlere Fachschule und Lehre).

Since the real long-term capital market interest rate in Holland amounted to some 2 percent in the 1980s, one may argue that further education was cost-effective.

*Table 18: Rates of return to education by educational trajectory, 1990*

*Some rate of return calculations in the Netherlands*

| Study | *de Boer – van Ingen* (1980) | *Odink – van Breemen* (1983) | *Koss-Fiszer* (1989) | *NEI* (1994) | |
|---|---|---|---|---|---|
| Year of reference | 1972 | 1979 | 1985 | 1990 | 1990 |
| Income difference fully attributed to education | Yes* | No** | Yes* | Yes* | No** |
| | | | Rates of return to education in percent | | |
| Return to upper secondary education – higher vocational education path | 7 to 9 | 3 to 4 | 9 | 5 | 2 |
| Return to upper secondary education – university education path | 11 to 13 | 6 to 7 | 13 | 5 | 3 |
| Lower vocational education followed by intermediate vocational education | | | 8 | 7 | 4 |
| Lower general secondary education followed by intermediate vocational education | | | 8 | 1 | 0 |

Source: *Koning* (1998), p. 65. – * Based on the assumption that the income differences between individuals are solely the result of education (100 percent). – ** Based on the assumption that only 60 percent of the income differences between individuals are the result of education.

According to *Groot* (1992), rates of return to higher education relative to compulsory educational attainment levels were stable in the period 1965-1985. Calculations by *Odink – Kunnen* (1998) show that the rates of return to university education fell from about 12 percent in the early to mid 1980s to 8 percent in the early 1990s, the turning point having been in 1989. Returns to HBO education (Fachhochschule), have declined over the same time span from originally 9 percent to 4 percent.

This is not unusual as *Psacharopoulos* (1985) points out. A decrease in the returns to higher education from 11 percent to 5 percent could be observed in the USA between 1940 and 1976; in the 1980s a lower turning point has been hit, however, and returns to higher education have picked up again reaching more than 12 percent in 1995.

*Hartog* (2000) points out that the mismatch between educational skills supplied and demanded may account for diverging trends. The argument is that at any point in time the realised matches between jobs and the skill requirements of these jobs and the actual skills supplied by the employee may differ to a certain extent. Even when allowing scope for substitution of different levels and types of education, there may be increasing mismatch over time between job requirements and skills acquired from schools, i.e., distributions of skills supplied by schools, which may depreciate over time as a result of demographic and technological ageing. A certain amount of overeducation and of undereducation may arise, overeducation occurring when actual schooling is higher than required, and undereducation when the contrary holds. The terms of overeducation and undereducation are referring to education as an input in the economic production process and thus take a productivity/efficiency point of view; the social or consumption aspect of education is not taken into account.

According to *Hartog* (2000) returns to overeducation are positive but smaller than to required education; returns to undereducation are negative, i.e., there is a penalty to pay for undereducation. It tends to be lower than the shortfall of returns due to overeducation.

There is convincing evidence that the incidence of overeducation and undereducation fall with increasing age and experience. This may come about because an overeducated person may change jobs until the required and actual skills match; on the other hand the undereducated employee will get enterprise specific training until the match is satisfactory for both sides (wage maximising mobility behaviour). Thus one would expect that wages are related to educational attainment only in the case of labour force entrants, the further one moves away from the external labour markets the less can be expected that wages correlate with educational attainment and more with experience. Phases of unemployment will likewise complicate the picture of returns to education.

Thus changes in the distribution of skills on the supply side of the labour market and of skill requirements on the demand side may account for a falling or rising trend in returns to education in the different countries concerned. To quote *Hartog* (2000, p. 141): "The returns to education

depend on the job, and hence, the earnings difference between individuals with different education is not constant." One should therefore not only look at mean levels of returns to education but also at dispersions.

*Table 19: Discounted lifetime income for selected types of education in Denmark (1995)*

| | Discounted lifetime income (in 1,000 KR) | | Index (unskilled workers = 100) | |
|---|---|---|---|---|
| | Men | Women | Men | Women |
| *Unskilled workers* | | | | |
| Compulsory education | 3,262 | 2,558 | 100.0 | 100 |
| *Vocational education* | | | | |
| Bank clerk | 4,511 | 3,561 | 138.3 | 139.2 |
| Shop assistant | 3,973 | 2,845 | 121.8 | 111.2 |
| Clerical worker | 4,017 | 3,251 | 123.1 | 127.1 |
| Bricklayer | 3,588 | | 110.0 | |
| Carpenter | 3,772 | | 115.6 | |
| Mechanics | 3,848 | | 118.0 | |
| Black smith | 3,908 | | 119.8 | |
| Tourist-service | | 2,732 | | 106.8 |
| Electrician | 3,914 | | 120.0 | |
| Other | 3,643 | 2,947 | 111.7 | 115.2 |
| *Short-cycle higher education* | | | | |
| Electrician | 4,203 | | 128.8 | |
| Other technical educations | 3,798 | | 116.4 | |
| Other | 4,109 | 3,739 | 126.0 | 146.2 |
| *Medium-cycle higher education* | | | | |
| Teacher | 3,707 | 3,369 | 113.6 | 131.7 |
| Nurse | | 3,145 | | 122.9 |
| Engineer | 4,772 | | 146.3 | |
| Other | 4,746 | 3,221 | 145.5 | 125.9 |
| *Long-cycle higher education* | | | | |
| Civil engineer | 5,167 | | 158.4 | |
| High school teacher | 3,782 | 3,184 | 115.9 | 124.5 |
| Lawyer | 5,336 | 4,170 | 163.6 | 163.0 |
| Medical doctor | 5,506 | | 168.8 | |
| Social and humane science | 5,524 | | 169.3 | |
| Natural science | 4,500 | 4,105 | 138.0 | 160.5 |
| Other | 4,252 | 3,538 | 130.3 | 138.3 |

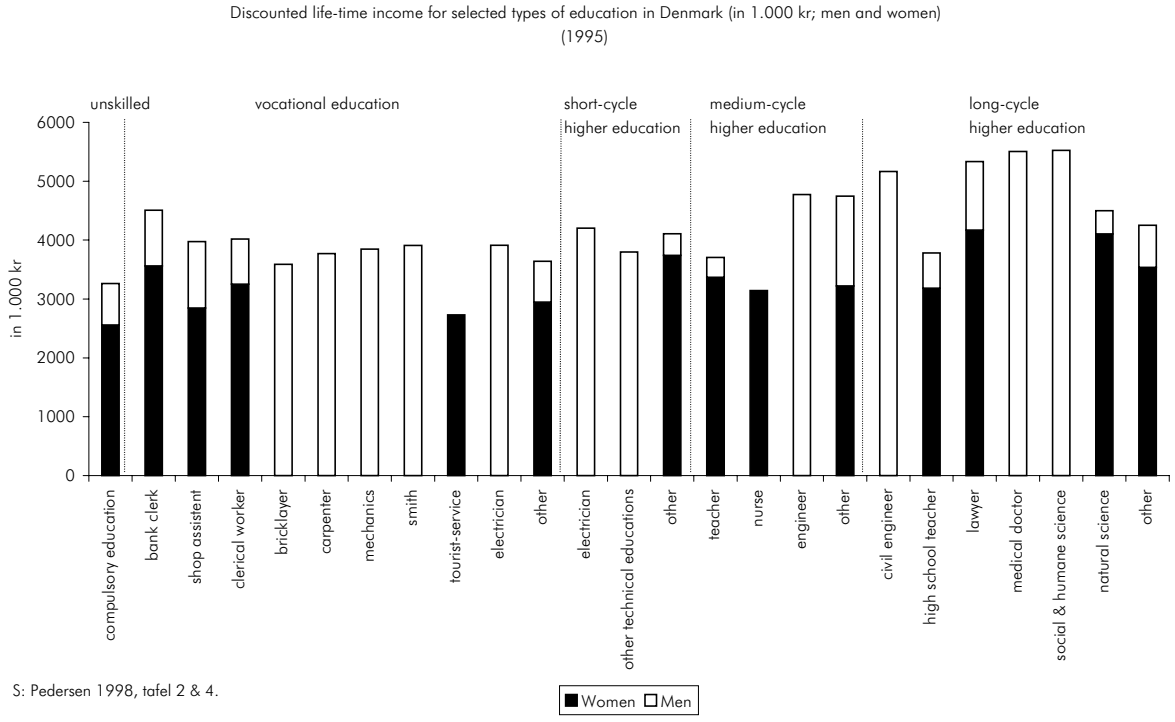
Source: *Pedersen* (1998), tafel 2/4.

Calculations by the Ministry of Finance of **Denmark** on the returns to education to individuals in the context of lifetime earnings (*Tove Birgitte Pedersen,* 1998[12]) show that it pays to continue education beyond compulsory education (Folkeskole) not only because of higher wages but also because of a higher probability of continued employment over the working life cycle.

[12] The analysis is based on a sample of 3 percent of the resident population (170,000 persons), which is matched with registry data on the basis of the social security number; only labour income net of tax has been taken as the basis for returns to investment in education.

The lower lifetime earnings of women relative to men by educational attainment are to a large extent due to fewer employment interruptions of men[13]. The higher lifetime earnings of women with higher levels of education relative to unskilled women is also to a large extent the result of higher unemployment and other periods of employment interruptions of unskilled women. Unskilled workers take recourse to disability pensions and early retirement to a larger extent than people with higher skills. This is an important factor behind the lower lifetime earnings of unskilled workers.

*Graph 3: Discounted lifetime earnings of adults (18-66) by educational attainment (1995)*




S: Pedersen 1998, tafel 2 & 4.

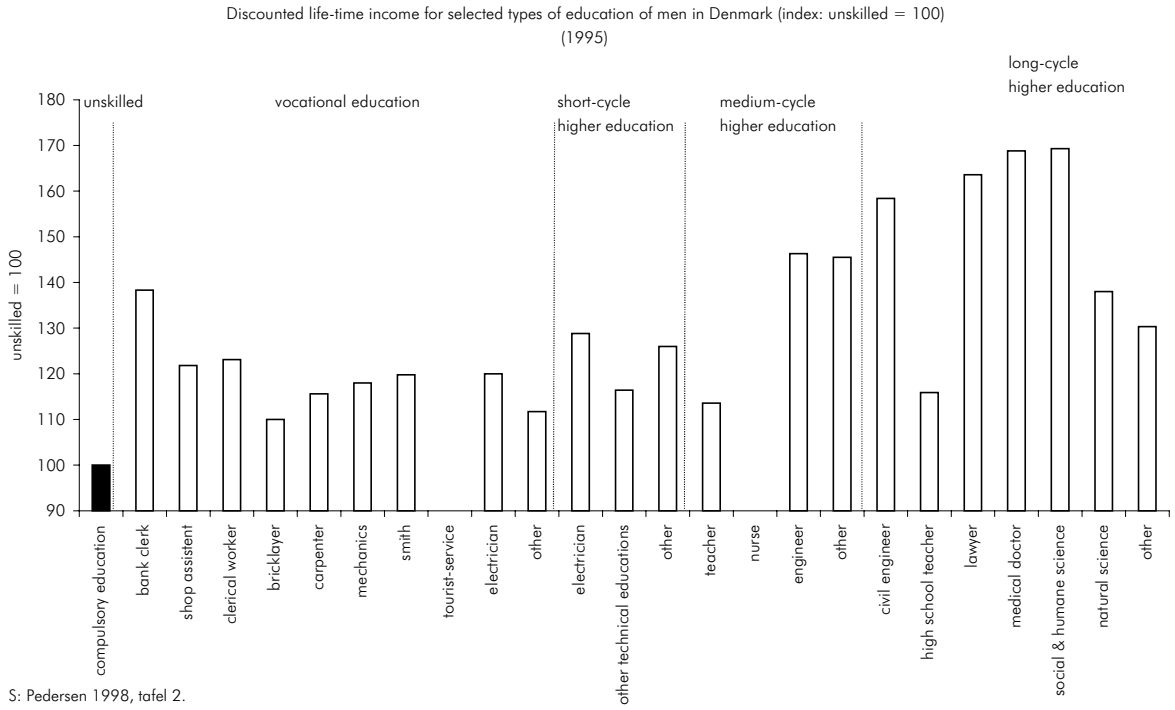
The graph provides a pervasive picture of the higher lifetime earnings of men in practically all educational groups. In addition Denmark has a considerable gender segmentation of employment by education and thus also by occupation. The sample does not, therefore, provide statistically significant results for lifetime earnings of women with medium skill vocational (apprenticeship) education. On the other hand, hardly any men go into tourist services.

The additional income in a working life context versus compulsory education is highest with long university education in medicine, law/economics/business studies, and civil engineering

[13] An analysis of the impact of career interruptions of women due to childcare (*Gupta – Smith,* 2000) show that the negative effect of children on mother's wages disappears after some time, but there are large differences between educational groups and the public and private sector. Children have only transitory effects on the earnings potential of their mothers.

(60 percent to 80 percent more for men), followed by people with vocational technical and commercial education. University education in the humanities does not offer higher returns to education and work than medium vocational education and training.

*Graph 4: Relative rate of return of higher education (discounted lifetime income) of men (1995)*



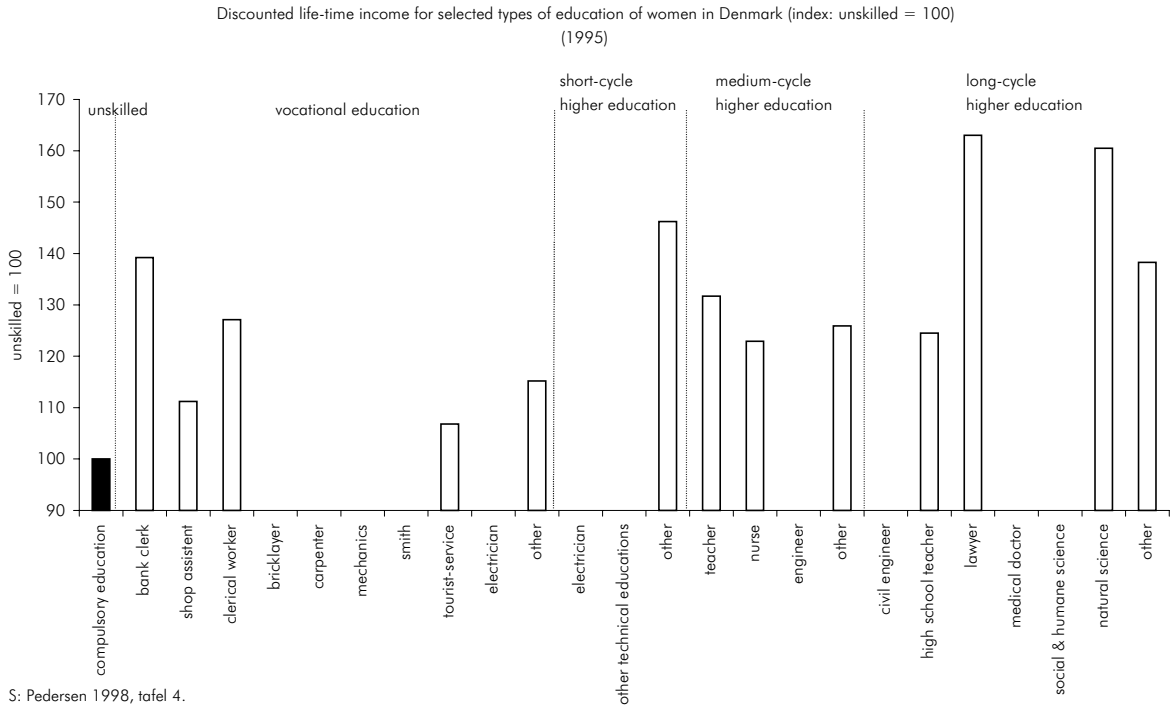

S: Pedersen 1998, tafel 2.

## *Contribution of the educational system to labour productivity*

The expected benefit to society of post-compulsory education, is a higher level of productivity. It is not a simple matter to make comparisons of labour productivity over time and across countries (*Biffl,* 2001). Differences between GDP per capita, an indicator of the living standards of a country, and per working hour, an indicator of the competitiveness of the economy, arise, apart from the socio-economic development level of the economy, the technology and product-mix, the differences in the skill level of the work force, and from differences in:

- annual working hours per worker,
- the proportion of employed persons in the labour force,
- the activity rate and
- the proportion of the population of working age in total population.

*Graph 5: Relative rate of return of higher education (discounted lifetime income) of women (1995)*




S: Pedersen 1998, tafel 4.

If we look at the differences of GDP per capita, the U.K. had, with an output (valued at current market prices using PPPs) of 21,218 USD in 1998, a somewhat lower standard of living than Austria with 23,073 USD and the Netherlands (22,887 USD). The Netherlands and Austria are in the middle of a ranking of OECD countries by GDP/capita. The countries with the highest GDP/capita are, apart from the special case of Luxembourg, the United States (30,394 USD, +30 percent versus the U.K.), Germany (27,569 USD, +23 percent) and Denmark (26,297 USD, +19 percent). GDP per capita in the U.K. was about 10 percent below the OECD average.

GDP per employed person is 3 percent lower in the U.K. than in Austria, equal to Sweden and Canada, and quite a bit lower than in the United States (–24 percent). The differences in productivity arise, apart from technological and economic development levels and human and physical capital endowment, from a different age structure of the population, from different activity and employment rates. Differences in hourly labour productivity do not seem to be great. Even though the actual working hours per worker are known only with a high degree of uncertainty, evidence suggests that Austria lags behind the United States by some 6 percent to 10 percent, is fairly even with Denmark, the Netherlands and Japan and surpasses the EU average by some 15 percent.

*Table 20: Employment, productivity and per capita output (GDP), 1998*

*Output valued at current market prices using PPPs, USD*

| | Output per employed person | Output per capita |
|---|---|---|
| Luxembourg | 64,742 | 34,701 |
| United States | 62,214 | 30,394 |
| Germany | 55,002 | 27,569 |
| Norway | 49,117 | 26,611 |
| Switzerland | 52,426 | 26,297 |
| Denmark | 48,682 | 26,297 |
| Canada | 47,112 | 24,106 |
| Japan | 65,053 | 24,103 |
| Belgium | 52,562 | 24,003 |
| Austria | 48,781 | 23,073 |
| Netherlands | 52,563 | 22,887 |
| Australia | 49,848 | 22,697 |
| Ireland | 55,585 | 22,429 |
| France | 57,440 | 22,089 |
| Italy | 62,187 | 21,999 |
| Finland | 50,474 | 21,677 |
| United Kingdom | 47,186 | 21,218 |
| Sweden | 47,029 | 21,162 |
| New Zealand | 40,193 | 17,801 |
| Spain | 50,129 | 16,743 |
| Portugal | 31,475 | 15,242 |
| Greece | 38,728 | 14,411 |

Source: *OECD* (2000B), p. 17.

One has to bear in mind that a direct linkage of an individual's income or wage with a particular productivity level, is difficult and conceptionally problematic. In any complex work relationship, the output is the result of a division of labour, in association with physical capital and a particular range of technology, in which individuals are allocated to those tasks for which they are trained to do most effectively. The output is then more than the sum of all individual inputs and can thus not be attributed to a single unit but rather to the aggregate. As a result one may distinguish productivity levels at the micro-level for enterprises, at the meso-level for industries, and at the macro-level as done in Table 20. In that context one has to keep in mind that increased productivity may show up in lower product prices. For competitiveness, particularly against the external economy, to be sustained, it may be necessary for increased productivity to be passed on in lower prices to an extent dictated by the degree of competition. Thus some of the increased productivity due to education and training is passed on to the individual in increased wages, some of it is kept by firms and some of it is passed on to the consumer in lower prices.

### *Social rates of return*

The individual rates of return may differ considerably from the social rates of return. The most sophisticated study of individual and social rates of return in the countries under comparison has been undertaken in Denmark.

*Hoj – Ransby* (1996) calculate social rates of return of post-compulsory education for Denmark in three steps of cost-benefit analyses.

1. Net lifetime income for persons with more than compulsory education are calculated, i.e., direct and indirect costs (opportunity costs) of higher education are deduced, and compared with lifetime income of unskilled workers[14].
2. The costs to society of education beyond compulsory education are calculated[15].
3. The internal rate of return to higher education is calculated. It shows the benefit of educating an additional person with average characteristics in a particular type of post-compulsory education, assuming average costs.

Table 21 shows that the longer the period of education the higher the average income, an exception being the education of nursery teachers. The variation of income between occupations, which require long university education, is more pronounced than in the case of medium skills (vocational and short cycle higher education).

The cost of post-compulsory education increases with the duration of education. The cost components differ by type of education; student grants are a particularly important cost component in the humanities (high school teachers) due to frequent interruptions of education, high drop-out rates etc.

One way of judging the benefits of investment in higher education to society is by comparing the rate of return by type of education with the rate of return from an alternative investment of capital resources. Hoj and Ransby calculate the relevant rate for comparison at 5 percent (real interest rate minus the growth rate of real wages). They state: " If the calculated (social) internal rate of return is larger than 5 percent for a given programme of education, it is beneficial to society to invest in that type of education" (p. 15).

By those criteria all courses of longer education were beneficial to Danish society with the exception of short cycle higher education and masters degree studies in humanities (high school teachers). The economic return of vocational training is then not much different from higher degree university education, despite large differences in life-time earnings. This is due to the fact that

[14] Potential lifetime income from employment by educational groups is estimated (actual lifetime income may be less due to periods of unemployment) and compared with the potential lifetime earnings of unskilled workers (persons with no more than compulsory education). The differences in unemployment, participation, disability and early retirement rates by educational group are not taken into account in the average earnings differences over the working life cycle (16 to 60 year olds). Future income is discounted by the real interest rate adjusted for the growth rate in real incomes, i.e., no difference in real income growth by educational group is assumed.

[15] The taximeter-model facilitates the calculation of costs by type of education. The rates per student differ by type of education. They are published in the state budget. The cost of repetition and drop-outs are added to the costs of upper secondary education and beyond.

vocational training is relatively cheap, partly because these courses are substantially shorter and because students occupy institutions only part-time, the other part of education taking place in enterprises.

*Table 21: Increase in lifetime income, cost per student, 1995 prices, economic rates of return to society*

| | Years in education after compulsory schooling | Increase in lifetime income (in million DKR) | Direct and indirect costs per student (in 1,000 DKR) | Economic rate of return |
|---|---|---|---|---|
| Unskilled | 0 | 0.0 | 0.0 | 0 |
| *Vocational education* | | | | |
| Shop assistant | 3 | 0.9 | 52.3 | 8.9 |
| Clerical worker | 3 | 1.3 | 52.3 | 11.4 |
| Black smith | 4 | 1.3 | 146.4 | 8.6 |
| Mechanic | 4 | 1.0 | 158.5 | 6.5 |
| Engineer | 4 | 2.0 | 129.2 | 14.5 |
| Bricklayer | 4 | 0.9 | 125.2 | 6.5 |
| Electrician | 4 | 1.0 | 121.5 | 7.5 |
| Construction worker | 4 | 0.7 | 90.4 | 5.5 |
| *Short-cycle higher education* | | | | |
| Nursery teacher | 4.5 | – 0.4 | 276.4 | – 2.5 |
| Technician | 4.5 | 0.9 | 295.1 | 2.2 |
| *Bachelor's degree* | | | | |
| Teacher | 7 | 2.0 | 427.3 | 4.6 |
| Business economist | 6 | 7.8 | 378.7 | 14.0 |
| Engineer | 6 | 5.2 | 495.5 | 9.3 |
| *Master's degree* | | | | |
| High school teacher | 9 | 3.3 | 1026.9 | 3.9 |
| Economist | 8 | 11.6 | 417.2 | 15.3 |
| Lawyer | 8 | 7.6 | 417.2 | 11.4 |
| Engineer | 8 | 7.7 | 678.1 | 9.5 |
| Medical doctor | 9 | 9.7 | 900.7 | 10.5 |

Source: *Hoj – Ransby* (1996), p. 14.

## 6. The concept of lifelong learning

There is growing recognition across OECD countries of the importance of investment in human capital through lifelong learning. The importance of lifelong learning 'as a determinant of long-run growth in a knowledge-based economy' has been endorsed by OECD Labour Ministers. Adaptation of the knowledge and skills of society can only partially be achieved by the adaptation of curricula of initial education. Continuing education and training is necessary to adapt the skills of adults to the changing needs of an economy in progress and to repair or complement previously received education and training (second chance).

The concept of lifelong learning is not new. An *OECD* (1973) publication proposed lifelong learning (recurrent education) "to provide better opportunity for individual development, greater education and social equality, and better interplay between the education and other social sectors, including a better contribution to the potential for necessary economic growth" (*Recurrent*

*Education Strategy for Lifelong Learning*, p. 48). But the context, in which the OECD countries are discussing lifelong learning now is new (see *Hake et al.,* 1999, *Baaijens et al.,* 1998). It is an element of EU policy, which strives to adapt the socio-economic structures of the member countries to the needs of a global economy and of an information society.

The Netherlands have participated in the International Adult Literacy Survey (IALS), which provides relatively recent internationally comparable information on the incidence, duration and nature of continuing adult education (*OECD,* 1998A, pp. 204-220). According to this survey 36 percent of all persons between 25 and 64 participated in the 12 months preceding the survey in some form of education or training (1994-95). This participation rate was equal to the one in Australia. It was, however, somewhat lower than in Switzerland, the United States and the United Kingdom, which had participation rates ranging from 42 percent to 45 percent. The OECD country with the highest participation in education and training was Sweden with 54 percent. The major part of education and training tends to be job-related.

Participation in education and training is declining with age. While 46 percent of the 25-34 year olds participated in some education and/or training measure in the Netherlands, only 16 percent of the 55-64 year olds undertook such activities. This pattern is fairly universal as international comparison shows.

The pattern by gender is not so clear, however. While Dutch women participate to a lesser extent in education and training than men (34 percent versus 38 percent), similarly in the United Kingdom (44 percent versus 46 percent), Switzerland (40 percent versus 44 percent), and Australia (34 percent versus 37 percent), the opposite is true in the case of Sweden (56 percent versus 53 percent). In contrast, no gender difference was recorded in the United States.

The mean number of hours of education and training per adult is higher in the Netherlands than in the other countries.

The proportion of the population between 25 and 64, which engaged in continuing education and training (CET)[16] during the year before the survey was higher for employed than for unemployed (43 percent compared to 39 percent).

Research shows that initial education has an important role to play in lifelong learning. People who have completed general upper secondary education take part in enterprise training to a larger extent than people with vocational upper secondary education or apprenticeship training. This is one reason for the high returns to the general initial education stream over the working life cycle compared to other educational paths.

[16] CET refers to all kinds of job related education and training, organised, financed or sponsored by authorities, provided by employers or self-financed.

The IALS survey indicates a clear positive correlation between continuous education and training and the educational attainment level of the population. While only 17 percent of all 25-64 year olds with less than lower secondary education undertook some education and training in the 12 months preceding the survey, 28 percent of those with compulsory education did so, 42 percent of those with upper secondary education and 52 percent of university graduates.

*Table 22: Participation rate in education and training of the 25-64 year olds by gender and age group 1994-95*

| | | Age 25-34 | Age 35-44 | Age 45-54 | Age 55-64 | All |
|---|---|---|---|---|---|---|
| Australia | M + W | 42 | 40 | 32 | 20 | 36 |
| | Men | 46 | 40 | 33 | 20 | 37 |
| | Women | 38 | 41 | 32 | 20 | 34 |
| Netherlands | M + W | 46 | 41 | 32 | 16 | 36 |
| | Men | 51 | 42 | 36 | 13 | 38 |
| | Women | 42 | 40 | 29 | 20 | 34 |
| Sweden | M + W | 56 | 61 | 58 | 38 | 54 |
| | Men | 57 | 58 | 54 | 37 | 53 |
| | Women | 54 | 64 | 62 | 40 | 56 |
| Switzerland | M + W | 52 | 45 | 39 | 25 | 42 |
| | Men | 55 | 43 | 39 | 29 | 44 |
| | Women | 47 | 46 | 40 | 22 | 40 |
| United Kingdom | M + W | 54 | 54 | 42 | 23 | 45 |
| | Men | 57 | 52 | 44 | 23 | 46 |
| | Women | 51 | 55 | 40 | 24 | 44 |
| United States | M + W | 46 | 46 | 44 | 28 | 42 |
| | Men | 45 | 49 | 45 | 23 | 42 |
| | Women | 46 | 44 | 43 | 32 | 42 |

Source: *OECD* (1998), p. 214.

Unfortunately, Denmark and Austria have not participated in the International Adult Literacy Survey (IALS), which provides relatively recent internationally comparable information on the incidence, duration and nature of continuing adult education (*OECD,* 1998A, pp. 204-220). The latest internationally comparable data available for Denmark date back to 1991 (*OECD,* 1995). Then 15 percent of the Danish employed population between 25 and 64 engaged in continuing education and training (CET)[17] during the 4-week period preceding the national survey. This was slightly more than the United Kingdom at approximately that point in time (1992). The proportion of the employed engaged in CET increased with the educational attainment level of the individual, a feature typical for all countries. It amounted to 25 percent of the work force (aged between 25 and 64) with tertiary education, 14 percent of the work force with upper secondary education, and 6 percent of the work force with primary and lower secondary education (*OECD,* 1995, p. 158). Further education and training is offered to or taken up by younger and middle aged

[17] CET refers to all kinds of job related education and training, organised, financed or sponsored by authorities, provided by employers or self-financed.

workers/employees to a larger extent than by older ones (17 percent of the 25-34 and 35-44 year olds compared to 11 percent of the 45-64 year olds.

On Denmark's own account (*OECD,* 1997, pp. 103-122) adult education and training has been given budget priorities since the early 1980s. Adult education is administered by labour market centres (AMU), which update the skills of the work force, by adult education centres (VUC), which allow adults to complete their education, and by folk high schools, which foster cultural and social activities. If one takes all these educational efforts into account (public plus private resources), Denmark is in the top rank of countries giving CET to their work force (20.6 billion DKR in 1995 at current prices, i.e., 2.1 percent of GDP[18]). Public expenditure is supplemented by education and training expenditure of enterprises and employees. Of the total expenditure on education and training in 1995 only 1 percent was out of participant funds, 29 percent were paid by enterprises, the rest by the public sector, half and half from general taxation and earmarked contributions. Paid educational leave (for up to 1 year) is the most frequent type of support granted to adults for education and training.

The objective is to increase the vocational competence of the work force; for higher education (medium and long term tertiary education) the user is required to pay a fee. The motives for public funding of adult education is the same as for initial education, in particular upskilling of the work force to increase productivity of labour and to counter marginalisation of certain groups of workers. Adult education and training was stepped up in the late 1980s and 1990s to increase regional and occupational mobility.

In the 1990s, the awareness of a rising mismatch of labour demand and supply by skills as a result of the ageing of the work force, has given new impetus to the further development of adult education and of supporting innovations in the concept of lifelong learning. The reform of adult education is an integral part of the labour market reform of 1996.

A recent skill audit in England (*J. Hillage et al,* 2000) revealed that, apart from deficits in core skills, one in five adults has low levels of literacy and almost half have low levels of numeracy. It is no wonder that the Government has placed great emphasis on basic skills training for adults. Local Education Authorities, which are part of local government, are responsible for local adult education. There were over one million enrolments in 1998. A recently formed Learning and Skills Council is responsible for all education and training of young people and adults, including the funding of Local Education Authorities. The Workers' Educational Associations have a long history of involvement in adult education and continue to do so. It is not a lack of funds or institutions to provide adult education on a continuing basis. It is rather a matter of a sufficient number of those who need further education and training being prepared to find the time and effort to take advantage of the facilities.

[18] This amount of money is very high by international standards; it may include subsidies to sport clubs and other associations which foster cultural life and social cohesion. For more details see *OECD* (1997), p. 107.

The Labour Force Survey cited above (*J. Hillage et al,* 2000) found that although learning activity among adults is rising, it seems to be concentrated mainly among younger people, those with high levels of initial education, and those in work (especially in high level occupations). It seems that those with poor educational backgrounds, stay away from prospects of improving their position. The barriers facing many such persons include financial, time, negative attitudes to education and training, and lack of confidence. One of the main challenges to adult education is how to draw those who need it most but are least interested in it.

To remedy this deficiency, it is proposed to double, by 2002, the number of people having the opportunity to improve their basic skills because such skills are fundamental to all future learning.

Of particular interest is the establishment recently of a novel institution, the University for Industry (UfI) to act as a one-stop-shop network for advice about the courses which are available and which would suit the learner's particular needs. The UfI is accessible through the various electronic media as well as by personal call in a variety of places. Extensive advertising will make this facility widely known and could be expected to stimulate the demand for learning. Its immediate priority targets will be basic skills, information technology skills, the management of SMEs, and the skill needs in specific industries and services.

In addition, the 'National Skills Task Force', established to assess the economy's future skill needs, to which reference was made above, will disseminate such information to the UfI and other relevant institutions in order to overcome skill shortages.

In Australia, the training and re-training needs, particularly of prime age and mature-age workers, raise the issue of lifelong learning. There is implicit in the objectives of the Australian National Training Authority's objectives the development of a 'training culture' and lifelong learning, both necessary ingredients for travel along this route. The question arises whether the Australian education and training infra-structure is adequately equipped for such an objective.

This gives rise to the question of whether a sufficient proportion of the workforce has the necessary qualities or commitment to engage in lifelong learning. This calls not only for such persons to have 'a love of learning and the skills of learning to learn', to use the words of the OECD, but also, as in the case of the U.K., to have a sufficient competency basis to acquire new skills. It follows that what is done by way of learning in the transition phase should have a time frame which goes beyond the immediate employability of young people. In this connection, a solid basis for lifelong learning, calls for the development of core skills which will enable learners to acquire new skills more easily. These include the 'three Rs' – reading, writing and arithmetic – as well as problem-solving and applied skills, social and communications skills, personal development, and a facility and motivation to learn.

# 7. Concluding observations

It is possible to conclude from international studies that although the precise figures are not reliable, private and social returns from investment in education and training are generally positive; and that enterprise investment in education and training can generally be expected to yield positive outcomes to productivity and pay. It was also found that to yield optimum outcomes, such investment in human capital must be associated with competent management, able to apply appropriate technology and work practices in the use of its labour force.

Furthermore, it needs to be stressed that more training as such does not necessarily equal more employment. The volume and range of skills being promoted should match the demand for them. An essential factor in a successful education and training programme is a general economic policy that will ensure adequate aggregate demand.

These considerations relate to the objectives of producing an economy capable of growing at a pace sufficient to satisfy community expectations, providing full employment and the means to ensure that those who are at risk of being socially marginalised or excluded for want of adequate skills, are able to share in the general growth of the economy and incomes. However, it should be understood that there is more to education than securing work and income.

These are necessary conditions for a civilised, stable and humane society. But there is a further requirement for such a society, namely, providing people with the opportunity of achieving higher intellectual, aesthetic and spiritual qualities. No educational system is complete without concern for it. Although much emphasis in this Report has been on vocational education and training, especially in relation to the U.K. and Australia, this additional objective gives point to the need not only of vocational education but also of general education at all stages of the learning process.

There is no question that compared to the 1980s, there has been a considerable improvement in the outcomes of the education and training system in all four countries examined as reflected in a number of indicators. There has been a rise in upper secondary school retention and completions rates; and in post school education and training participation rates, in enterprises and in tertiary learning centres. The initial transition to work is beginning later and taking longer. However, problems still exist which, if not attended to, will result in high unemployment and low economic growth.

One of the main problems identified in this study, particularly in the U.K. and Australia, relates to a sizeable proportion of young people – teenagers and young adults – who are at risk of going through a good part of life, not having stable jobs, suffering frequent and protracted unemployment and having to subsist on low incomes, many being excluded from economic progress. A common characteristic of this group is their limited educational attainment, usually short of completing upper secondary education or its equivalent, and their non-participation in learning following initial education. Their literacy and numeracy deficiencies, which originate at the

school level, are an important factor in their chequered employment history. Many in this group also have economically and socially disadvantaged backgrounds as well as other handicaps to which reference has been made. In this connection, attention has also been drawn to the particular problems of Indigenous Australians and those with non-english speaking backgrounds, whose unemployment problem is much greater than that of the rest of the population.

The teenagers of today are the adults of tomorrow; and they carry their unattended problems into adulthood. It is not surprising that scholars in the field of education have laid considerable stress on the importance of attaining higher retention rates in upper secondary education by providing the necessary inducements to students to complete this phase of education.

While a higher rate of retention at the upper secondary school level should be the aim of education policy for the present and the future, there is also pressing need to rescue those who have not had the benefit of such a policy and have already 'fallen through the cracks'. This paper has referred to proposals for dealing with this group. The economic cost of such a rescue operation is likely to be greater than the economic benefit. But in a humane and civilised society, social costs and benefits should be the calculus of such operation.

In both the U.K. and Australia, the main skills deficit in vocational skills has arisen from a neglect of this area of education and the traditional perception that such education is 'second best' to general or academic education. Education policy in recent years has been driven by the need to change this perception and to provide greater and more effective facilities for vocational education.

For the Netherlands, despite the impressive economic recovery in recent years, the more immediate challenge of the education system is to ensure that not only the unduly large supply of unskilled labour but also the high proportion of part-time workers, especially women, are willing and able to acquire the skills needed for their absorption into full-time employment and better wages.

The sensitivity of Danish education policy to the prospects of greater private and social returns from education, is reflected in education expenditure being maintained despite the tightening up of budgetary policy for reasons of fiscal discipline in order to check inflationary tendencies. In 1997, the proportion in GDP of Direct Public Expenditure on educational institutions for Denmark is the second highest among OECD countries, being just below that of Sweden. The same applies to total expenditure including private expenditure and subsidies. These figures mark a significant increase since 1990. International comparisons must be viewed with some reserve because demographic and cost-effective considerations may account for some of the differences. Moreover, educational systems may not be readily transferred internationally. But it is safe to say that the reforms in the education system, a system which used to be similar to the one in Germany and Austria, bring the Danish system closer to the Anglo-Saxon countries.

Further, it is necessary to be guarded in drawing any firm conclusions about the positive effects of recent educational reform from the improved economic position of Denmark, lower unemployment and its high productivity. It takes time for the full impact of such reforms as have been undertaken to be manifest in improvements in the economy. More importantly, it is difficult to isolate the effects of educational reform from other economic initiatives and the turnaround in the world economy. Nevertheless, the cost/benefit figures provide some confidence in the positive economic effects of education and training. This is particularly important in the case of Denmark because the accepted social policy of a high minimum wage and generous welfare benefits, make an upgrading of educational attainment and skills, particularly at the lower end of the labour market, essential if economic growth and international competitiveness is to be sustained.

Thus all four countries examined face a common problem of providing the right balance of education, especially to young people on the verge of entering the labour market; and continuing facilities for re-training for those already in the workforce. In this connection, the OECD should have the final say:

An *OECD* (1999A) study, focussing on the group likely to drop out of upper secondary education, has set out certain basic policy goals to deal with their problems of transition to working life. These include:

– High proportions of young people completing a full upper secondary education with a recognised qualification for either work, tertiary study or both.

– High levels of knowledge and skill among young people at the end of the transition phase.

– A low proportion of teenagers being at the one time not in education and unemployed.

– A high proportion of those young adults who have left education having a job.

– Few young people remaining unemployed for lengthy period after leaving education.

– Stable employment and educational histories in the years after leaving upper secondary education; and

– an equitable distribution of outcomes by gender, social background and region.

The same OECD study (12 *et seq*; 114) also suggests certain key ingredients for a 'successful transition system' which may be summarised as follows:

– A healthy economy, where jobs are plentiful and the labour market is 'youth friendly'.

– Well organised and clearly defined and flexible pathways, whether apprenticeship, school-based vocational or general education, that connect initial education with work and further study.

– Tight safety nets for those at risk in one or more ways – by preventing early drop-outs from upper secondary education or its equivalent; by early intervention to rescue those who have dropped out; by an effective apprenticeship system; by active labour market programmes; and ensuring effective integration of education, labour market and welfare policies and well-managed delivery systems.

– Good information and guidance generally and on personalised basis for those at risk.

– Effective institutional processes involving co-operative efforts by governments, educational institutions, central, regional and local, employers and their associations, and trade unions.

The *OECD* (1999A:20) warns that there is no single answer to what constitutes an effective solution to the transition problem, nor to what particular countries should do to deal with their problems. It says:

*The key ingredients of effective transition systems can work in different ways and in different circumstances to achieve success. National cultures, traditions and institutions will all influence the particular combinations that are effective.*

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# Chapter 1

# VOCATIONAL AND TECHNICAL EDUCATION IN AUSTRALIA

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## Executive Summary

### Introduction

Important economic, technological and social changes in recent years have given a considerable boost to vocational education and training being recognised as an area of high priority by governments and industry.

### Plan of the paper

In what follows, this paper will:

- try to justify increased investment in human capital and survey the empirical evidence on the effects of such increase;
- note the role of the Federal and State governments in education;
- discuss the funding of education and training;
- outline the structure of the education and training system;
- provide a statistical analysis of the labour market for youth and young adults;

- discuss salient features of participation in education and training;
- outline the main developments in VET which have taken place in recent years;
- attempt to evaluate these developments;
- identify the main problems affecting the various age groups – youths, young adults, prime age adults and mature age workers – as well as indigenous workers and workers with a non-English speaking background; and
- finally, make certain concluding observations.

## Why education and training?

Investment in education and training is an accretion of human capital. Like physical capital, it is a significant element in the engine of economic growth.

In addition to constituting investment in human capital and its positive impact on productivity, education and training also provide a means for 'filtering' or identifying the attributes of students. The two processes are related to one another.

The benefits of investment in human capital can go beyond the economic ends of production; it may also have a 'consumption' component as a desirable social end in itself as well as better community health and social cohesion. These intangible externalities of investment in human capital add to the difficulties of making budgetary policy decisions on such investment.

The level of educational attainment, the length of formal schooling and training, and the level of literacy have generally been regarded as proxy measures of human capital. Although educational attainment and the degree of literacy may be expected to go together, as it appears to do in the case of Australia, this is not invariably so. Of the OECD countries covered in the measure of literacy, Australia is in about the middle range, with Sweden topping the list.

In terms of educational attainment, OECD figures show that, in 1998, 56 percent of the Australian population aged 25-64 had completed upper secondary education or higher. For Austria (1997), the corresponding figure was 73 percent. However, when the level of attainment is confined to tertiary education, the Australian figure is 25 percent for type B and 17 percent for type A[1], compared to 11 percent and 6 percent respectively for Austria.

[1] Type A (ISCED 5A) programmes, (duration a minimum of 3 years full-time equivalent), are largely theory based and are designed to provide minimum qualifications for entry to advanced research programmes and professions with high skill requirements. Type B (ISCED 5B) are typically shorter in duration (minimum 2 years full-time equivalent), focus on practical, technical or occupational skills for direct entry into the labour market. These types may be equated to university and TAFE programmes.

It follows that for investment in human capital to be productive, its composition must be appropriately aligned to volume and structure of demand.

## The empirical evidence

Just as the economic 'efficiency' of physical capital has been expressed in terms of annual rates of return by relating the cost of investment in capital to the income stream from the investment over its life, so attempts have been made to relate the cost of investment in education and training to individuals, enterprises and economies, to the incomes accrued from such education and training.

OECD estimates of private and social rates of returns from university education for a number of countries, including Australia, show that the former are generally well above the latter for both men and women. This is also evident in an estimate of rates of return on apprenticeships in Australia. However. a recent Australian estimate on the basis of 1997 data put the private rate of return on investment in university education at 15 percent and the social rate of return at 16.3 percent.

What guidance such figures can give governments in structuring their outlays on education and training is problematical. Life-time earnings profiles do not stay constant; changes in technology and demand and supply and institutional forces will have differing influences in different countries and at different times.

It is of interest also to examine evidence of cost/benefit analysis of training at the enterprise level with respect to both productivity and wage effects. These turn out to be substantial.

Even without considering the intangible social benefits of education and training, the overwhelming evidence is that private and social rate of returns on education and training are generally positive; unemployment rates are lower for those with higher levels of education; and enterprise investment in education and training can generally be expected to yield positive outcomes for wage earnings and productivity, especially if associated with appropriate work practices and human resources management. The implications of the latter for management education as a critical accompaniment of worker education and training are obvious.

However, on the evidence, in the absence of reliable cost and benefit measures, it is not possible to be confident on the economic worthwhileness of any particular ***volume*** and industrial ***distribution*** of investment in human capital formation; nor on whether relatively more resources should diverted to any particular level of education. Until education indicators are more refined and reliable, these issues can only be resolved in any country on its particular circumstances and the best available evidence at the time.

## Role of governments

Australia is governed under a federal system consisting of six States and a number of Territories. Although the delivery of vocational educational and training is the responsibility of the States, the

policy for this area is shared between the state and Federal governments and is implemented by national institutions set up for this purpose.

### Funding

Some 90 percent of education funding come from State and Federal governments, but the relative importance of these two sources varies between the sectors. The outlay of governments to the various education sectors was distributed as follows:

| | |
|---|---|
| Schools (including transport) | 63 percent |
| Universities | 24 percent |
| TAFE and other tertiary n.e.i. | 13 percent |

Public subsidies to students range from 66 percent of costs for a university undergraduate paying upfront under the Higher Education Contributory Scheme (HECS), an income contingent liability scheme, to 95 percent of the costs for government school senior secondary education students costs and for students in publicly funded VET.

The comparatively high proportion of government subsidy paid to the VET sector, has allowed the VET fee at TAFE Colleges to be kept low ($ 800 for an annual course), despite the high unit cost of VET. The fees charged by commercial (private) VET providers range from $ 5,000 to $ 10,000 per annum but the bulk of VET students are enrolled at TAFE Colleges.

HECS is an income contingent loan scheme applying to university students who choose not to pay fees upfront (nearly 80 percent of undergraduates), repayable in stages, through income taxation starting on a threshold income of about $ 21,000 per annum at 3 percent and rising progressively until the whole amount is repaid.

In 1998, the estimated expenditure on vocational education and training from all sources was about 1.5 percent of GDP; and the relative contributions of the sources were as follows:

| | |
|---|---|
| Government | 44 percent |
| Private enterprise | 45 percent |
| Individuals | 11 percent |

What emerges from the above is the greater reliance of Australia, the Netherlands and the USA on private funds in contrast to Austria. Government funding stands out in both Austria and Denmark .

In all OECD countries, the percentage devoted to tertiary education was well above that for the lower levels of education. The higher percentage devoted to the primary and secondary levels in Austria may partly be due to a lower proportion of young people in Austria.

The distribution of the 25-64 year-old labour force by level of educational attainment for a number of OECD countries in 1998 is shown by the following percentages (*OECD,* 2000A: Table A2.1(b)):

It will be seen that Austria stands out with the highest proportion of the 25-64 labour force with upper plus post secondary education and the lowest with tertiary education. Australia, on the other hand, has the highest proportion with lower secondary education and with tertiary education, and the lowest with upper plus post secondary education.

## The structure of the Australian educational system

The characteristics of the various levels of formal education may be summarised as follows:

Pre-school education: ISCED 0

Normal age 3-5; normal duration 2 years.

Primary education: ISCED 1

Normal age 5-12; normal duration 6 years.

Lower secondary education: ISCED 2

Normal age 12-15; normal duration 3 years; compulsory education applies up to the age of 15, at which age students would normally be at Year 9 or 10 of schooling.

Upper secondary education: ISCED 3A

Normal age 16-17; normal duration 2 years; award of Senior Secondary Certificate of Education provides qualification for university entrance:

Education of students with disabilities

Students with disabilities – visual, hearing, intellectual, social-emotional and multiple disabilities – make up 3 to 5 percent of the Australian school population.

The policy of the Federal and State Governments is firmly in favour of 'inclusive' education for such students, i.e., they should be taught as far as possible in regular rather than specialist or segregated schools; and that they should have access to the same curricula as all other students. Within regular schools, they may be taught in regular classes along with their peers or in special classes for some or all the courses. Schools are given special funding to enable the employment of specialist and support staff as well as acquisition of necessary equipment.

For those with severe disabilities who could not reasonably be accommodated in ordinary schools, specialist schools are available; and the matter at which school a disabled student is best placed, is a matter for negotiation between schools, on expert advice, and the parents concerned. It has been estimated that about 1.55 percent of all students are educated in specialist schools, less than half the number of students with disabilities.

*The formal pathways after upper secondary education*

There are two main formal education pathways after the completion of upper secondary education.

**Vocational education and training**

The provision of vocational education and training courses is dominated by the Colleges or Institutes of Technical and Further Education (TAFE) which are public institutions. The other providers are private business colleges and industry skill centres of which there are over 3,000. Entry to these courses is less restrictive than is required for university entrance.

The 'New Apprenticeship' scheme was introduced in 1998 as an initiative of ANTA, a new body to be discussed presently, to overcome the deficiencies of the existing system. The main features of the scheme may be summarised as follows:

- Greater flexibility, in content, training, and assessment methods has been introduced into this area of training in order to make it more attractive and meaningful for both employers and trainees.
- Greater flexibility in the range of training programmes to meet the specific needs of enterprises. Apprenticeships and traineeships have been extended to industry areas not previously included.
- Training programmes even in the traditional trades have been modernised in keeping with technological developments. Enterprises can in many cases select their own training providers and structure the training programmes (training packages) to meet their particular needs under the 'user choice' concept.
- Apprenticeships can be full-time or part-time, and of varied duration ranging from four years full-time equivalent to a year or less for traineeships especially for the service sector.
- Enrolment eligibility ranges from school leaving age upwards with no limit.
- Training can be undertaken at a training institution or at the place of work with trainers and teachers providing formal off-the-job training within the workplace.
- It is now possible for small employers who are not in a position to take on full-time apprentices and those unable to provide a well-rounded range of work experience to apprentices, to group together and to allow the apprentices concerned to rotate among the group of employers in order to obtain full-time work experience. The scheme also enables apprentices who have been dropped from their initial indenture because the enterprise has closed down, to complete their work experience with another employer.

Another innovation has been to make the apprenticeship and traineeship programmes, in conjunction with part-time work experience, available in Years 11 and 12, the last two years of

secondary schooling, with considerable flexibility. The training programme may be based on courses or modules prescribed under industry or enterprise competency standard to be discussed below. It may be delivered by the school, in whole or in part, or by a public or private provider.

The 'school-industry' programmes are intended to encourage students to stay longer at school and, thereafter, to continue with vocational education at the tertiary level. It is also possible, under the scheme, for a student to be a paid employee under contract with an employer whilst studying at school. The time spent at the workplace is assessed and accredited as part of schoolwork.

The formal qualification awards issued in the VET sector are:

| | |
|---|---|
| Certificate I | ISCED 2C |
| Certificate II | ISCED 2C |
| Certificate III | ISCED 3C |
| Certificate IV | ISCED 4C |
| Diploma | ISCED 5B |
| Advanced Diplomas | ISCED 5B |

Higher education (universities)

Completion of year 12 schooling provides qualification for entry to higher education. The formal qualifications awarded are:

| | |
|---|---|
| Diploma – 1 full-time* | ISCED 5B |
| Advanced Diploma – 1 full-time* | ISCED 5B |
| Bachelor's Degree – 3 full-time years* | ISCED 5A |
| Master's Degree & Post-graduate Diploma – 1 to 2 full-time years* | ISCED 5A |
| Doctorates – normally 2-3 full-time years* | ISCED 6 |

(* or equivalent part-time)

It will be noted that there is an overlap between upper secondary schooling and TAFE (and its private equivalent providers); and between TAFE and higher education in universities.

*International differences in education and training pathways*

The OECD has identified three principal types of pathways through upper secondary education and training and beyond it to work and tertiary education:

– General education pathways, in which a high proportion of upper secondary students take part in general education. Countries falling into this category include Australia, Canada, Japan and the USA, where some three-quarters of such students participate in general education. Broadly, this pathway is a preparation for tertiary study.

– School-based vocational pathways, in which the principal aim of a high proportion of students is to obtain an upper secondary level occupational qualification for direct entry into the labour market. Countries in this category are Hungary and the Czech Republic involving 82 percent and 70 percent respectively of all upper secondary students in these pathways; and to a lesser extent Austria and Finland, where about 40 percent of such students are involved.

– Apprenticeship-type vocational pathways, involving a contractual arrangement with employers and a direct link with the workplace, with the object of securing occupational qualification. This is a dominant feature of the Swiss and German systems, affecting more than 50 percent of all young people; and to a lesser extent (40 percent), the Austrian system.

The small proportion falling outside these pathways generally face difficulties in either further education or employment or both.

An Australian longitudinal study has provided interesting flow-paths for tracing the experiences of these students through their seven post-school years. These are reproduced below. Of the male and female students, 38 percent and 48 percent respectively, obtained tertiary qualifications (university or associate diploma) or were enrolled in the seventh post school year. The rest did not obtain any tertiary qualifications nor were enrolled in the seventh post-school year. The importance of continued education and training beyond compulsory schooling is underlined by this study.

The study also disclosed that those without tertiary qualifications were more likely to:

– have parents from the lowest socio-economic status;

– have parents from the educationally least qualified group;

– be Australian-born than from a non-English speaking background;

– have attended a Government secondary school than a Catholic or Independent secondary school;

– have a disability or health problem that limited the work they could do; and

– to have left school early.

Comparing the main education and training pathways chosen by upper secondary students in Australia and Austria after compulsory education, the following percentages emerge for 1996:

The contrast between the two countries is sharp. The Australian picture is mirrored by North America and New Zealand; while the Austrian experience was also reflected in Denmark, Germany and to a lesser extent, the Netherlands. While more recent Australian figures would show a higher percentage in the apprenticeship and school-based vocational categories, it remains true that the contrast with Austria is marked.

The pathways of young people through education and into work in Australia are more varied and individualised as a result of the diverse post school education and training options which are now available. The Australian education system with its rather loose link with the labour market (in contrast to the Austrian and German, for example) tends 'to have a strong emphasis on general education oriented to university study, modularisation of curriculum provision and courses . . . [and] most young people acquire their vocationally-specific skills on-the-job, rather than prior to entering employment' The question arises whether the Australian mixed pathway should be preferred to divergent pathways of the Austrian type. While there are advantages of greater flexibility in the Australian approach, it has the disadvantage of offering less employment certainty to young people, at least in the medium term, than in countries such as Austria and Germany, where there is a tighter connection between education and the labour market system.

However, it is arguable that, in the long term, the mixed pathway of the Australian type provides a better balance between general and vocational education and establishes a better basis for later learning developments. However, before any firm conclusion can be drawn from these figures, it would be necessary to examine in detail the curricula of the relevant schools in the different countries.

## The state of the labour market for youths and young adults

The marked increase in *education participation* of 15-24 year-olds, has been accompanied by a sharp decline in full-time *labour market participation* on the one hand, and a growth in part-time employment on the other. These developments are to some extent interlinked: the reduced opportunity to find full-time employment lowers the opportunity cost of continuing with education and training; while part-time employment provides financial support for full-time study..

In summary, as compared with Austria, the Australian labour market shows a *significantly higher:*

- rate of unemployment of 15-24 year-olds,
- percentage of 15-19 year-olds non-student unemployed to non-student population,
- labour market disadvantage of low qualified 20-24 year olds,
- percentage of 15-24 year-olds who were not in education,
- percentage of 25-64 year-olds who attained less than upper secondary education,
- labour force participation of 15-24 year-olds,
- part-time youth employment and students in employment.

These figures show the existence of the well-established inverse relationship between the unemployment rate of young people and their educational attainment; and they call for an

explanation of the particular circumstances applying respectively to Austria and Australia which may account for the above differences between the two countries.

## Participation in education and training

Despite the relatively higher percentage of low qualified persons in the 20-24 age group in Australia compared to Austria in 1996, the last 10-15 years have seen a substantial increase in education participation in Australia, especially in year 12, the final year of schooling.

However, these rates of increase have not been sustained through the 1990s. School retention rate at year 12 in 1982, was 36 percent. By 1992, it had risen to 77 percent, the high point of school retention rate; but it has since slipped down to 71 percent. However, between 1992 and 1999, the rate fell from 73 percent to 66 percent for males, and from 82 to 79 percent for females.

About 43 percent of the 1995 school-leavers, were not attending tertiary education in 1996. Of these:

- 16 percent were full-time employed,
- 11 percent were part-time employed,
- 12 percent were unemployed, and
- 3 percent were not in the labour force.

In the context of a marked increase in the rate of unemployment, especially among the less skilled, governments have responded in two ways. One, by increasing funding for tertiary education, especially VET; and two, by changing the operation of the VET system by policies and programmes designed to facilitate a greater output of skills through a greater diversity, accessibility and flexibility of education and training pathways. This is discussed in section 10 below.

*TAFE and universities*

In May 1996, the destination of school leavers aged 15-19 to universities was 29 percent while their destination to TAFE was 24 percent. This may suggest that there is still a popular perception that VET is a second best option to university education

However, the change in name of the vocationally oriented institutions known as Colleges of Advanced Education (the equivalent of the U.K. Polytechnics) to universities in recent years, has blurred the distinction between universities as primarily knowledge advancing institutions, and other tertiary institutions. There is increasing encroachment on each other's traditional territories. Partly for financial reasons, especially in view of increased financial stringency in the allocation of federal funding, universities have tapped the demand for vocationally oriented diplomas as a source of income; while TAFE colleges have been prone to 'academic creep' to meet public perception of

prestige and what is regarded as 'up-market' education, and to fill the gap left by former Colleges of Advanced Education when they amalgamated with existing universities or acquired university designation.

Students have moved in both directions, employment difficulties confronting particularly graduates in the humanities, have led them to seek vocational qualifications offered by TAFE.

Another development at TAFE colleges is the increasing proportion of adult students (including worker re-training, active labour market programmes for the unemployed) and university graduates seeking vocational qualifications.

*On-the-job training*

An Australian Bureau of Statistics survey undertaken in 1997, reported that 80 percent of wage and salary earners had undertaken some form of training in the 12 months prior to the time of the survey. Of these, about 72 percent undertook on-the-job training[2].

An OECD analysis of participation of 25-64 year-olds in continuing education and training by type of training and by labour force status shows that in 1994-95, of employed and unemployed persons respectively:

- 42.2 percent and 28.3 percent were participating in all types of training
- 38.1 percent and 23.8 percent were participating in job related training

Compared to a number of other countries, by far the main source of financial support for job-related continuing education in Australia comes from the employee themselves rather than from the employer or the Government.

## Recent developments in VET

Growing unemployment, especially among the less skilled, in the context of global competition, a shrinking manufacturing base, and fundamental changes in technology and work practices, together, provided the impetus for government action for a more effective VET system. The result was the development of a national approach to VET for all ages. In essence, a **national** system is considered as providing the opportunity for the award of qualifications which are portable and flexible in its composition, to meet the differing needs of industries and enterprises.

[2] This figure is inflated by the inclusion under 'training' unstructured instruction to employees of new routines specific to the enterprise.

The new system's objectives are:

equipping Australians for the world of work,
enhancing mobility in the labour market,
achieving equitable outcomes in vocational education and training,
increasing investment in training,
maximising the value of public education and training expenditure.

The basis of the new approach was the creation in 1992, by agreement of the Federal and State Governments, of a statutory body, the Australian National Training Authority (ANTA) which delegates various issues and processes to its several committees. The ANTA is administered by a Board consisting of representatives of employers, unions and education. It advises and is responsible to the ANTA Ministerial Council made up of federal and state ministers for vocational education and training. The Council sets annual national priorities to be implemented by the Board.

The main features of the new system may be summarised as follows:

- The VET system rests on the National Training Framework. This embodies an agreement between the Federal and State Governments on the regulation of the VET system. It is based on two key elements – the Australian Recognition Framework and National Training Packages. The Australian Recognition Framework (ARF) prescribes principles, protocols and standards on which skills and qualifications are recognised uniformly throughout the country. This involves nationally agreed registration requirements and monitoring and auditing processes of providers (Registered Training Providers) to ensure quality assurance. The implementation of the ARF is primarily the responsibility of the States.

- A Training Package is effectively a grouping of competencies in modular form related to the work functions and needs of the industry or enterprise in question or, where appropriate, across other industries. In some cases, trainees are required to complete a number of modules before they can be assessed as competent in a particular unit of competency. In other cases, a single module may be all that is necessary.

- To provide a consistent system of recognised qualifications throughout the country regardless of state borders, in order to facilitate mobility, the Australian Qualifications Framework (AQF) was established, similar in concept to the British National Vocational Qualifications. This consists of 12 qualification levels, from senior school certificates to doctorates.

- An important feature of the National Training Framework is the establishment of industry training advisory boards (ITABs), of which there are 20, to advise ANTA on industry training priorities and to develop Training Packages. The ITABs develop skill standards which establish the basis for curricula and assessments for VAT providers and vocational certificates. The

standards are also tailored to the particular needs of small businesses and are subject to continuous review in the light of technological changes and best practices.

- A feature of the current reforms of the VET system is that it is competency based, i.e., based on what the students know and are able to do, rather than by accumulated credits and time served in education and training. This philosophy is inherent in the development of Training Packages.

- Learning strategies are flexible and depend on the requirements of particular industries as expressed by their competency needs and also by the location of learners for whom various approaches are available – skill centres, learning manuals, resource kits, on-the-job coaching, computer-based learning, etc.

- The providers of training and/or assessment, known as Registered Training Organisations (RTOs), undertake to train on the basis of the relevant Training Packages or, where a Package is not available, on the basis of accepted VET competency requirements and standards. Registration depends on the organisation establishing the adequacy and quality of its resources to undertake the particular type of training, to perform assessments, and to certify the qualifications of trainees in accordance with the principles, protocols and standards of the Australian Recognition Framework which provides a comprehensive approach national recognition of VET, its competency requirements, its training processes, and its certified qualifications. RTOs are subject to monitoring and auditing by a designated State body.

  TAFE colleges are the main providers of VET but there is large number of private providers – estimated at over 3000.

- Another Committee of ANTA is the National Research and Evaluation Committee (NREC) which reports to the ANTA Board on research strategy and plans, and disseminates research findings generally to ensure the implementation of any improvements in VET. In addition, there are several research centres, which are funded by ANTA.

On its face, the recent developments in the strategy, structure, standards and funding of VET provide an ideal model for meeting the objectives of the system noted above: equipping Australia for the world of work; enhancing mobility in the labour market; achieving equitable outcomes in VET; maximising the value of VET expenditure.

However, the system is not without its critics. Its policy settings have been questioned and its deficiencies in applying and administering its principles and meeting its objectives has been the subject of a recent Senate Committee Inquiry into the Quality of VET in Australia. Some of the criticism are as follows.

- Persistent shortage of traditional trade skills, leading the Federal Minister of Education and Training, supported by the main employers associations to establish working parties to

investigate the reasons for the shortage and to develop action plans for the Government to implement to alleviate the problem.

- Lack of co-ordination between providers and employers; and inadequate matching of trainees and employers.
- Training Packages which, although in principle allowing considerable flexibility in qualifications, is seen as placing severe restrictions on curriculum design and a neglect of 'life skills' (literacy and numeracy).
- There is disquiet about the competence of some of the providers: their assessment and training methods and the implications for the quality of skills.
- The wide dispersion of workplace training makes any reasonable degree of monitoring and quality consistency problematical. In the circumstances, the 'contract of training', which is the basis of employer training subsidy, is at risk of becoming a 'contract of employment' with the opportunity open to unscrupulous employers to obtain subsidised cheap labour.
- The vocational curriculum of the school courses is unduly narrow and that a wider range of choices would attract a larger number of students who might otherwise leave school before completing upper secondary education.
- The rapid growth and diversification of the vocational training system, its flexibility, the introduction of workplace training, together with reliance on the operation of market forces in the form of 'user choice' of the providers of VET, have led to concerns about the quality of apprenticeships and traineeships.
- Funding is inadequate and uncertain.
- Part of the difficulties which have been noted arises from the existence of three stakeholders in the system – the Federal Government, the State Governments and employers – with different responsibilities and different interests, though not necessarily conflicting, in its outcome. The National Training Quality Council has recently been establish to deal with some of the problems noted. A Senate Committee of Inquiry has recommended centralisation in the administration of the system by an independent body.

### The problems of different age groups

The transition from education to work is a complex matter – longer and more drawn-out compared to earlier times. For most, it is no longer a case of a full-time job almost immediately on exit from school, even before completing upper secondary level. The transitional pathways are many, intermittent and some with dead-ends.

It is well accepted on international evidence that the risk of persistent unemployment is significantly greater for young people who leave school before completing upper secondary education or its vocational equivalent.

The proportion of the 25-64 year old Australian population that had attained at least secondary education in 1998 was lower than most OECD countries. It is also apparent that early school leaving is concentrated among youths with disadvantaged backgrounds. In addition to literacy and numeracy competence, social skills and other personal qualities are frequently as important as technical skills in employability.

### Teenagers: 15-19 year-olds

The rates of unemployment, part-time and casual employment among teenagers are high. The replacement of full-time jobs by part-time and casual jobs, which have occurred in recent years, has fallen substantially on young people. The problem for youth is not merely to find work but also 'to be able to be able to escape from a cycle of insecure, casual, temporary and part-time work' after leaving school.

Various actions are suggested to assist those who are in this position. The justification for giving high priority to the learning needs of teenagers, is that they are the adults of tomorrow. Anything that is done to increase their prospects for stable employability and a fulfilling career, will save them from being trapped in a life of 'milling and churning' going into adulthood.

### Young adult workers: 20-24 year-olds

The problems of young adults are no less serious than those of teenagers. Compared to teenagers, a larger percentage of young adults were in the labour force. They had a lower rate of unemployment but were unemployed for a significantly longer period. An OECD study shows that, in general, unemployment among young adults is more likely to move directly with adult unemployment than is teenage unemployment.

It is estimated that, in 1997, some 21 percent and 26 percent were at risk of continuing labour market disadvantage in the sense that they were unemployed, or in part-time employment but not undergoing education/training, and marginally or not attached to the workforce. This is rather higher than the 15 percent to 20 percent corresponding figure for teenagers. A proportion of marginalised teenagers would no doubt have carried this handicap into adulthood and the high figure of young adults 'at risk' underlines the urgency, at least as great as in the case of teenagers, for remedial action for these persons who are at a stage in life when many would be expected to be taking on family commitments.

### Prime age workers: 25-54

Prime age adult workers had a significantly lower unemployment rate and part-time employment rate than the earlier age groups but they had the longest duration of unemployment. The long duration of unemployment is telling and suggest that these unemployed lack the skills required for employment. To some extent, this group would be carrying the problems of young adults in securing steady employment. They belong to the pre-1990 cohorts with low upper secondary schooling.

Those with lower educational attainment appear to be more prone to miss out on further training. With rapidly changing technology and skill requirements, this group (as well as the mature age group to be discussed presently) could be expected to benefit from the provision of lifelong learning facilities.

### The 'Mutual Obligations' principle

More recently, the principle of 'mutual obligation' has been invoked by the Federal Government to encourage training and the work habit for unemployed persons between the age of 18 and 34. Unemployment benefit in Australia is means tested, of indefinite duration and related to family obligations. But under the new principle, also known as 'Work for the Dole', so long as they satisfy the means test, unemployed persons are required to participate in one of a range of activities (including education and training, community service and military service), which could be expected to develop their work habit and skill and, consequently, their employability, in return for receipt of unemployment benefit.

While the intention of the scheme seems laudable, so far, the evidence suggests that it falls short of being a successful active labour market policy.

### Mature age workers: 45-64 year-olds

The extent to which mature age workers may be expected to continue in employment, either full-time or part-time, past normal retirement age, will depend on a variety of factors including their health, financial position, the financial and other incentives to work, employer perceptions of their suitability for continued employment, the opportunities for re-skilling and the availability of jobs.

Labour force participation of mature age adults declines substantially compared to younger age groups. This is also the experience of most OECD countries.

The lower unemployment rate of the mature age workers and their higher rate of part-time and casual employment shown in the table above, reflect early retirement and retrenchments from full-time employment. The reduced employability of mature age workers is also reflected generally in OECD countries, the relative intensity of hiring falling with age. However, the extent of early retirement may be more a symptom of difficulties, in the context of industrial restructuring and

downsizing, faced by mature age workers in finding suitable employment rather than a voluntary move out of the workforce.

Australia's population growth has fallen from an annual rate of 1.6 percent in the early 1970s to around 1.2 percent in 1999; and on present indications, is predicted to continue to fall to about 0.1 percent in 2051. These developments are projected in the context of an increase in early retirements of men and women which will impact on the supply of labour. Consequently, the rate of growth in GDP may be expected to fall unless offset by faster productivity growth and/or a higher workforce participation rate.

It is apparent, therefore, that to counter the prospect of a fall in GDP growth, a later retirement of mature-age workers becomes necessary. At present, the Australian participation rate of mature-age workers at 55 is among the lowest in the OECD. The implications for old age pensions commencing at age 65 would need to be considered.

Training opportunities are clearly one of the more critical factors in facilitating employability of older workers. An OECD survey of a number of countries for 1994-95, shows that generally the rate of participation in job-related continuing education and training declines significantly for older workers, especially for workers with low educational attainment; but this decline is much less for professional workers.

### Lifelong learning

The training and re-training needs, particularly of prime age and mature-age workers, raise the issue of lifelong learning. The importance of lifelong learning 'as a determinant of long-run growth in a knowledge-based economy' has been endorsed by OECD Labour Ministers. There is implicit in ANTA's objectives the development of a 'training culture' and lifelong learning, both necessary ingredients for travel along this route. The question arises whether the Australian education and training infra-structure is adequately equipped for such an objective. This gives rise to two questions.

First, whether a sufficient proportion of the workforce has the necessary qualities or commitment to engage in lifelong learning. This calls not only for such persons to have 'a love of learning and the skills of learning to learn', to use the words of the OECD, but also to have a sufficient competency basis to acquire new skills. It follows that what is done by way of learning in the transition phase should have a time frame which goes beyond the immediate employability of young people. In this connection, a solid basis for lifelong learning, calls for the development of core skills which will enable learners to acquire new skills more easily. These include the 'three Rs' – reading, writing and arithmetic – as well as problem-solving and applied skills, social and communications skills, personal development, and a facility and motivation to learn.

Second, whether the prevailing tendency to employ part-time and casual labour, to emphasise labour market flexibility, to engage in downsizing and outsourcing, is consistent with the requirements of lifelong learning.

### Indigenous workers

Indigenous Australians are the most disadvantaged section of the population in vocational education. The difficulties faced by young Australian discussed above are magnified manifold for Indigenous Australians.

Part of ANTA's 'equity' objective is to encourage training and employability of disadvantaged groups like Indigenous Australians, and appropriate adjustments are made in training and assessment methods for Indigenous trainees and persons with literacy difficulties. However, the performance of Indigenous trainees in VET courses is well below that of other Australians. As literacy and numeracy appear to be a significant handicap limiting VET of Indigenous persons, the Federal Government has recently announced the establishment of a National Indigenous Literacy and Numeracy Strategy in order to overcome the source of this hurdle at the school level.

### Workers with a non-English speaking background

Immigration has been a feature of the Australian population and the labour force from the very early days of British settlement. A feature of persons with non-English speaking background (NESB) in more recent times is that the rate of unemployment among them has not only been significantly higher but also of longer duration. Those with NESBs have taken a heavier toll of industry restructuring than those with English speaking background because of the greater dependence of the former on blue collar jobs which have been more severely affected by the restructuring. The importance of proficiency in English as a factor in employment and shorter duration of unemployment of NESB workers is also evident in the statistics.

## Concluding observations

It is possible to conclude from international studies that although the precise figures are not reliable, private and social returns from investment in education and training are generally positive; and that enterprise investment in education and training can generally be expected to yield positive outcomes to productivity and pay. It was also found that to yield optimum outcomes, such investment in human capital must be associated with competent management, able to apply appropriate technology and work practices in the use of its labour force.

Furthermore, it needs to be stressed that more training as such does not necessarily equal more employment. The volume and range of skills being promoted should match the demand for them. An essential factor in a successful education and training programme is a general economic policy which will ensure adequate aggregate demand.

These considerations relate to the objectives of producing an economy capable of growing at a pace adequate to satisfy community expectations, providing full employment and the means to ensure that those who are at risk of being socially marginalised or excluded for want of adequate skills, are able to share in the general growth of the economy and incomes. However, it should be understood that there is more to education than securing work and income.

These are necessary conditions for a civilised, stable and humane society. But there is a further requirement for such a society, namely, providing people with the opportunity of achieving higher intellectual, aesthetic and spiritual qualities. No educational system is complete without concern for it. Although the emphasis in this Report has been on vocational education and training, this additional objective gives point to the need not only of vocational education but also of general education at all stages of the learning process.

One of the main problems identified in this study relates to a sizeable proportion of young people – teenagers and young adults – who are at risk of going through a good part of life, not having stable jobs, suffering frequent and protracted unemployment and having to subsist on low incomes, many being excluded from economic progress. A common characteristic of this group is their limited educational attainment, usually short of completing upper secondary education or its equivalent, and their non-participation in learning following initial education. Their literacy and numeracy deficiencies, which originate at the school level, are an important factor in their chequered employment history. Many in this group also have economically and socially disadvantaged backgrounds as well as other handicaps to which reference has been made. In this connection, attention has also been drawn to the particular problems of Indigenous Australians and those with NESBs, whose unemployment problem is much greater than that of the rest of the population.

The teenagers of today are the adults of tomorrow; and they carry their unattended problems into adulthood. It is not surprising that scholars in the field of education have laid considerable stress on the importance of attaining higher retention rates in upper secondary education by providing the necessary inducements to students to complete this phase of education. In Australia in recent times, the provision of vocational courses in schools is one such inducement.

While a higher rate of retention at the upper secondary school level should be the aim of education policy for the present and the future, there is also pressing need to rescue those who have not had the benefit of such a policy and have already 'fallen through the cracks'. This paper has referred to proposals for dealing with group. The economic cost of such a rescue operation is likely to be greater than the economic benefit. But in a humane and civilised society, social costs and benefits should be the calculus of such operation.

There is no question that compared to the 1980s, there has been a considerable improvement in the outcomes of the education and training system as reflected in a number of indicators. There has been a rise in upper secondary school retention and completions rates; and in post school

education and training participation rates, in enterprises and in tertiary learning centres. The initial transition to work is beginning later and taking longer.

However, the signs are that the momentum of these developments has begun to falter in more recent years. This, despite the generally accepted view that the system promoted since the advent of the ANTA is, in principle, a sound model for dealing with the problems of rapid structural adjustments called for by technological developments and globalisation. But the system is still new and teething problems are to be expected. The important thing is that its deficiencies are being recognised and corrections proposed.

There is currently a ferment of thinking on education and training. Research is going on apace under the aegis of the OECD and other bodies, papers are being written in abundance, and many conferences are taking place in Australia and in other parts of the world on the issues of learning. International comparisons are being made, one country trying to learn from the experiences of others. Improvements will come not only from the ideas which are put forward, but also from the adequacy of resources governments are prepared to devote to give practical effect to such ideas and improving the economic and social outcomes of the educational system at all its levels. The political imperative which will make such resources available, will ultimately be driven by the perceived costs and benefits, economic and social, of education and training.

# 1. Introduction

Important economic, technological and social changes in recent years have given a considerable boost to vocational education and training being recognised as an area of high priority by governments and industry. In 1997, the Federal Minister of Education noted (*Kemp,* 1997:9)[3] that

*Vocational education has a crucial role to play in the Government's vision to develop Australia as a society able to adapt flexibly and dynamically to the changes of a highly competitive global economy*.

The opening up of the Australian economy to deregulation and greatly reduced trade protection, has exposed it to a degree of global competition never experienced before; while the manufacturing base, which had absorbed a large proportion of unskilled workers, has been shrinking. In addition to promoting a rapid growth in service and knowledge-based industries, technological changes, particularly in the area of information and communication, have led to the development of new work practices, displaced old skills, and have called for new skills and new methods of training. The rapidity of these changes and the somewhat slow training and workplace response to them, resulted in an inadequate growth in productivity to meet global competition and an unacceptable rate of unemployment, especially among the unskilled. It is largely in this context that important changes in the VET system has taken place.

However, it should be said that while meeting increased competition may be articulated as the objective of achieving a larger output of relevant skills and competencies, as is suggested by the reference to the Minister's statement above, there is also an important social objective which can go hand in hand with this economic objective: lifting the plight of those who are at risk of being marginalised for lack of skill or who are disadvantaged in other ways in finding steady employment, securing a decent income, and being socially included. It is for this reason that this Report has given particular emphasis to the link between VET and the labour market.

# 2. Plan of the paper

In what follows, this paper will:

- try to justify increased investment in human capital and survey the empirical evidence on the effects of such increase;
- note the role of the Federal and State governments in education;

[3] Quoted in *Maglen – Hopkins* (1998).

- discuss the funding of education and training;
- outline the structure of the education and training system;
- provide a statistical analysis of the labour market for youth and young adults;
- discuss salient features of participation in education and training;
- outline the main developments in VET which have taken place in recent years;
- attempt to evaluate these developments;
- identify the main problems affecting the various age groups – youths, young adults, prime age adults and mature age workers – as well as indigenous workers and workers with a non-English speaking background; and
- finally, make certain concluding observations.

## 3. Why education and training?

Although intuitively it is obvious why investment in education and training will increase labour productivity and employability, and establish the basis for a more competitive growing economy, it is necessary to provide a more rigorous case, in terms of cost/benefit, for such investment.

Human capital has been comprehensively defined as:

the knowledge, skills, competencies and other attributes embodied in individuals that are relevant to economic activity (*OECD,* 1998A:9).

The literature on the subject normally begins by regarding investment in education and training as an accretion of human capital, which, like physical capital, constitutes a significant element in the engine of economic growth. The link between education and the various ensuing benefits was emphasised as far back as 1788 by Adam Smith and developed more systematically by Becker in the 1960s. The higher earnings of the more educated and trained persons are regarded as a reflection of their greater productivity flowing from the increased investment in human capital.

However, there is much recent literature which challenges this simple linkage and advances the argument that the link is rather more complex. Thus, it is argued that personal characteristics such as innate ability, intelligence, energy, ambition are important ingredients in productivity; and that factors in the work environment such as technology, on the job training and management methods are also elements which drive productivity. On this basis, it is contended that the principal role of education is to act mainly as a 'filtering' mechanism, sorting out students according to their ability etc. It follows from this argument that, except in the case of unskilled and illiterate persons,

increased education may not lead to increased productivity. Instead, it may lead to 'credential inflation' as employees seek to maintain their positions by acquiring more certificates.

A less extreme view, and one which this Report accepts, argues that in addition to constituting investment in human capital and its positive impact on productivity, education and training also provide the means for 'filtering' or identifying the attributes of students. The two processes are related to one another (*Woodall,* 1987).

The benefits of investment in human capital can go beyond the economic ends of production; it may also have a 'consumption' component as a desirable social end in itself as well as better community health and social cohesion. These intangible externalities of investment in human capital add to the difficulties of making budgetary policy decisions on such investment.

The level of educational attainment, the length of formal schooling and training, and the level of literacy have generally been regarded as proxy measures of human capital. Although educational attainment and the degree of literacy may be expected to go together, as it appears to do in the case of Australia, this is not invariably so (*OECD,* 1998A:27). Of the OECD countries covered in the measure of literacy, Australia is in about the middle range, with Sweden topping the list. In terms of educational attainment, *OECD* (2000A:35-36) figures show that, in 1998, 56 percent of the Australian population aged 25-64 had completed upper secondary education or higher. For Austria (1997), the corresponding figure was 73 percent. However, when the level of attainment is confined to tertiary education, the Australian figure is 25 percent for type B and 17 percent for type A[4], compared to 11 percent and 6 percent respectively for Austria. Whether, on balance Austria has a higher stock of human capital in qualitative terms than Australia or the reverse, is not easily established by these figures. The difference may be largely a matter of definition of what type and level of learning is provided. In assessing these differences, it is relevant to note that the labour market outcomes in terms of rate of unemployment, economic growth and inflation of the Austrian system of education and training are rather better than Australia's. A fair conclusion would be that the stock of human capital by the measure of formal education and its quality is higher in Austria than Australia. Alternatively, it is arguable that the quality of management and the operation of the labour market are more efficient in Austria and/or that Austria is more generously endowed with natural resources.

Such measures of human capital, although convenient, are obviously incomplete. Human capital increases as a result of work experience and various other informal means of education and training. It also depreciates as a result of the development of new technologies, processes and

[4] Type A (ISCED 5A) programmes, (duration a minimum of 3 years full-time equivalent), are largely theory based and are designed to provide minimum qualifications for entry to advanced research programmes and professions with high skill requirements. Type B (ISCED 5B) are typically shorter in duration (minimum 2 years full-time equivalent), focus on practical, technical or occupational skills for direct entry into the labour market. These types may be equated to university and TAFE programmes.

products (*OECD,* 1998A: 11-12), capital replacement by a change in the range of human capital forms. A comprehensive quantitative measure still eludes us. Therefore, wherever possible, a broader measure than years of schooling and training of human capital should be used or alluded to in a qualitative sense; and any reference to years of schooling must be understood to be an approximate measure.

A further point to note is that the productive content in a particular volume of human capital depends on the extent to which its qualifications profile matches the occupational, industrial and locational demands for those qualifications. Turning out skilled workers for occupations or industries or in locations in which insufficient demand exists for their skills, would be a waste of resources and a source of frustration to the persons concerned. It follows that for investment in human capital to be productive, its composition must be appropriately aligned to volume and structure of demand.

## 4. The empirical evidence

### National measures of rates of return

Just as the economic 'efficiency' of physical capital has been expressed in terms of annual rates of return by relating the cost of investment in capital to the income stream from the investment over its life, so attempts have been made to relate the cost of investment in education and training to individuals, enterprises and economies, to the incomes accrued from such education and training. In a perfect world, private rates of returns could be expected to influence individuals as to whether the investment in education or training is likely to be worthwhile; and the social rates of return would provide some guidance to society and governments on the value of such investment.

The outstanding international studies of private and social rates of return from education in developed and developing countries have been made by *Psacharopoulos* (1987). Although such calculations should be treated with reservation because of data deficiencies and assumptions, these have been convenient summarised as follows (*Castellanos,* 1987:2):

a) rates of return to education are generally higher in less developed countries;

b) primary education tends to yield the highest return;

c) returns to investment in human capital are above returns to physical capital in less developed countries, while the two types of return are of almost equal magnitude in advanced countries;

d) per capita income differences can be better explained by differences in the endowment of human rather than physical capital;

e) investment in education contributes substantially to the rate of growth of output in most countries particularly in the less developed group; and

f) higher education is very expensive in relation to other levels, particularly in less developed countries.

*Table 1: Private rates of return of employed persons in 1995*

| Australia | Upper Secondary | Non-University | University |
|---|---|---|---|
| | | In percent | |
| Women | 12.5 | 7.9 | 6.7 |
| Men | 7.5 | 9.7 | 10.4 |
| *OECD Average* | | | |
| Women | 16.4 | 11.1 | 12.5 |
| Men | 14.9 | 10.7 | 12.4 |

Source: (*OECD,* 1998A: Table A4.3).

Estimates of private and social rates of returns from university education for a number of countries, including Australia, show that the former are generally well above the latter for both men and women.

The private rate of returns on apprenticeships in Australia has been estimated at 46 percent for male tradespersons; and negative for females – who tend to be concentrated in low paid apprenticeships such as hairdressing (*Norris – Dockery – Stromback,* 1997:9-13). On the other hand, the social rate of returns for males across al trades is estimated at 12.8 percent; and, again, it is negative for females. The large gap between private and social returns for male apprenticeships is a reflection of the substantial contribution of employers and governments to the cost of apprenticeship training.

However, a recent Australian estimate on the basis of 1997 data put the private rate of return on investment in university education at 15 percent and the social rate of return at 16.3 percent (*Borland et al.,* 2000).

What guidance these figures can give governments in structuring their outlays on education and training is problematical. Life-time earnings profiles do not stay constant; changes in technology and demand and supply and institutional forces will have differing influences in different countries and at different times.

The unreliability of rates of returns from investment in human capital is further shown in the substantially different figures derived by different authors.(*Englander – Gurney,* 1994) Perhaps the figures quoted here should be treated with caution and regarded mainly as illustrative. It would be unsafe to base any policy decisions entirely on them. Their limitations are amply discussed by the *OECD* (1998A:70).

## Enterprise-based training: productivity and wage effects

The above are generalisations at the macro level. It is of interest also to examine evidence of cost/benefit analysis at the enterprise level. Here again, the most appropriate economic test of the worthwhileness of training is in terms of annual rates of return. But reliable information on costs, including opportunity costs, is generally not available. Accordingly, recent studies have tried to estimate and compare the benefits of enterprise-based training internationally by considering the benefits in terms of productivity effects to the enterprise and wage effects to employees. Although these measures are of more limited value than rates of return, they do give some guidance on the value training.

A recent (*OECD,* 1999D) covering 24 OECD countries, concluded that the empirical literature generally confirmed the positive impact of training on productivity and on workers' earnings. However, such a general conclusion on the benefits of training at the enterprise level is not without difficulties in comparative analysis.

In respect of comparative productivity outcomes of training, there are differences in definitions and methods; but more importantly, the particular context in which training is applied is highly relevant to its outcome. The managerial skills, work practices and technology associated with training may be as critical to the productivity outcome as training. The literature abounds with the difficulties of isolating training from its context (*OECD,* 1998A: 62-63). There is even evidence that increased training may be ineffective without appropriate work practices and management strategy (*Long et al.,* 2000B).

The relationship between skill qualifications and productivity, comparing the U.K. with Germany and other European countries, was investigated by *Prais* (1981, 1991 and 1993) quoted in *Maglen* and *Hopkins* (1998). Prais found that higher skill levels enable work practices to be applied which generate significantly higher productivity. In an evaluation of the Prais studies and other similar studies, *Maglen* and *Hopkins* (1998:19) conclude:

*Having examined the published work . . . we consider that it has provided the strongest evidence yet for a causal link between vocational education and productivity.*

*Along with other research, it points to the need for synergy – of skills, attitudes, technologies, workplace culture etc. at all levels of an enterprise. So, inevitably, there could have been alternative explanations, but more skilled work with better vocational preparation was the recurring pattern. The skills of personnel set limits on options. We see the research as underscoring that together, skilled management and skilled workers are able to optimise work practices.*

Recent case studies undertaken in four industries (*Maglen et al.,* 2000) confirm this general conclusion. Substantial increases in value added, ranging from $ 58 to $ 190, per one dollar on training expenditure. But these benefits occurred in the context of human resources practices,

technology and overall business strategy, which were complementary to the up-skilling of employees.

Another Australian study (*Laplagne – Bensted,* 1999), using Probit neo-classical modelling and data drawn from the 1995 Australian Workplace Industrial Relations Survey (AWIRS) on workplaces employing 20 or more persons, examined the links between training, innovations and productivity. Innovations include new technology, plant and machinery, restructuring of work, reorganisation of management structure etc. One of the findings of the paper was that:

*Labour productivity growth appears to be enhanced by the joint introduction of training and innovation. Introducing innovation in isolation can promote labour productivity growth, although its returns are increased by the presence of training. Conversely, training is only of benefit to labour productivity growth if combined with innovation*.

Evidence of the wage effects of training, reflecting the benefits to employees, shows large and variable effects. For the USA, they range between 4 percent and 16 percent; for the Netherlands and the U.K., they rise above 20 percent (*Groot,* 1997:12).

A set of figures (column I) for seven countries (*OECD,* 1999C: Table 3.14), drawn from OLS wage regressions with selection, shows the higher pay resulting from training. However, another set of estimates showing the mean wage differences for trained workers (Table 3.13) produces a different set of figures, as shown in column II:

*Table 2: International differencies in calculations of returns to education*

| | I | II |
|---|---|---|
| | In percent | |
| Australia | 5 | 9.6 |
| Canada | 14 | 26.4 |
| France | nil | 11.1 |
| Germany | 8 | 18.5 |
| Italy | 38 | 25.0 |
| The Netherlands | -4 | 3.1 |
| U.K. | 74 | 19.3 |

However, there are difficulties in these cross-national figures because of differences in definitions, worker characteristics and methods used in deriving the figures, which should be used reservation as to their accuracy and comparability. Further, as with the estimates of productivity effects, training may be only one of many factors affecting the wage outcome in the different enterprises - the length of formal training, the incidence of informal training, the nature of training (specific or general), the occupation of the trainees and their prior level of education and training, the quality of management, changes in work practices and technology, training as a prelude to promotion, etc. All these can affect the wage outcome with a given amount of training; but they have not been controlled in the calculations shown above. Further, the competitive state of the enterprises and the market power of employees will influence the extent to which productivity will be distributed to wages, profits and prices.

Confirmation of the above discussion is reflected in an *OECD* (1998A:61)) extensive survey of the literature which concludes that

– training does generate *increased wages* for trained workers, and *increased productivity* for those enterprises that train and innovate. Some of the gain to workers in wages and some is kept by firms: it has been estimated that these two shares are of roughly the same size;

– enterprise-based training has the *greatest impact* on performance when undertaken in connection with changes in work organisation, job structure, and, in some instances, technological innovation.

This OECD study seems to have ignored the distribution of increased productivity in lower product prices. For competitiveness, particularly against the external economy, to be sustained, it may be necessary for increased productivity to be passed on in lower prices to an extent dictated by the degree of competition.

It is worth noting that access to training is associated with the particular characteristics of the labour concerned. These include: gender, ethnicity, prior level of education and training, full-time and part-time employment, union membership, enterprise size and occupation (*Groot,* 1998:6). The results of survey and other studies will obviously be affected by the extent to which these characteristics apply. Some of these matters will be taken up in section 12 below.

## Educational attainment and relative earnings

Going beyond enterprise-based training to formal educational attainment, a comparison of relative earnings and educational attainment confirms the generally positive association between the two, but the extent of earnings benefit differs between countries probably because institutional and other labour market differences allow varying differentials for skills. This is shown in the following figures for 25-64 year olds (*OECD,* 2000A:297):

*Table 3: Relative earnings by educational attainment*

*Upper secondary education = 100*

| | A | B | C |
|---|---|---|---|
| Australia (1997) | 79 | 103 | 136 |
| Denmark (1997) | 85 | 115 | 140 |
| The Netherlands (1996) | 84 | – | 137 |
| U.K. (1998) | 64 | 125 | 168 |
| USA (1998) | 70 | 116 | 184 |

A = below upper secondary; B =tertiary-type B; C = tertiary-type A and advanced research.

## Unemployment rates

Finally, there is evidence that the benefits of educational qualifications are also reflected in lower unemployment rates. A 1997 survey, showed a significant differential unemployment rate in favour of those who had post-school qualifications (*Michael Long et al.,* 1999A:23). Australian figures also show that persons holding post-school qualifications, have higher incomes, lower unemployment, and, in the case of females, higher labour force participation (*Gerald Burke et al.*, 1992:1).

A comparison of unemployment rates of young people by level of educational attainment in 1998 shows an inverse relationship between them: (*OECD,* 2000A:271).

*Table 4: Unemployment rates by level of education in 1998*

| Age group | Australia | Austria | OECD country mean |
|---|---|---|---|
| | | Unemployment rates | |
| *Below upper secondary* | | | |
| 15-19 | 23.6 | 8.4 | 22.1 |
| 20-24 | 20.8 | 7.6 | 18.9 |
| *Upper secondary & post secondary non-tertiary* | | | |
| 15-19 | 12.0 | 8.8 | 20.9 |
| 20-24 | 10.8 | 4.3 | 13.6 |
| *Tertiary-type B* | | | |
| 20-24 | 6.9 | 4.1 | 10.8 |
| *Tertiary-type A & advanced research* | | | |
| 20-24 | 5.2 | – | 13.8 |

The same conclusion is reached for men and women in the 25-64 age group (*OECD,* 2000A:270), and also when unemployment/populations ratios are related to educational attainment (*OECD,* 2000A:272).

The *OECD* (1999A:34) also concludes that, in general, young people with tertiary qualifications have better labour market outcomes than those who do not; as do those who complete upper secondary education compared to those who do not (*Anh – Miller,* (2000):232, 78 *et seq*).

Whether an even larger proportion of workers with post-school qualifications would necessarily result in lower unemployment depends, of course on the existence of vacancies for the range of competencies supplied in the appropriate locations.

## Conclusion on empirical evidence

Even without considering the intangible social benefits of education and training, the overwhelming evidence is that private and social rate of returns on education and training are generally positive; that unemployment rates are lower for those with higher levels of education; and that enterprise investment in education and training can generally be expected to yield positive outcomes for wage earnings and productivity, especially if associated with appropriate work practices and human resources management. The implications of the latter for management education as a critical accompaniment of worker education and training are obvious.

However, on the evidence, in the absence of reliable cost and benefit measures, it is not possible to be confident on the economic worthwhileness of any particular ***volume*** and industrial ***distribution*** of investment in human capital formation; nor on whether relatively more resources should diverted to any particular level of education. Until education indicators are more refined and reliable, these issues can only be resolved in any country on its particular circumstances and the best available evidence at the time, perhaps drawn from case studies *a la* Prais. The final word on the subject should be left to the *OECD* (1998A:73) study:

Notwithstanding the variety of complex inter-linking factors which underpin economic growth, the evidence does point to a positive relationship between expenditure for education and macroeconomic performance. But the mechanisms that create this impact, and hence the most effective types of investment in human capital, remain poorly understood. The most substantial finding is that tertiary education constitutes a relatively high cost to the taxpayer (per student), but appears to yield relatively high benefit to tertiary students.

## 5. Role of governments

Australia is governed under a federal system consisting of six States and a number of Territories. The Territories derive their powers from the Federal Government whereas the powers of the States are laid down by the Federal Constitution[5]. It is sufficient to note that the responsibility for education under the Constitution rests with the States, although the financing and administration in practice of the educational system is rather more complex.

The State governments play an active role in the administration of primary and secondary education, prescribing curricula, examinations, compulsory schooling age, among other things. In contrast, the States have given universities virtual autonomy to run their affairs; but through its substantial financial contributions (at present just over 50 percent of the universities' revenue) to this sector, it is arguable that the Federal government indirectly influences, if not implicitly regulates, universities in the matter of subsidised student intake, areas of study, staff salaries, research funds and various broad policy issues.

Although the delivery of vocational educational and training is the responsibility of the States, the policy for this area is shared between the state and Federal governments and is implemented by national institutions set up for this purpose. This is a fairly recent development and will be discussed in some detail presently in connection with the establishment of Australian National Training Authority in 1992.

[5] For our purposes, the distinction is not of any real significance and the Territories will be comprehended in any reference to the States.

# 6. Funding

## Australia

Some 90 percent of education funding come from State and Federal governments, but the relative importance of these two sources varies between the sectors. The outlay of governments to the various education sectors was distributed as follows:

| | |
|---|---|
| Schools (including transport) | 63 percent |
| Universities | 24 percent |
| TAFE and other tertiary n.e.i. | 13 percent |

Source: *Burke* (1999).

For the different institutions, the proportion of funding which came from governments in 1997, were (*Borthwick,* 1999:1):

- 93 to 95 percent of revenue of government schools;
- 56 percent of revenue of non-government schools;
- 82 percent of revenue of public-funded VET; and
- 54 percent of revenue of universities.

The Federal Government's share of these were:

- 12 percent for government schools;
- 69 percent for non-government schools;
- 35 percent for VET; and
- 98 percent for universities

*Table 5: Annual recurrent cost per student in 1997 (p. 24)*[1]

| | | | |
|---|---|---|---|
| Government senior secondary students | | $ | 8,000 |
| Catholic senior secondary students | | $ | 6,000 |
| Independent senior secondary students | | $ | 9,000 |
| VET (full-time equivalent) | | $ | 8,200 [2] |
| Universities (undergraduates) | | $ | 9,300 [3] |
| Universities(graduates) research degrees, | about | $ | 12,500 to $ 29,500 |
| Other | about | $ | 8,750 to $ 18,750 |

[1] Most of these estimates are very approximate because of the varying methods of compilation used in the different States and the need to apply averages because of wide variations. – [2] As a substantial proportion of VET students are part-time or doing one or two modules, the average annual cost per student was about $ 2,300. A considerable variation from the average applies, depending on the course, ranging from about $ 5,500 for commercial courses to about $ 10,500 for engineering type courses (*Borthwick,* 1999:27). – [3] Ranging around this average from about $ 6,000 for humanities and social sciences, to $ 17,000 for the medical sciences.

Public subsidies to students contribute on average the following to the recurrent costs education and training (p. 2):

- Up to 95 percent of costs for government school senior secondary education students;
- Around 64 percent of costs for senior secondary students in Catholic Schools and around 35 percent of costs for those in independent schools;
- Around 95 percent of costs for students in publicly funded VET; and
- Around 66 percent of costs for a university undergraduate paying upfront under the Higher Education Contributory Scheme (HECS) a contingent liability scheme to be explained presently.

On a per capita basis, students pay average annual fees and charges of (p. 2):

- up to about $ 800 per annum in government schools (mainly voluntary)[6];
- about $ 1,500 in Catholic secondary schools and $ 4,500 in independent schools (somewhat higher for the upper secondary level;
- $ 400 per full-time equivalent student in VET; and
- $ 3,500 for a full-time undergraduate at universities paying HECS upfront.

Some 20-30 percent of VET students receive fee concessions or exemptions on the basis of need (health, disadvantaged, etc). TAFE Colleges apply discretion in making loans and collecting fees on an installment basis; but the HECS scheme does not apply to this level of tertiary education. Against this, it should be noted that the comparatively high proportion of government subsidy paid to the VET sector, has allowed the VET fee at TAFE Colleges to be kept low ($ 800 for an annual course), despite the high unit cost of VET. The fees charged by commercial (private) VET providers range from $ 5,000 to $ 10,000 per annum but the bulk of VET students are enrolled at TAFE Colleges.

HECS is a contingent loan scheme applying to university students who choose not to pay fees upfront (nearly 80 percent of undergraduates). It is repayable in stages, through income taxation starting on a threshold income of about $ 21,000 per annum at 3 percent and rising progressively until the whole amount is repaid (the minimum wage is currently about $ 21,000). Since 1999, three levels of HECS, according to disciplines, apply to undergraduates, ranging from about $ 3,400 to $ 5,700 per annum (*Borthwick,* 1999:34). A large proportion of postgraduate students (mostly doing PhD), are on HECS; but an increasing proportion, mainly Master's students, are required to pay fees upfront. These range widely, from $ 3,000 to $ 40,000 per full-time year, depending on the particular course and the university.

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[6] In most schools, this is a euphemism for 'virtually compulsory'.

It is arguable that, to be consistent, VET and post-graduate education should be charged on a contingent basis. The argument is particularly strong in relation to VET in view of the present accreditation provisions of certain VET courses in universities. The logic of this argument is that to be consistent, the VET contingent fee should be based on the same criteria as university fees. But bearing in mind that generally VET students come from lower socio-economic groups, there is an equity (and in the long run, also an economic argument) for not imposing HECS on VET students.

In 1998, the estimated expenditure on vocational education and training from all sources was about 1.5 percent of GDP; and the relative contributions of the sources were as follows (ANTA 1998:83):

| | |
|---|---|
| Government | 44 percent |
| Private enterprise | 45 percent |
| Individuals | 11 percent |

## International comparison

A comparison of for all, shows the following:

*Table 6: A comparison of educational expenditure for all levels of education*

| | 1997 | | 1990 |
|---|---|---|---|
| | A | B | A |
| | As a percentage of GDP by levels of education | | |
| Australia | 4.3 | 6.1 | 4.3 |
| Austria | 6.0 | 6.7 | 5.2 |
| Denmark | 6.5 | 8.2 | 6.2 |
| The Netherlands | 4.3 | 5.1 | – |
| U.K. | 4.6 | – | 4.3 |
| USA | 5.2 | 7.1 | – |
| OECD (country mean) | 5.1 | 6.1 | 4.8 |

A = Direct public expenditure for educational institutions. B = Total expenditure from public, private and international sources for educational institutions **plus** public subsidies to households (*OECD,* 2000A:54).

What emerges from the above is the greater reliance of Australia, the Netherlands and the USA on private funds in contrast to Austria. Government funding stands out in both Austria and Denmark .

Much the same story is told by the following figures which show percentage of education expenditure to GDP in 1997 on:

- primary, secondary and non-tertiary levels (A and B): and
- tertiary level (A' and B').

*Table 7: Educational expenditure 1997*

| | A | A' | B | B' |
|---|---|---|---|---|
| | | As a percentage of GDP by levels of education | | |
| Australia | 3.3 | 1.0 | 4.2 | 1.9 |
| Austria | 4.2 | 1.3 | 4.3 | 1.7 |
| Denmark | 4.3 | 1.1 | 5.0 | 1.8 |
| The Netherlands | 2.9 | 1.1 | 3.3 | 1.5 |
| U.K. | 3.4 | 0.7 | – | 1.3 |
| USA | 3.5 | 1.4 | 3.8 | 2.9 |
| OECD (country mean) | 3.6 | 1.0 | 4.0 | 1.5 |

Source: *OECD,* 2000A:55,56.

It is also interesting to compare total annual spending per student as a percentage of GDP per capita for the different levels of education in 1997, as follows:

*Table 8: Comparison of total annual spending per student, 1997*

| | Primary | Secondary | Post Secondary non-tertiary | Tertiary |
|---|---|---|---|---|
| | | As a percentage of GDP per capita | | |
| Australia | 17 | 25 | 34 | 51 |
| Austria | 27 | 36 | 32 | 43 |
| OECD average | 19 | 26 | 19 | 45 |

Source: *OECD,* 2000A:95.

In all OECD countries, the percentage devoted to tertiary education was well above that for the lower levels of education. The higher percentage per capita devoted to the primary and secondary levels in Austria may partly be due to a lower proportion of young people in Austria.

It is also noteworthy that while the average expected years of formal education for a 5-year old child in Austria was equal to the OECD average of 15.2 years, and for a 17 year-old tertiary student 1.8 years compared to the OECD average of 2.1 years, the corresponding Australian figures were 16.3 and 3.0 years (*OECD,* 1999B: Figure 1.4).

In 1996, the expenditure on vocational education by enterprises in Australia as a percentage of total labour costs was estimated at 2.5 percent compared to 1.8 percent in the United States. These figures were well below those of Denmark, Portugal and U.K. but above some others (*OECD,* 1998A: Table 3.2).

The distribution of the 25-64 year-old labour force by level of educational attainment for a number of OECD countries in 1998 is shown by the following percentages (*OECD,* 2000A: Table A2.1(b)):

*Table 9: Distribution of the labour force (25-64) by level of educational attainment*

| | A | B | C |
|---|---|---|---|
| | | In percent of total labour force (25-64) | |
| Australia | 38 | 33 | 29 |
| Austria | 21 | 67 | 13 |
| Denmark | 17 | 54 | 28 |
| The Netherlands | 20 | 43 | 281 |
| OECD mean | 18 | 54 | 26 |

[1] Includes ISCED 4. – A = Lower secondary ISCED 2; B = Upper + post Secondary ISCED 3C, 3B, 3A, 4; C = Tertiary ISCED 5B, 5B, 6.

It will be seen that Austria stands out with the highest proportion of the 25-64 labour force with upper plus post secondary education and the lowest with tertiary education. Australia, on the other hand, has the highest proportion with lower secondary education and with tertiary education, and the lowest with upper plus post secondary education.

## 7. The structure of the education system

The following divisions may be distinguished in the Australian formal education and training system:

- Pre-primary
- Primary
- Lower and upper secondary
- Tertiary, which divided into
  - technical and vocational, and
  - university or higher education.

At the school level, the emphasis is on 'the development to the fullest possible extent of the potential of individual students. At the tertiary level, there is greater emphasis on meeting the educational needs of the economy and the society as a whole'. But while universities 'are viewed as having a greater responsibility for advancing knowledge', the technical and further education sector has a more vocational objective (*McKenzie in Philip G. Altbach,* 1989). However, as mentioned elsewhere, these objectives have tended to become blurred in these two sectors in recent years.

The characteristics of the various levels of formal education may be summarised as follows[7]:

*Pre-school education:* ISCED 0

Normal age 3-5; normal duration 2 years.

[7] The ISCED classifications are based on UNESCO Institute of Statistics, *Operation Manual for ISCED-1997.*

*Primary education:* ISCED 1

Normal age 5-12; normal duration 6 years.

*Lower secondary education*[8]*:* ISCED 2

Normal age 12-15; normal duration 3 years; compulsory education applies up to the age of 15, at which age students would normally be at Year 9 or 10 of schooling.

*Upper secondary education:* ISCED 3A

Normal age 16-17; normal duration 2 years; award of Senior Secondary Certificate of Education provides qualification for university entrance.

## Education of students with disabilities

Brief mention should be made here of the facilities provided to school students with disabilities and impairments – visual, hearing, intellectual, social-emotional and multiple disabilities. Such students make up 3-5 percent of the Australian school population.

The policy of the Federal and State Governments is firmly in favour of 'inclusive' education (*van Kraayenoord C. et al.,* 2000:9) for such students, i.e., they should be taught as far as possible in regular rather than specialist or segregated schools; and that they should have access to the same curricula as all other students. Within regular schools, they may be taught in regular classes along with their peers or in special classes for some or all the courses.

The basis of this policy is the belief that regular schools provide a better opportunity for social interaction between students with disabilities and their peers and minimise perceptions of difference between them. To enhance the learning facilities and social interaction of students with disabilities, the lay-out of class rooms and the general physical environment of the school generally, should be appropriately designed. The schools are given special funding to enable the employment of specialist and support staff as well as acquisition of necessary equipment.

For those with severe disabilities who could not reasonably be accommodated in ordinary schools, specialist schools are available; and the matter at which school a disabled student is best placed, is a matter for negotiation between schools, on expert advice, and the parents concerned. It has been estimated that about 1.55 percent of all students are educated in special schools but the extent varies from State to State. In 1992, of those with disabilities, 28 percent were in special schools, 27 percent were in special classes in regular schools, and 45 percent were in the regular classes in regular schools (*van Kraayenoord, C. et al.,* 2000:9).

[8] In some states, the duration of primary education is 7 years, and secondary education 5 years.

## The formal pathways after upper secondary education

There are two main formal education pathways after the completion of upper secondary education:

*Vocational education and training*

The provision of vocational education and training courses is dominated by the Colleges or Institutes of Technical and Further Education (TAFE) which are public institutions. The other providers are private business colleges and industry skill centres of which there are over 3,000 (*Borthwick,* 1999:6). Entry to these courses is less restrictive than is required for university entrance, completion of Year 9 and 10 of schooling being generally acceptable for the former. These courses range from 1 to 4 years. Few systems in the world have such a diverse range of courses as those offered by TAFE – recreational non- award courses, basic education in literacy and numeracy, apprenticeship and technician training, and more advanced courses leading to certificates and associate diplomas in a variety of areas (*Shah,* 2000:1). Australia stands out among OECD countries as having a high proportion of mature-age and part-time students – it ranked first out of 15 countries in the participation rate of 26-29 year-olds, and had the highest proportion (80 percent) of part-time students (*Shah,* 2000:1).

The apprenticeship system has been a feature of vocational training in the trades since the early European settlement of Australia. But it had certain features which made it an unsatisfactory basis for supplying the range of skills needed in the modern era. Its course programmes were limited and not in keeping with the requirements of industry, its method and duration of training were unduly rigid, training was done off-the-job at TAFE, and apprentices were required to be full-time.

To overcome these problems, the 'New Apprenticeship' scheme was introduced in 1998 as an initiative of ANTA, a new body to be discussed presently. The main features of the scheme may be summarised as follows:

- Greater flexibility, in content, training, and assessment methods has been introduced into this area of training in order to make it more attractive and meaningful for both employers and trainees.
- Greater flexibility in the range of training programmes to meet the specific needs of enterprises. Apprenticeships and traineeships have been extended to industry areas not previously included.
- Training programmes even in the traditional trades have been modernised in keeping with technological developments. Enterprises can in many cases select their own training providers and structure the training programmes (training packages) to meet their particular needs under the 'user choice' concept.
- Apprenticeships can be full-time or part-time, and of varied duration ranging from four years full-time equivalent to a year or less for traineeships especially for the service sector.

- Enrolment eligibility ranges from school leaving age upwards with no limit.
- Training can be undertaken at a training institution or at the place of work with trainers and teachers providing formal off-the-job training within the workplace.
- It is now possible for small employers who are not in a position to take on full-time apprentices and those unable to provide a well-rounded range of work experience to apprentices, to group together and to allow the apprentices concerned to rotate among the group of employers in order to obtain full-time work experience. The scheme also enables apprentices who have been dropped from their initial indenture because the enterprise has closed down, to complete their work experience with another employer.
- Another innovation has been to make the apprenticeship and traineeship programmes, in conjunction with part-time work experience, available in Years 11 and 12, the last two years of secondary schooling, with considerable flexibility. The training programme may be based on courses or modules prescribed under industry or enterprise competency standard to be discussed below. It may be delivered by the school, in whole or in part, or by a public or private provider.

  The 'school-industry' programmes are intended to encourage students to stay longer at school and, thereafter, to continue with vocational education at the tertiary level. It is also possible, under the scheme, for a student to be a paid employee under contract with an employer whilst studying at school. The time spent at the workplace is assessed and accredited as part of schoolwork.

  An increasing number of schools have provided school-industry programmes. In 1996, 74 percent of government schools engaged in such programmes, the figure being considerable less for the private schools[9]. However, only a minority of students were involved in the scheme. It was estimated that 12 percent of persons aged 15-20 who were still at secondary schools were undertaking TAFE accredited courses in 1997; and that 30 percent of upper secondary school students were taking at least one VET subject (*ABS,* 1999:4). By 2000, some 167,000 senior secondary students were enrolled in VET courses, about 90 percent of schools offering VET programmes in their curriculum (*Senate Committee Inquiry,* 2000:225).

  The integration of vocational with general education enables a student to obtain the senior school certificate as well as a recognised vocational qualification[10]. In this way, schools are being encouraged to provide two Year 12 streams – one towards higher education, and the other, towards the VET sector.

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[9] The figures for Catholic and independent school were 64 percent and 25 percent respectively. See John Ainley 1998:10

[10] Thus, the TAFE awards, Certificates 1 and 2, can now be awarded to school graduates in the vocational school streams.

- Assistance is available for disadvantaged people by preparing them for apprenticeships or traineeships; and for people with disabilities by subsidising employers to provide suitable workplace facilities[11].
- There are some 300 New Apprenticship Centres spread through the country to provide information and advise prospective apprentices and trainees on all aspects of the scheme.

Apprenticeships and traineeships are based on a contract or agreement between an employer and an apprentice or trainee, including those still at school. Employers of apprentices are paid a government subsidy. In 1997, the subsidy for a full 4-year apprenticeship programme was $ 4,000, while the amount for the one-year traineeship was $ 1,500. The national minimum wage at the time was about $ 19,000. Traineeships generally last about 12 months.

The following figures show the:

*Table 10: Expansion of apprentices and traineeships*

| | Apprentices | Trainees In 1,000 | Apprentices & Trainees |
|---|---|---|---|
| 1995 | 114.6 | 21.4 | 136.0 |
| 1999 | 132.2 | 124.3 | 256.5 |

Source: *ABS,* 2000A:104. The estimates of trainees is very approximate.

Apprentices are mostly in the trades – metal and wood work, construction, engineering and automotive, food and hairdressing. In the last two, females feature prominently, but they make up a very small proportion of the total. Consequently, the overall proportion of male apprentices in 1999 was close to 90 percent. It will be seen that the expansion of trainees has been very much greater; here the gender ratio was 50 percent. It can, therefore, be concluded that the development of traineeships has opened up a larger range of training opportunities for females. Young people dominate apprenticeship numbers with the 15-24 year olds making up 84 percent of the total. However, as in the case of females, a larger proportion of older workers are enrolled in traineeships, the 25-64 year olds making up some 60 percent of the total traineeship enrolment in 1999 (*ABS,* 2000A:105).

The proportion of particular age groups who were apprentices or trainees in June 1999 is shown in the following:

15-19 12.6 percent

20-24 7.4 percent

25-64 1.1 percent

Source: *Senate Committee of Inquiry* (2000:216).

[11] In 1999, 3.1 percent of students were Aboriginal/Torres Strait Islanders, who could be classified as disadvantaged; and 3.8 percent were reported as having a disability. National Centre for Vocational Education Research 1999.

In addition to apprenticeship courses, TAFE provides a wide variety of courses which include pre-employment programmes, para-professional and liberal adult education. In recent years, with increased interest in re-training, updating, active labour market programs for the unemployed and university graduates, particularly in the humanities, seeking vocational qualifications, TAFE has taken on an increasing proportion of adult students.

Although the main provider of apprenticeship training is TAFE, there are some 3,000 registered private providers, and the employer is free to choose the provider for the apprentices contracted to work for the enterprise under the ANTA principle of 'user choice'.

The formal qualification awards issued in the VET sector are:

| | |
|---|---|
| Certificate I | ISCED 2C |
| Certificate II | ISCED 2C |
| Certificate III | ISCED 3C |
| Certificate IV | ISCED 4C |
| Diploma | ISCED 5B |
| Advanced Diplomas | ISCED 5B |

*Higher education (universities)*

Completion of year 12 schooling provides qualification for entry to higher education. The formal qualifications awarded are:

| | |
|---|---|
| Diploma – 1 full-time* | ISCED 5B |
| Advanced Diploma – 1 full-time* | ISCED 5B |
| Bachelor's Degree – 3 full-time years* | ISCED 5A |
| Master's Degree & Post-graduate Diploma – 1 to 2 full-time years* | ISCED 5A |
| Doctorates – normally 2-3 full-time years* | ISCED 6 |

(* or equivalent part-time)

It will be noted that there is an overlap between upper secondary schooling and TAFE (and its private equivalent providers); and between TAFE and higher education in universities. The overlap is reflected in the following Australian Qualifications Framework:

*Table 11: The Australien qualification framework*

| Schools | Vocational education | Universities |
|---|---|---|
| | | Doctoral Degree **6** |
| | | Masters Degree **5A** |
| | | Graduate Diploma **5A** |
| | | Bachelor Degree **5A** |
| | Advanced Diploma **5B** | Advanced Diploma **5B** |
| | Diploma **5B** | Diploma 5B |
| Senior Secondary Certificate | Certificate IV **4C** | |
| of Education*3A | Certificate III **3C** | |
| Certificate II **2C** | Certificate II **2C** | |
| Certificate I **2C** | Certificate I **2C** | |
| * Year 12 | **ISCED in BOLD** | |

## International differences in education and training pathways

The *OECD* (1999:59 *et seq.*) has identified three principal types of pathways through upper secondary education and training and beyond it to work and tertiary education:

– General education pathways, in which a high proportion of upper secondary students take part in general education. Countries falling into this category include Australia, Canada, Japan and the USA, where some three-quarters of such students participate in general education. Broadly, this pathway is a preparation for tertiary study.

– School-based vocational pathways, in which the principal aim of a high proportion of students is to obtain an upper secondary level occupational qualification for direct entry into the labour market. Countries in this category are Hungary and the Czech Republic involving 82 percent and 70 percent respectively of all upper secondary students in these pathways; and to a lesser extent Austria and Finland, where about 40 percent of such students are involved.

– Apprenticeship-type vocational pathways, involving a contractual arrangement with employers and a direct link with the workplace, with the object of securing occupational qualification. This is a dominant feature of the Swiss and German systems, affecting more than 50 percent of all young people; and to a lesser extent (40 percent), the Austrian system.

The small proportion falling outside these pathways generally face difficulties in either further education or employment or both. This group will be considered in some detail in Section 12 below.

A longitudinal study over a period of seven years (late 1980s to mid-1990s) of a sample of 2200 Australian Year 10 students[12] has provided interesting flow-paths for tracing the experiences of these students through their seven post-school years (*McKenzie,* 2000). These are reproduced

[12] This year would generally be the end of compulsory schooling.

below. Of the male and female students, 38 percent and 48 percent respectively, obtained tertiary qualifications (university or associate diploma) or were enrolled in the seventh post school year. The rest did not obtain any tertiary qualifications nor were enrolled in the seventh post-school year. The figures below trace their respective experiences. It will be noted from the figure that only a small proportion 2 percent males and 3 percent females) of those who obtained tertiary qualifications experienced extended unemployment or were out of the labour force over the seven years. This contrasts with those who did not obtain tertiary qualifications. The importance of continued education and training beyond compulsory schooling is underlined by this study.

The study also disclosed that those without tertiary qualifications were more likely to:

– have parents from the lowest socio-economic status (70 percent) than the highest group (39 percent);

– have parents from the educationally least qualified group (67 percent) than parents with a university degree (33 percent);

– be Australian-born (58 percent) or other English-speaking background (61 percent) than from a non-English speaking background (48 percent);

– have attended a Government secondary school (65 percent) than a Catholic (40 percent) or Independent (35 percent) secondary school;

– have a disability or health problem that limited the work they could do (63 percent) than no such disability (56 percent); and

– to have left school early (92 percent) rather than having completed Year 12 (44 percent).

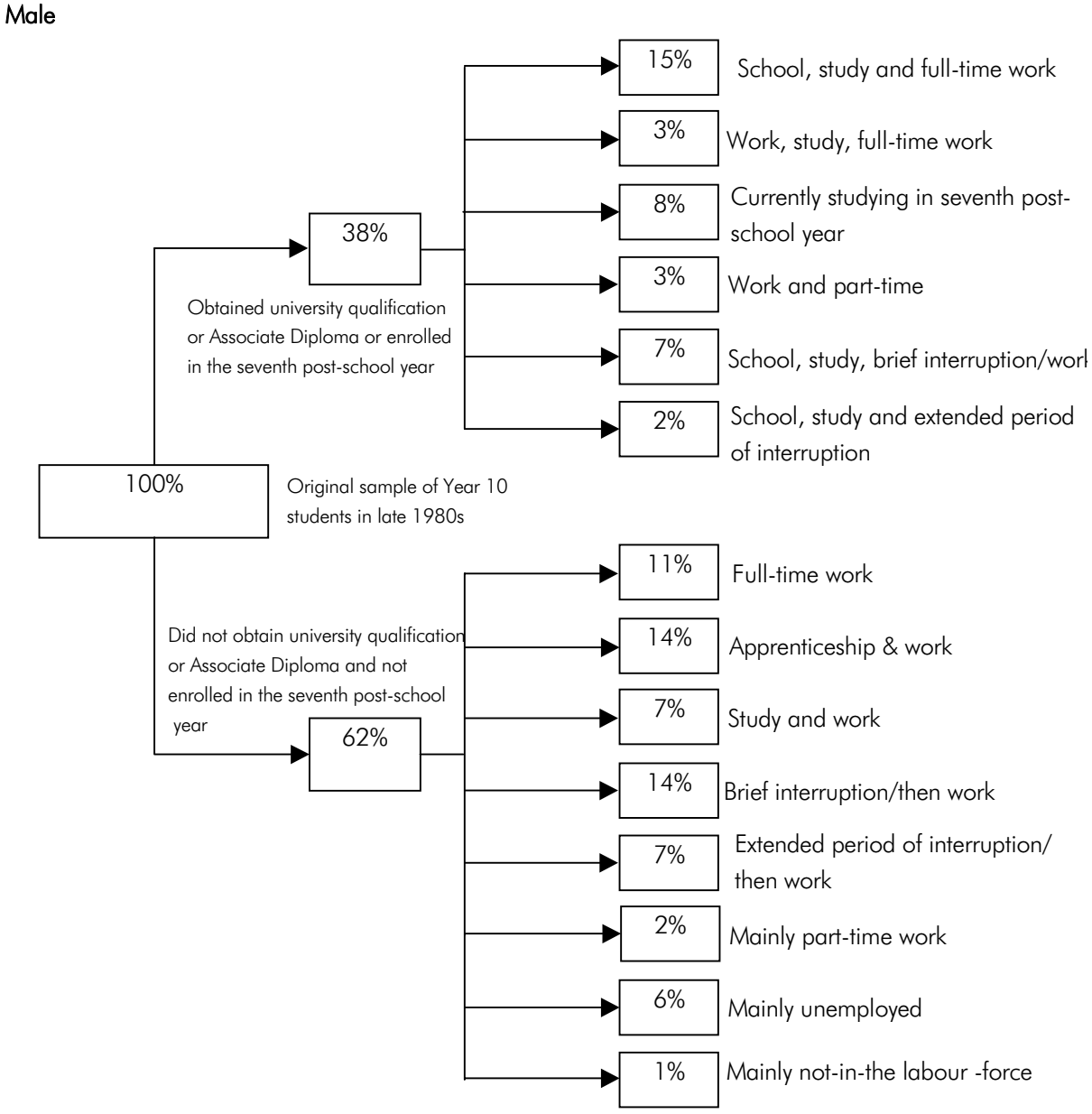
Comparing the main education and training pathways chosen by upper secondary students in Australia and Austria after compulsory education, the following percentages emerge for 1996 (*OECD,* 1999A: Table 2.2):

*Table 12: Education and training pathways of upper secondary students*

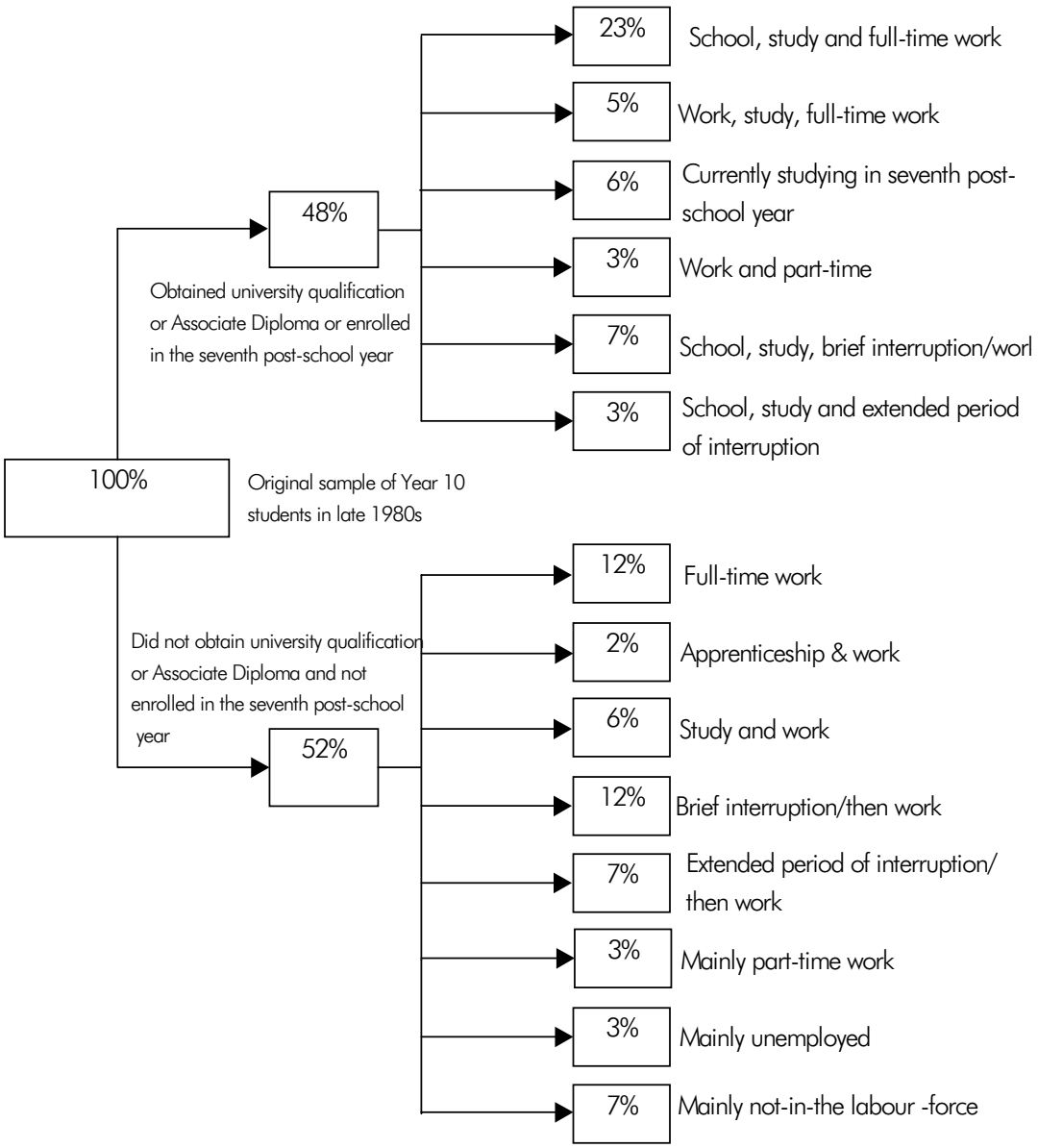
| Pathway | Australia | Austria |
|---|---|---|
| | In percent of a youth cohorte | |
| Apprenticeship type | 3 | 41 |
| School-based vocational | 2 | 37 |
| General education | 94 | 22 |

Source: *OECD* (1999A: Table 2.2).

*Figure: Pathways of Year 10 students from the late 1980s who obtain or do not obtain tertiary qualifications over the first seven years after leaving school*



Female




Source: *Mc Kenzie* (2000).

The contrast between the two countries is sharp. The Australian picture is mirrored by North America and New Zealand; while the Austrian experience was also reflected in Denmark, Germany and to a lesser extent, the Netherlands. It appears that high proportion of upper secondary students in general education is associated with high rate of participation of young people in tertiary education, as shown in North America and Australia, in contrast to Austria and Switzerland (*OECD,* 1999A:15).

Governments in Australia have placed high priority on VET in recent years, one outcome of which has been the development of VET, alongside general education, at upper secondary school level, as discussed above. While more recent Australian figures would show a higher percentage in the apprenticeship and school-based vocational categories, it remains true that the contrast with Austria is marked.

The pathways of young people through education and into work in Australia are more varied and individualised as a result of the diverse post school education and training options which are now available The Australian education system with its rather loose links with the labour market (in contrast to the Austrian and German, for example) tends 'to have a strong emphasis on general education oriented to university study, modularisation of curriculum provision and courses . . . [and] most young people acquire their vocationally-specific skills on-the-job, rather than prior to entering employment' (*McKenzie,* 2000:5) The question arises whether the Australian mixed pathway should be preferred to divergent pathways of the Austrian type. One expert (*McKenzie,* 2000:5) view is that

*The Australian approach to education and training offers great flexibility to young people, especially in the tertiary education sector. However, on the downside Austrian education perhaps offers less certainty for young people than in countries where there is a tighter connection between education and labour market systems. Those who leave school early in Australia without any recognised qualifications tend to struggle to find stable work. Because of the relatively strong emphasis on general education programs up to the end of secondary school, early school leaving tends to be associated with a disadvantaged social background and difficulty in coping with school.*

It is arguable that the mixed pathway of the Australian type provides a better balance between general and vocational education and establishes a better basis for later learning developments[13] (OECD 1999A:68). However, before any firm conclusion can be drawn from these figures, it would be necessary to examine in detail the curriculum of the Austrian dual pathway system. There is increasingly a substantial vocational content in the Australian approach to general education.

[13] This point is discussed further in Section 12 in connection with lifelong learning.

# 8. The state of the labour market for youths and young adults

## Australia and international

The state of the labour market for youths and young adults provides an important background against which to analyse education and training developments. The marked increase in **education** participation of 15-24 year-olds to be discussed presently, has been accompanied by a sharp decline in full-time **labour market** participation on the one hand, and a growth in part-time employment on the other. These developments are to some extent interlinked: the reduced opportunity to find full-time employment lowers the opportunity cost of continuing with education and training; while part-time employment provides financial support for full-time study.

A number of statistical facts are of interest.

- Through the 1990s, the ratio of youth (15-19) to adult unemployment (20-64) in Australia ranged from 2.6 to 2.2 (*OECD,* 1999A: Table 2.8). This was the same as the OECD average but significantly higher than the ratio for Austria, which did not go higher than 1.7. In 1998, 51.6 percent of 15-19 year olds in Austria were unemployed for 6 months or more (Table 2.10) while the figure for Australia was 41.9 percent. But the corresponding figures for the 20-24 year-olds were 19.3 percent and 45.0 percent.
- In 1998, the unemployment to population ratio for 15-19 year olds was 10.1 percent for Australia, 5.8 percent for the OECD average, and 3.6 percent for Austria; while for 20-24 year-olds, the Australian figure was 9.6 percent, the OECD average was 9.5 percent, and the figure for Austria was 3.5 percent.
- In 1998, the labour force participation rate of 15-24 year-olds in Australia was 67.6 percent. This was among the highest in OECD countries, being exceeded by Denmark (71.5 percent) and the U.K. (69.5 percent), *OECD* (1999A: Table 1.1). Moreover, in Australia, the labour force participation rate of 15-19 year-olds was 54 percent compared to 39 percent in Austria; while the unemployment rates for this age cohort were 19 percent and 9 percent respectively (Table A4.1).
- The comparatively high labour force participation in Australia is associated with a comparatively high proportion of the 25-64 age group with less than upper secondary education attainment – 81 percent for men and 55 percent for women, compared to 72 percent and 48 percent for Austria, and 78 percent and 51 percent respectively for the OECD country mean (*OECD,* 2000A:269).
- The percentage of 15-19 year-olds working part-time, increased from 41.7 percent in 1990 to 64.6 percent in 1998 (*OECD,* 1999A: Table 4.2) The 1998 figure is among the highest in

OECD countries being substantially exceeded only by the Netherlands; while the figure for Austria was merely 5.6 percent.

- Further evidence of a higher proportion of students being employed while studying as compared with Austrian students, is reflected in the following percentages for 1996 (*OECD,* 1999A: Table 4.1):

*Table 13: Percentage of student population working in the labour market, 1996*

| | Aged 15-19 | Aged 20-24 | Aged 25-29 |
|---|---|---|---|
| Australia | 39.7 | 62.9 | 75.7 |
| Austria | 1.3 | 19.3 | 43.5 |

- The proportion of 15-19 and 20-24 year-olds who were unemployed and not in education in 1996 were 6.0 percent and 7.5 percent, respectively. These compare with the OECD average of 3.9 percent and 9.8 percent, and with Austria of 1.9 percent and 3.7 percent (*OECD,* 1999A: Table 4.3).

- The proportion of 15-19 year old non-student unemployed to the non-student population in 1996, was 23 percent for Australia. This was significantly higher than those of most OECD countries including Austria (10 percent) but lower than France, Greece and Spain (*OECD,* 1999A: Table A4.3).

- The comparative labour market disadvantage of low qualified (less than upper secondary education) 20-24 year olds as a proportion of that age group in 1996 (*OECD,* 1999A: Table A6.1) were as follows:

| | |
|---|---|
| Australia | 26 percent |
| Austria | 18 percent |
| OECD Average | 20 percent. |

## The contrast with Austria

The above figures should be viewed in conjunction with the significantly higher proportion (73 percent) of the 25-64 year old Austrian population in 1997 having completed upper secondary education or higher compared to the corresponding Australian population (56 percent) in 1998 noted above.

In summary, as compared with Austria, the Australian labour market shows a ***significantly higher***:

- rate of unemployment of 15-24 year olds,
- percentage of 15-19 year olds non-student unemployed to non-student population,
- labour market disadvantage of low qualified 20-24 year olds,

- percentage of 15-24 year olds who were not in education,
- percentage of 25-64 year olds who attained less than upper secondary education,
- labour force participation of 15 -24 year olds,
- part-time youth employment and students in employment.

These figures show the existence of the well-established inverse relationship between the unemployment rate of young people and their educational attainment; and they call for an explanation of the particular circumstances applying respectively to Austria and Australia which may account for the above differences between the two countries.

Was the lower educational attainment due to the higher overall rate of unemployment in Australia over the years or was the causation in the opposite direction? Was there a lesser financial incentive and/or lesser means for young people in Australia to undertake education and training; seeking instead to exit schools early and to enter the labour market, even on a part-time basis? Was the lack of financial incentive and means reflected in the lower government contribution to education and training relative to GDP in Australia? Is it a reflection of a higher proportion of a socially and economically disadvantaged background of young people in Australia inadequately assisted by welfare policy? Is the educational and training system responsible for the different labour market outcomes of the two countries: in one, the Austrian educational system, closely geared to immediate labour market requirements, while the other is less so related? Or was it due to a difference in active government policy over the years on the retention of higher proportion of young people in education and training?

# 9. Participation in education and training

## Significant increases since the 1980s

Despite the relatively higher percentage of low qualified persons in the 20-24 age group in Australia compared to Austria in 1996, the last 10-15 years have seen a substantial increase in education participation in Australia, especially in year 12, the final year of schooling. Based on longitudinal surveys, the following figures (*Long et al.,* 1999: ix-x) provide a picture of the significant changes which have occurred in the Australian education and training scene between 1980 and 1994:

- Year 12 completions more than doubled, rising from 35 to 78 percent.
- About half of those who completed Year 12, enrolled in higher education.
- Participation in post-school education and training increased from 49 to 67 percent.

- Participation in higher education rose from 20 to 38 percent.
- Participation in non-apprenticeship TAFE increased from 13 to 20 percent[14].
- Participation in apprenticeship declined from 18 to 12 percent;. but this was partly offset by an increase in traineeships[15].

However, these rates of increase have not been sustained through the 1990s. About 43 percent of the 1995 school-leavers, were not attending tertiary education in 1996. Of these:

- 16 percent were full-time employed;
- 11 percent were part-time employed;
- 12 percent were unemployed; and
- 3 percent were not in the labour force.

In the context of a marked increase in the rate of unemployment, especially among the less skilled, governments have responded in two ways. One, by increasing funding for tertiary education, especially VET; and two, by changing the operation of the VET system by policies and programmes designed to facilitate a greater output of skills through a greater diversity, accessibility and flexibility of education and training pathways. This is discussed in section 10 below.

## But decline in school retention rate since 1992

School retention rate at year 12 in 1982, was 36 percent. By 1992, it had risen to 77 percent, the high point of school retention rate; but it has since slipped down to 71 percent. However, between 1992 and 1999, the rate fell from 73 percent to 66 percent for males, and from 82 percent to 79 percent for females. This was associated with a fall in the general of unemployment rate (*ABS,* 2000:82). The decline in the school retention rate has been greater for those from low socio-economic backgrounds; and greater for government schools than for private schools, the former falling to 66 percent while in the case of private non-Catholic schools the retention rate fell form 100 percent to 97 percent (*Ainley,* 1998:2,5).

Australia is the only OECD country in which school participation has actually fallen in the 1990s (*Curtain,* 1999). Nevertheless, the increase in education participation in Australia in earlier years stands out against the experience of other OECD countries. Between 1981 and 1994, the

[14] Compared to those in higher education, these students tended to come from a lower socio-economic background, attended government rather than private schools, and were in the lowest quartile of early school achievement.

[15] These students are from the middle socio-economic distribution, who had attended government rather than private schools and who were in the lower three quartiles of early school achievement. It should be noted that the number of apprentices has picked up since 1994, as will be seen below.

participation rate of 17-year olds in all forms of education rose from 60 percent to 92 percent, bringing Australia into line with such countries as France and Germany and well ahead of the USA and the U.K. (*OECD,* 1997: Table 1).

## Blurring the distinction between TAFE and universities

In May 1996, the destination of school leavers aged 15-19 to universities was 29 percent while their destination to TAFE was 24 percent (*Ainley,* 1998:11). This may suggest that there is still a popular perception that VET is a second best option to university education (*OECD,* 1997:7).

The relative increase in university enrolment is even more striking for all age groups over the period 1989-1999, as the following figures show:

*Table 14: Increase in university enrolment rates between 1989-1999*

| Age group | VET | Universities |
|---|---|---|
| | Percentage changes 1989-1999 | |
| 15-19 | – 4 | 37.9 |
| 20-24 | 34.2 | 76.3 |
| 25-34 | 17.1 | 63.5 |
| 35-44 | 36.2 | 66.0 |
| 45-54 | 47.4 | 178.6 |
| 55-64 | 7.3 | 87.5 |
| 15-64 | 19.5 | 65.5 |

Source: *ABS* (2000:94).

The large percentage increase of the 45-64 group may give an exaggerated impression of the actual numbers involved. This group made up only 11 percent and 7 percent of the total enrolment in VET and universities respectively in 1999.

However, the change in name of the vocationally oriented institutions known as Colleges of Advanced Education (the equivalent of the U.K. Polytechnics) to universities in recent years, has blurred the distinction between universities as primarily knowledge advancing institutions, and other tertiary institutions. There is increasing encroachment on each other's traditional territories. Partly for financial reasons, especially in view of increased financial stringency in the allocation of federal funding, universities have tapped the demand for vocationally oriented diplomas as a source of income; while TAFE colleges have been prone to 'academic creep' to meet public perception of prestige and what is regarded as 'up-market' education, and to fill the gap left by former Colleges of Advanced Education when they amalgamated with existing universities or acquired university designation. This is reflected in the qualifications framework shown above (*Anderson,* 1998).

Students have moved in both directions, employment difficulties confronting particularly graduates in the humanities, have led them to seek vocational qualifications offered by TAFE. In 1997, some 8 percent of total VET students moved to universities and about 5 percent moved in the opposite direction. Furthermore, some universities offer combined university and TAFE courses, enabling

students to qualify with a degree and a VET qualification (*Borthwick,* 1999:12). It should be noted that since the conversion of colleges of advanced education to universities, nursing and other para-medical training is now conducted at universities.

Another development at TAFE colleges is the increasing proportion of adult students (including worker re-training, active labour market programmes for the unemployed) and university graduates seeking vocational qualifications. Concern has been expressed at this development because the curriculum and teaching approaches in the TAFE programmes are becoming less suited to the needs of school leavers (*OECD,* 1997: 7).

In 1996, about 80 percent of the 15-24 year olds enrolled at TAFE, were part-time (*Shah,* 2000:1) compared to 40 percent (1995) in the university sector, apprentices accounting for 80 percent of the high TAFE figure (*OECD,* 1997: 8).

*Table 15: Educational participation rates of 17-19 year olds by type of education*

| | Schools | TAFE | Higher education | Total |
|---|---|---|---|---|
| 1975 | 13 | 20 | 11 | 45 |
| 1985 | 16 | 24 | 11 | 50 |
| 1990 | 20 | 25 | 15 | 60 |
| 1995 est. | 24 | 26 | 17 | 66 |

*Note:* Changes in data collection affect comparability over time. The TAFE enrolments may include a small number of joint enrolments by school students. – Source: OECD 1997: Table 2.

*Table 16: Participation rates of 20-24 year olds in vocational and university education, 1997*

| | Males | Females | Persons |
|---|---|---|---|
| | | In percent | |
| Vocational education | 19.1 | 15.1 | 17.2* |
| University education | 14.7 | 17.2 | 15.9 |

Source: *Burke* (1999:162). - *The proportion of the 15-64 age group in vocational education and training in 1999 was 11.4 percent; and for the 15-24 age group, 20.6 percent (ANTA 1999:34).

## On-the-job training

An Australian Bureau of Statistics survey undertaken in 1997, reported that 80 percent of wage and salary earners had undertaken some form of training in the 12 months prior to the time of the survey. Of these, about 72 percent undertook on-the-job training (*Borthwick,* 1999:2).

A snap-shot of employer provided training in Australia for the 12 months ending February 1997, shows the following picture:

- Just over 90 percent of employees worked for an employer that provided some kind of training.

- Some 61 percent of employers provided training, with 35 percent providing structured training and 53 percent providing unstructured training[16].
- Well over 90 percent of those employing 20 or more employees, provided some form of training; while 57 percent of firms employing less than 20 persons provided training (90 percent of firms were of this small size).
- Nearly all public sector firms provided training, nearly all giving both structured and unstructured training.
- Almost all firms which employed apprentices or trainees provided structured training; and a substantial proportion of these also provided unstructured training.
- One third of employers that spent 3 percent or more of the gross wage and salaries bill employed an apprentice or trainee.
- Of the factors which limited structured training, about two-third of employers attributed it to cost and time constraints, while over 40 percent reported that their employees were adequately trained. The larger employers were less likely to report that their employees were adequately trained and more likely to give prominence to cost and time constraints.
- The most important factors leading employers to increase expenditure on structured training were technological change and/or change in management practices or philosophies and/or recruitment of new employees.

An OECD analysis (1998: Table A3.5) of participation of 25-64 year-olds in continuing education and training by type of training and by labour force status shows that in 1994-95, of employed and unemployed persons respectively:

- 42.2 percent and 28.3 percent were participating in all types of training,
- 38.1 percent and 23.8 percent were participating in job related training.

The Australian figure for all types was close to the OECD average but some 4 percentage points higher for job related training[17]. The Australian margin was substantially maintained in relation to participation in job-related training by level of education and by age group (*OECD,* 1998A: Tables A3.6 and A3.7).

[16] It is fair to assume that unstructured training is to be expected in the normal course of employing new labour and not an event which deserves to be regarded as significant. Most enterprises that provided unstructured training did so in the form of 'showing or explaining how to perform the task on the on-the-job'. This was especially so for the lower skills. Reading manuals, journals, training notes, etc. more commonly applied to employees with higher skills.

[17] There were no figures for Austria.

The average duration of job-related training undertaken by this group in 1994-95 averaged 44.2 hours per person employed for Australia, compared to 46.4 hours for the average of the 10 OECD countries examined, ranging from 23.6 for Poland and 72.2 for New Zealand (Table A3.4).

It is significant that the participation by employed adults (25-65) in job-related training varied directly with the level of education. In 1994-95, the figures were (*OECD,* 1998A: Table A3.6):

- 26.2 percent for those with less than upper secondary education,
- 36.4 percent for those with upper secondary education,
- 53.4 percent for those with tertiary education.

By age group (Table A3.7), the participation rates varied inversely with age:

- 42.9 percent for the 25-34 year-olds,
- 41.7 percent for the 35-44 year-olds,
- 30.7 percent for the 45-64 year-olds.

*Table 17: Source of financial support for job-related continuing education*

| | Percentage of courses | | |
|---|---|---|---|
| | Employer | Employee | Government |
| Australia | 20 | 74 | 4 |
| The Netherlands | 78 | 19 | 6 |
| U.K. | 84 | 9 | 4 |
| USA | 76 | 20 | 6 |

Source: *OECD* (2000A:202).

These figures show the greater reliance on employees supporting their training, on the basis of courses taken, in Australia compared to the countries shown.

## 10. Recent developments in VET

The present educational structure was outlined briefly in section 7 above. This section will deal in greater detail with recent developments[18].

As noted earlier, growing unemployment, especially among the less skilled, in the context of global competition, a shrinking manufacturing base, and fundamental changes in technology and work practices, together, provided the impetus for government action for a more effective VET system. The result was the development of a national approach to VET for all ages with the mission

[18] This section draws heavily on various ANTA publications which are not referred to in detail.

*to ensure that the skills of the Australian labour force are sufficient to support internationally competitive commerce and industry and to provide individuals with the opportunities to optimise their potential (ANTA, 1998A:8).*

In essence, a national system is considered as providing the opportunity for the award of qualifications which are portable and flexible in its composition, to meet the differing needs of industries and enterprises. *Maglen – Hopkins* (1999) maintain that 'the national strategy is unique in Australia, in that it is comprehensive, interventionist and the product of federal and state/territory governments acting corporately.'

## The objectives of the system

The new system's objectives are: (*ANTA,* 1998A:3)

- equipping Australians for the world of work,
- enhancing mobility in the labour market,
- achieving equitable outcomes in vocational education and training,
- increasing investment in training,
- maximising the value of public education and training expenditure.

## The establishment of ANTA

The basis of the new approach was the creation in 1992, by agreement of the Federal and State Governments, of a statutory body, the Australian National Training Authority (ANTA) which delegates various issues and processes to its several committees. The ANTA is administered by a Board consisting of representatives of employers, unions and education. It advises and is responsible to the ANTA Ministerial Council made up of federal and state ministers for vocational education and training. The Council sets annual national priorities to be implemented by the Board. Thus, for example, the national priorities for 1999 were:

1. Implementing New Apprenticeships.
2. Achieving diversity and flexibility to meet client needs.
3. Improving language, literacy and numeric skills.
4. Implementing the National Training Framework.
5. Increasing industry investment in training.
6. Providing greater opportunities and improved outcomes for under-represented clients.

7. Achieving greater efficiency.

The national priorities for 2000 are:

- Consolidation of National training arrangements.
- Achieving diversity and flexibility to meet the needs of all.
- Value for money.
- Changing attitudes to training.

In 1998, total Australian spending on VET was $ 8.6 billion (1.5 percent of GDP), of which $ 3.7 billion was government expenditure, $ 3.9 billion was private enterprise expenditure, and nearly $ 1 billion expenditure by individual trainees and their families. Some 38 percent of the government expenditure came from the federal government (*ANTA,* 1998B:83).

## The national training framework

The National Training Framework is an agreement between the Federal and State Governments on the regulation of the VET system. It is based on two key elements – the Australian Recognition Framework and National Training Packages. The Australian Recognition Framework (ARF) prescribes principles, protocols and standards on which skills and qualifications are recognised uniformly throughout the country. This involves nationally agreed registration requirements and rigorous monitoring and auditing processes of providers (Registered Training Providers) to ensure quality assurance. The implementation of the ARF is primarily the responsibility of the States.

To provide a consistent system of recognised qualifications throughout the country regardless of state borders, and so to facilitate labour mobility, the Australian Qualifications Framework (AQF) was established, similar in concept to the British National Vocational Qualifications. This consists of 12 qualification levels, from senior school certificates to doctorates, as shown in the box in section 7 above. The National Training Packages are formulated consistent with the AQF.

The National Training Packages provide the basis for nationally recognised components for training and assessment of various skills. An important feature of the National Training Framework is the establishment of industry training advisory boards (ITABs), of which there are 20, to advise ANTA on industry training priorities and to develop Training Packages. An ITAB is usually an incorporated company, the directors being representatives of employer associations and unions, and people drawn from the businesses, large and small, in the industry. The ITABs develop skill standards which establish the basis for curricula and assessments for VAT providers and vocational certificates. The standards are also tailored to the particular needs of small businesses and are subject to continuous review in the light of technological changes and best practices.

A feature of the current reforms of the VET system is that it is competency based, i.e., based on what the students know and are able to do, rather than by accumulated credits and time served in education and training. This philosophy is inherent in the development of Training Packages.

The following points clarify the significance of Training Packages:

- Training Packages form the basis of all nationally organised VET in Australia covering apprenticeships as well as other training arrangements.
- They are developed, at the request of ANTA, by national Industry Training Advisory Bodies (ITAB's) following research as to their need.
- A Training Package identifies a particular or section of an industry or enterprise competency needs, the appropriate assessment guidelines and the qualifications awarded from such assessment.
- A Package is effectively a grouping of competencies in modular form related to the work functions and needs of the industry or enterprise in question or, where appropriate, across other industries. In some cases, trainees are required to complete a number of modules before they can be assessed as competent in a particular unit of competency. In other cases, a single module may be all that is necessary.
- To ensure its acceptance by industry and other interested parties, it is developed following intensive consultation with relevant employer and employee groups within an industry as well as groups outside the industry, in order to facilitate, where possible, cross-industry integration and recognition. The draft Package goes through a series of validation and refinement processes – by the State Training or Recognition Authorities, the Department of Education, ANTA, the National Training Framework Committee, and ultimate to the Training Ministers for their endorsement.
- A variety of training delivery options is available to ensure access to as many as possible, especially to those in remote and rural areas.
- Learning strategies are flexible and depend on the requirements of particular industries as expressed by their competency needs and also by the location of learners for whom various approaches are available – skill centres, learning manuals, resource kits, on-the-job coaching, computer-based learning, etc.
- Qualifications are awarded on the basis of the direct assessment of competencies to establish whether an individual can perform to the standards laid down in the Training Package rather than simply against the learning outcomes of a time-based course of instruction.

- To facilitate portability and national recognition of achieved skills, certification is on the basis of a coherent national system expressed in the Australian Qualification Framework referred to above which sets out the range of qualifications from Certificate 1 to Advanced Diploma.
- Training packages continue to be developed in order to cover all industries and are reviewed in the light of changes in technology and work practices.
- In keeping with modern developments, data base access through the internet is available giving detailed information on registered training providers, accredited courses and training packages.

## The training providers

The providers of training and/or assessment, known as Registered Training Organisations (RTOs), undertake to train on the basis of the relevant Training Packages or, where a Package is not available, on the basis of accepted VET competency requirements and standards. Registration is based on the organisation establishing the adequacy and quality of its resources to undertake the particular type of training, to perform assessments, and to certify the qualifications of trainees in accordance with the principles, protocols and standards of the Australian Recognition Framework. This provides a comprehensive approach to national recognition of VET, its competency requirements, its training processes, and its certified qualifications. RTOs are subject to monitoring and auditing by a designated State body; in Victoria, the Office of Post Compulsory education and Training.

TAFE colleges are the main providers of VET but there is large number of private providers – estimated at over 3000. Moreover, private providers delivered training to nearly 6 percent of publicly funded VET students (*Borthwick,* 1999:6,12). In 1999, the distribution of all VET students by provider type was as follows:

| | |
|---|---|
| TAFE and other Government | 74.8 percent |
| Community | 14.3 percent |
| Others (private) | 10.9 percent |

Source: *ANTA* (1999B).

Providers are chosen on the principle of 'user choice'. The users – employers and apprentices/ trainees – negotiate the location, mode of delivery and other aspects of training with the provider of their choice. The concept underlying this principle is that the availability of choice will drive competition among providers and promote the best interests of the users. But, more recently, disclosures of shortcomings in the operation of the principle, about which more will be said presently, have led some States to restrict the application of the principle.

The flexibility of the providers is reflected in a number of ways. Training materials and methods are adapted to suit the background of the trainees; for example, aborigines are more suited to hands-on learning than through the conventional training manual. Wherever possible, assessment methods are adjusted to individual needs; for example, people with physical disability or literacy problems may be given oral assessment without compromising the integrity of the required standards. Also, where necessary, assessors travel to outlying areas to do the assessments.

### Research and evaluation centres

Another Committee of ANTA is the National Research and Evaluation Committee (NREC) which reports to the ANTA Board on research strategy and plans, and disseminates research findings generally to ensure the implementation of any improvements in VET. In addition, there are several research centres, which are funded by ANTA.

- Research Centre for Vocational Education and Training, which is located at the Sydney University of Technology. The research programme of this Centre includes research into industry training and employment, competency-based training and assessment, professional development, and access and equity and vocational education.
- Centre for the Economics of Education and Training at Monash University. This Centre has worked on the changing demands of the economy for and supply of VET; on the efficiency and effectiveness in the provision and distribution of VET; and the private and public funding of such provision and funding.
- Centre for Research and Learning in Regional Australia based at the University of Tasmania. This Centre's areas of study focus on the changing nature of work; small business; the transition from school to work; and access and equity issues.

## 11. Evaluation of ANTA's role

On its face, the recent developments in the strategy, structure, standards and funding of VET provide an ideal model for meeting the objectives of the system noted above: equipping Australia for the world of work; enhancing mobility in the labour market; achieving equitable outcomes in VET; maximising the value of VET expenditure. The Federal Minister of Education has described it as a training system which is 'world leading' and that 'many overseas countries, including Germany, are now looking at our system with envy' (*Kemp,* 2000:5).

There are indicators which suggest that, overall, the system is working reasonably well. In a 1999 survey, of a representative sample of employers who employed recent VET graduates, the following agree/strongly agree (ASA) responses were drawn (*National Centre for Vocational Education Research,* 1999A):

- While 83 percent ASA that they were satisfied with the VET system, and 69 percent ASA that the VET system was providing graduates with skill appropriate to employers' needs, 85 percent and 77 percent ASA that there should be more experience or work placements as part of VET, and that the VET system needs to provide more practical job skills.
- 82 percent ASA to competency-based training, and 68 percent ASA that it is difficult to tell what a person can actually do from their educational qualifications.
- The survey also showed changes in labour force participation following completion of training courses: comparing percentages involved before and after study, the percentage of full-time employees increased; and the percentage of part-time employees fell, as did those looking for work.
- The module load completion rate was about 80 percent, as was the module pass rate.

ANTA has developed Key Performance Measures (KPMs) for the purpose of monitoring the VET objectives in order to ensure 'efficiency' effectiveness and accountability', and these are reported on annually. It has published numerous papers and pamphlets about its activities and the features and facilities for VET; it has a web page with access to its publications; it funds research to a number of research institutions; and it holds conferences periodically to draw fresh ideas into the public forum.

However, the system is not without its critics. Its policy settings have been questioned and its deficiencies in applying its principles and meeting its objectives were the subject of a recent Senate Committee Enquiry. Some of the criticism are outlined in what follows.

## Traditional trade skills

Despite all the promotional efforts of the ANTA system, a chronic shortage of certain traditional trade skills exist, partly the result of a spurt in economic growth. The recent *Senate Committee of Inquiry* (2000:173) noted that the category of students generally associated with traditional apprenticeships has declined from about 53 percent of the total number in training at March 1998 to 43 percent at March 2000. A survey by the Australian Chamber of Commerce and Industry of its members, the issue of shortage of trade skills had risen from seventeenth highest issue of concern to the second highest (*Department of Education Training and Youth Affairs,* 2000). To deal with the problem in anticipation of further growth in certain industries, the Federal Minister of Education and Training, supported by the main employers associations, has taken the initiative to establish working parties in those industries experiencing severe skill shortage, to investigate the reasons for the shortage and to develop action plans for the Government to implement to alleviate the problem. Initially three industries- engineering, automotive and electrotechnology – have been investigated; and another three – building and construction, rural and food trades – are currently under investigation.

A number of factors have been drawn out of the investigations which lie behind the inadequate supply of apprentices and trainees and a high drop-out rate among those who had entered the system in these industries including inadequate employer investment in training, poor industry image among school leavers, inadequate and uninformed career guidance, insufficient flexibility in training delivery, and inadequate pay of apprentices.

## Training packages

Another expression of concern relates to the concept of Training Packages which, although in principle allowing considerable flexibility in qualifications, is seen as placing severe restrictions on curriculum designs. It is also argued that insufficient reliance on educators in the framing of Packages has led to an undue narrowing of the curricula, neglecting to include broader 'life skills' (literacy and numeracy) in them and giving insufficient weight to generic core skills and the transferability of skills between workplaces (*Campus Review,* July 19-25; *National Centre for Vocational Education Research,* 2000A). Much the same point was made by an employer association, the Australian Industry Group, in its submission to the *Senate Committee of Inquiry* (2000:156). The Senate Committee, while supporting the concept of Training Packages, reported that the evidence before it suggested that 'their quality, in terms of content and implementation is so variable that their effectiveness overall is at risk' (p. 144). The Committee recommended that an appropriate body within ANTA should provide improved and clearer specifications of key competencies[19] in the National Training Packages (p. 158).

## Assessment and training methods

Yet another item of disquiet relates to the method of assessment under what is termed 'competency based training'. The more traditional method of assessment is time-based and contingent on prescribed course of training having been undertaken. Such training is based on certain courses of instruction to acquire knowledge, both conceptual and practical, for the development not only of certain specific skills but also skills of a more general kind to enable the worker to acquire transferable skills and develop the potential for a career path. A certain minimum time span is usually prescribed for the completion of the course before the student may be assessed.

In contrast, the competency-based test requires no pre-requisites as to form, content or minimum time-line of instruction. The basic test of competency is by observation of the performance of the trainee. It is an objective 'behaviouristic' test. If the performance is up to the required standard, the

[19] Developed by the Eric Mayer Committee in 1992 and comprising the following 'competencies': Collecting, analysing and organising information; Communicating ideas and information; Planning and organising activities; Working with others and in teams; Using mathematical ideas and techniques; Solving problems; Using technology.

trainee is deemed to have the necessary qualifications to perform certain specified tasks and is certified as such.

The critics argue that such a test is too narrow in scope and runs the danger of making robots of people. It does not test problem-solving skills or establish breadth of knowledge or ability to respond to innovations – of product, processes or forms of organisation. These wider abilities, it is argued, are necessary for the survival of an enterprise in the modern economy.

However, the real issue is in the standard of assessment. The term 'competency based training' is a confusing misnomer; it is a method of assessment rather than of training. If the assessment searches for the broader skills explicitly required in traditional training, then much of the criticism on this *method of assessment* falls to the ground.

In this connection, the quality of training assessment has been a particularly contentious issue, especially in the rapidly growing service sector. The basis of the criticism is that it tends to be based, inappropriately, on the manufacturing model where there is a tangible output of performance which can be assessed fairly objectively. In the service sector, the performance of the trainer and the trainee are rather more difficult to evaluate. It places considerable reliance on the quality of training and assessment. The alleged poor quality of many workplace trainers is discussed below.

This problem is connected with the VET system's encouragement of workplace rather than institutional training. In the case of the newly developed traineeship scheme under the New Apprenticeship model, there is undue reliance on on-the-job training to the neglect of off-the-job training. There is a confusion between 'learning on the job' and 'workplace learning'. The former does not preclude practical on-the-job properly structured workplace training; whereas many workplaces, especially small ones, are inadequately equipped for a well-rounded range of training. Learning tends to become more and more individualised, creating transferability problems.

One study of the subject maintains that 'both the training and the outcomes under the 'user choice' system in Queensland are of highly variable and dubious quality particularly where full on-the-job arrangements are in place (*Smith,* 1999). The existence of malpractice is also alleged – the assessment is either frequently poorly conducted or certain providers deliberately misreport trainee knowledge and skills (*Smith,* 1999:viii). The following criticism were also made (p.ix):

– the lack of quality delivery and outcomes associated with on-the-job training, particularly of trainees;

– a decreasing emphasis on personal skills [literacy and numeracy] in training curriculum;

– competency-based training, the segmented nature of which is believed to be creating a workforce which lacks the capacity to integrate skills effectively; and

– competency-based assessment, which is believed to encourage mediocre performance and to discourage excellence.

Furthermore, the wide dispersion of workplace training makes any reasonable degree of monitoring and quality consistency problematical. In the circumstances, the 'contract of training', which is the basis of employer training subsidy, is at risk of becoming a 'contract of employment' with the opportunity open to unscrupulous employers to obtain subsidised cheap labour.

## Quality control: monitoring the training providers

The rapid growth and diversification of the vocational training system, its flexibility, the introduction of workplace training referred to earlier, together with reliance on the operation of market forces in the form of 'user choice' in the provision of VET, have led to concerns about the quality of apprenticeships and traineeships. As mentioned earlier, the number and range of workplaces where training occurs is so large as to make monitoring auditing of these workplaces by the State monitoring bodies problematical (*Schofield,* 2000:6).

The notion of 'user choice' and a competitive model, while commendable in theory, requires that users have good knowledge of quality training; and also that employers are not led to employ providers mainly on the basis of a 'competitive' price with a narrow enterprise- specific approach to training. With over 3,000 providers in the field vying for contracts, doubts have arisen about the prospects of proper auditing of training standards and trainee quality, one the key processes of the system, in order to provide nationally consistent qualifications, one of the main objects of the system. The system tends to become virtually self-regulating with serious risk to the quality of skill output. Doubts about quality are compounded by the fact that a substantial number of trainers have no formal qualifications and themselves are in need of professional development (*Smith,* 1999).

## Co-ordination between training providers and employers

It has been argued that there is a general lack of co-ordination between training providers and employers, especially at the regional level, and that new co-ordination mechanisms are needed. Further, that the New apprenticeship Centres tend to make placements without properly matching the quality requirements of the training programme with the capacity and needs of the employer and the competence of the trainee (*Hall,* 2000).

The submission of the Australian Chamber of Commerce and Industry to the *Senate Committee of Inquiry* (2000:12), while emphasising the importance of 'user choice' in improving the system, underlined the need for better understanding between training providers and employers and the need for ongoing audits of Registered Training Organisations.

Another submission to the Senate Committee Inquiry (*Hall,* 2000:1-2) has drawn attention to a number of failings on the part of employers. It is alleged that they lack sufficient knowledge of: the flexibility afforded by the training packages; the opportunities afforded to small companies to engage apprentices and trainees on the group training scheme; and the opportunities presented by competency-based training and assessment methods. It is also submitted that employers tend to recruit already skilled labour rather than to take on apprentices and trainees or commit expenditure to training expenditure and skill development; and that workplaces are poorly equipped to apply the workplace focus of the training packages. Further, it is said that many of the traineeships are being used by employers as labour market rather than training programmes, employers claiming subsidies and employing workers on training wages with little structured training being provided – a problem already alluded above in connection with assessment and training methods.

## Vocational courses at schools

The provision of vocational courses and training at school years 10-12 as part of the Senior Secondary Certificate of Education was noted above. While generally applauding this development, it is argued that the curriculum provision is unduly narrow and that a wider range of choices would attract a larger number of students who might otherwise leave school before completing upper secondary education. It is further argued that a closer connection between the school and the general and employer community in the area as well as increased funding and early counselling, would help to would also promote higher rate of school retention (*Sweet,* 1998:16-17).

It has also been argued that although a number of States have adopted a unitary model in the sense that a single school certificate is recognised for entry to universities and VET, a clear distinction is, nevertheless, maintained between academic and vocational courses and pathways within upper secondary schools. Such critics maintain that a desirable degree of integration of academic and applied learning is absent (*OECD,* 1997:18).

The Senate Committee of Inquiry has noted some of the weaknesses of the current provisions in its Report. Referring to the 'gap between policy rhetoric on VET in schools and the reality of its implementation', the Committee observed that funding for VET in schools has been described as 'insufficient, irregular and unpredictable' (p. 238). The Committee is also concerned about specific workplace training upsetting ' the balance provided by comprehensive education. If an incentive to lifelong education is the proper objective of school education, the most important credentials to be gained in school are those upon which further certificates, diplomas and degrees can be attained." (p. 237) However, while the Committee sees value in giving emphasis to school-based VET, it remained sceptical of 'the appropriateness of schools undertaking training in vocational skills unsupported by post-school training institutions (p. 250). And it also had this to say (p. 249):

*The Committee understands the concern of education authorities and schools to provide satisfying and credible courses for students who are not interested in proceeding to university. It also recognises the importance of preparing students for the world of work, but believes that this need not necessarily require training in the specific technical skills that relate to a particular industry. In this it has the support of most employers who gave evidence to this inquiry. Apart from literacy and numeracy skills, VET could be so defined to embrace - in the school curriculum - enhanced career advice, career motivation, personal development skills and civic knowledge and responsibility enhancement. These aspects of VET can be handled very well in schools and would complement more practical workplace instruction and skills development that was placed in the hands of RTOs from outside the schools.*

*The Australian Chamber of Commerce and Industry* (2000:24) has suggested the establishment of a 'free-standing central agency to manage and co-ordinate school to work programs and funding arrangements'.

## Is greater centralisation of regulation and administration the answer?

A number of problems in the VET system have been identified – put briefly, they relate to curricula and course design, to methods of training and assessment and the resulting quality of those trained, to the inadequate monitoring of the system, the failure of self-regulation and the 'market' in some respects, to persistent shortage of traditional trade skills, and to inadequate funding. However, it is generally agreed that the basic structure and objects of ANTA system are sound. It has been put into place rather speedily and, not surprisingly, there are many rough edges to be smoothed out. Rome was not built in a day! But the processes are under constant review and the criticism outlined above are a reflection of the close scrutiny being applied to the system's operation.

Part of the problem is that there are three stakeholders in the system – the Federal Government, the State Governments and employers – with different responsibilities and different interests, though not necessarily conflicting, in its outcome. The Federal Governments interest is in the system's contribution to the economy – productivity, employment and the balance of payments. The Federal Government chairs the Ministerial Board of ANTA and its power is in the funds it makes available to ANTA. But ANTA does not have the authority to investigate how the system is operating, although there are research bodies supported by its funds to report on the operation of the system.

The State Governments are concerned with the delivery of the system but they act separately and have different and uncoordinated bodies to audit the delivery. Not surprising the divergent standards in what is supposed to be a national and coherent system of recognised qualifications, become a source of conflict. Mobility and transferability of skills difficulties between States have come to the fore.

Employers also have divergent interests, especially between large and small firms, in the way the system operates, many taking a short term view of what they want from training and at a minimal cost, some mainly taking advantage of the training subsidy without concern about the training standard.

In all the circumstances, it is doubtful if a competitive provider system will, of itself, establish the necessary quality and consistency of training outcomes. The concept of flexibility – 'achieving diversity and flexibility to meet clients' needs' – inherent in the ANTA philosophy is commendable; but it carries the danger of 'sloppiness'.

The Senate Inquiry sees the problem in the decentralised nature of implementation and supervision

*Leaving sole regulatory authority in the hands of the states and territories has not worked. It is no longer a viable option, particularly in the light of identified inconsistencies in legal and administrative processes. The Committee believes strongly that a new national quality framework is needed for VET: a framework within which a truly national, truly integrated system can become a reality (p. 134).*

The Committee has recommended that the present Australian Recognition Framework be replaced with a National Code for Quality in VET and that the National Code be made legally enforceable. Further, that the primary responsibility for the national Code should rest with an *independent* National Qualifications and Quality Assurance Authority. While this degree of centralisation and independence of supervision and enforcement of processes and standards may seem to follow from the inadequacies of the existing fragmented system, there are political difficulties in its general acceptance by the States and the Commonwealth.

Meanwhile, concern about these delivery problems being left to the State bodies to deal with independently and the need for national consistency and quality in the performance of registered training organisations, the providers, has led the ANTA Ministerial Council of Education Ministers to establish the National Training Quality Council. In the words of the Federal Minister of Education:

The Quality Council will produce a 'report card' on the quality assurance arrangements that are put in place by the States and Territories which have responsibility for quality assurance in the national training system. It will involve independent advice on State and Territory registration, audit, and related processes as the basis for public reporting (*Kemp,* 2000:6).

The problems have been identified and an overseeing monitoring system of the State auditing process established. It remains to be seen how effective this body will be. It may turn out that too many poorly qualified providers have been let loose on the system and a more rigorous test of their competence is necessary before they are licensed to train. Further, it may be that 'workplace' training may need to be regulated more closely, if only in the interest of the career of trainees and the principle of 'flexibility and responsiveness' may need to be qualified.

## 12. The problems of different age groups

These days, the transition from education to work is a complex matter – longer and more drawn-out compared to earlier times. For most, it is no longer a case of a full-time job almost immediately on exit from school, even before completing upper secondary level. The transitional pathways are many, intermittent and some with dead-ends. The certainties of the past have been displaced by uncertainties and interruptions to work as a result of technological changes and competitiveness which have transformed the labour market. The easy access to stable jobs of the past is increasingly confined to a smaller section of the population. 'The idea of a career path has become overgrown, lost in the thicket of restructuring and work re-engineering, and is badly in need of repair' (*Spierings,* 1999:7).

The proportion of the 25-64 year old Australian population that had attained at least secondary education in 1998 was lower than most OECD countries as shown by the following figures: (*OECD,* 2000A: Table A2.2a)

| | |
|---|---|
| Australia | 56 percent |
| Austria | 73 percent |
| Denmark | 78 percent |
| The Netherlands | 64 percent |
| U.K. | 60 percent |
| USA | 86 percent |
| OECD mean | 61 percent |

In May 2000, 70 percent of the long-term (longer that 12 months) unemployed in Australia were people with low skills (*ABS,* 2000B).

As far back as 1991, Ministers of VET had set the target for 95 percent of 19-year olds to be participating or to have completed year 12 or an equivalent level of training (Certificate II level = ISCED 2C) by 2001. By 1999, only 83 percent had succeeded in achieving this level and, on present indications, the target for 2001 is unlikely to be met. Nor is the target for 60 percent of 22-year olds to have participated in or achieved the equivalent of Certificate level III or better (ISCED 3C to 4C) by 2001 within sight, the figure being only 50 percent in 1998 (*ANTA,* 1999:33).

The impact of the recent ANTA inspired initiatives has still to be felt fully. The objectives of the Federal and State Governments to reduce youth unemployment, to increase young people's access to VET and to increase school retention rates, have so far been only partly realised. The slow

response to the educational initiatives, are reflected in the following figures for May 1995 and May 1999[20]:

*Table 18: Educational participation and retention rates by age*

| | 1995 | 1999 |
|---|---|---|
| | In percent | |
| Year 12 retention rate – females | 77.9 | 78.5 |
| Year 12 retention rate – males | 66.7 | 66.4 |
| Education participation of 15-19 year olds (of all this age group) | 73.9 | 77.8 |
| Education participation of 20-24 year olds (of all this age group) | 28.0 | 34.4 |
| 15-24 year olds attending TAFE | 9.8 | 10.2 |
| 15-24 year olds attending universities | 14.2 | 17.6 |

Source: *ABS* (2000A).

The CEO of ANTA has blamed the lack of progress on inadequate 'marketing' of the system particularly to the section of employers, particularly small ones, to increase their investment in training on a longsighted basis (*Scollay,* 2000:3).

Although the VET participation rate of those of working age (15-64) has risen from 9.1 percent in 1985 to 10.8 percent in 1997 to 12.7 percent in 1999, and the proportion of 15-19 year olds undergoing VET has remained fairly constant for some years at 20 percent of this age group, the youth unemployment rate has remained high (*National Centre for Vocational Education Research,* 1999). Moreover, as noted earlier, the school retention rate has not recovered from the fall in 1992, especially for those from low socio-economic backgrounds. Of all the OECD countries, Australia has the second lowest proportion of the post-compulsory school age group in apprenticeship or vocational education, around 20 percent, compared to the OECD average of 50 percent and close to 80 percent for the German speaking countries (*Sweet,* 1998:11). Yet, there is an unmet demand for TAFE and other VET places, estimated at nearly 59,000 places in 1999 (*ANTA,* 1999:143).

Perhaps more time should be allowed for the ANTA system to produce fruit; although there are indications that more money and more determined push and more effective co-ordination of responsibility are needed for its objectives to be met (*Sweet,* 1998:14). And as indicated in the previous section, evaluation and changes are afoot. Meanwhile, there are pressing problems affecting young people in which a greater exposure to education and training could be a critical factor in alleviating them.

The following table[21] provides a comparative picture of the work circumstances of the various age groups which will form the subject of the ensuing discussion.

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[20] The enrolment numbers are not weighted by the duration of courses and modules. Thus the enrolment figures for May are generally smaller than the figures for the full year because a large number of enrolments are for modules which may last for only a few weeks.

*Table 19: Selected characteristics of labour markets segmented by age group 1996* and 1998*[1]

| | Teenagers | Young adults | Prime-age adults | Mature-age adults |
|---|---|---|---|---|
| Females as a percentage of the LF | 48.7 | 46.1 | 43.6 | 33.9 |
| Labour force participation (percent) | 54.0 | 81.0 | 80.0 | 22.6 |
| Unemployment rate (percent) | 18.8 | 11.9 | 6.3 | 5.5 |
| Average duration of unemployment (weeks) | 27.5 | 42.2 | 70.0[2] | – |
| Part-time employment as a percentage of total employment | 64.3 | 26.9 | 21.6 | 30.0 |
| Job mobility rate (percent)[3]* | 27.6 | 31.6 | 19.8 | 11.2[4] |
| Casual employees as a percentage of employees[5]* | 62.4 | 28.4 | 21.0 | 30.8 |

Notes: * February 1996. – [1] With the exception of the job mobility rate, all figures reported in this table apply to either August 1996 or 1998. – [2] Average of 25-34 and 35-54 age groups. – [3] Persons who changed their employer during the year ended February 1996 as a percentage of all persons who had a job during that year. – [4] Relates only to persons between the ages of 55 and 69 years. – [5] Relates to August 1996. Casual employment relates only to the main job held, and not all jobs. Further, the population base used here is all employees (and hence excludes employers and the self-employed) rather than all employed persons.

Sources: *ABS,* The Labour Force, Australia, August 1996 and 1998, ABS cat. no. 6203.0.
*ABS,* Labour Mobility, Australia, Year Ended February 1996, ABS cat. no. 6209.0.
Unpublished data from the ABS Labour Force Supplementary Survey, August 1996.

## Teenagers: 15-19 year-olds

The above table puts in perspective the high unemployment and part-time employment rates of teenagers and especially the high degree casualisation in teenage employment. The replacement of full-time jobs by part-time and casual jobs[22], which have occurred in recent years, has fallen substantially on young people. The problem for youth is not merely to find work but also 'to be able to be able to escape from a cycle of insecure, casual, temporary and part-time work' after leaving school. While undergoing the work habit and experience is always better than no work, for many, short-term work is not a stepping stone to full-time and stable employment. Around 9 percent of youths 'are locked into marginal activities fairly consistently for up to three years . . . who by the age of 19, have not participated in higher education or apprenticeships or training, have been unemployed or in part-time work at the age of 19' (*Sweet,* 1998:6-7).

It is well accepted on international evidence that the risk of persistent unemployment is significantly greater for young people who leave school before completing upper secondary education or its vocational equivalent. They tend to lack qualifications and experience – both requirements for secure job placement (*McKenzie,* 1999:4). And they carry their problem of maladjustment to the labour market well into later life. 'Augmenting the quality of initial education and, especially, reducing early exits from education clearly must remain of prime importance in tackling' persistence

[21] Based on *Wooden,* 1998:33 and 1999:39-40.

[22] It has been argued that the ABS figures for casual workers overstate the number of genuine casual employees by 50 percent in that many are occasional, irregular or short-term workers. Greg *Murtough* and Matthew *Waite* (2000), longitudinal study shows that disadvantaged workers move into permanent employment more quickly via casual work than directly from unemployment; and that it is easier for younger people in casual employment to move into permanent employment than it is for older workers. *Chalmers – Kalb,* 2000.

unemployment and inactivity in the first years of the transition process (*OECD,* 1998B:111) In this connection, inadequate literacy and numeracy proficiency carried forward from the school level and puts such persons at a disadvantage in obtaining further training later, is at the core of their employment difficulties.

The comparatively high unemployment of 15-19 year-olds who are not students, and the comparatively low percentage of this age group who had completed upper secondary education, have already been referred to in section 8. It is estimated that some 15-20 percent of young people at age 18 who are neither in school nor in full-time employment 'typically with weak academic skills, little or no vocational training, and a bleak sense of their own future' (*OECD,* 1997:23). This contrasts with various OECD countries where the group of young people who are not in education and training after compulsory schooling, ranges from 2 percent in the Czech Republic to 10 percent in the U.K.

The following statistics illustrate further the problems of this age group:

- *Full-time* labour market participation of teenagers has halved between 1978 and 1997.
- Their *part-time* labour market participation rate has risen from about 12 percent to 30 percent. While for some, this may be a stepping stone to more stable employment, for others, it may be a 'milling and churning' trap.
- About one-quarter of this age group was not in education and training in 1996. Of these, 12 percent were in full-time employment, 5 percent were in part-time employment, and about 8 percent were unemployed or discouraged from seeking employment (*McClelland – Macdonald, F. – MacDonald, H.,* 1998:107).
- Their unemployment rate was almost twice that of young adults and almost three times that of prime age adults.
- In 1997, 58 percent of teenagers were employed, largely in unskilled occupations; and 62 percent of those employed were in casual employment, compared to 16 percent and 21 percent of prime-age adults (*Wooden,* 1998:41).
- In 1993, nearly half of teenagers were employed in firms with less than 20 employees, with little opportunity for in-house training (*Wooden,* idem).
- The earnings of teenage employees relative to average earnings, both full-time and part-time, have been falling through the 1990s, as have real earnings (*Wooden,* idem).
- The *OECD* (1998B: Tables 3.8, 3.9, 3.11a) has compared on the basis of longitudinal studies, employment and unemployment rates, by gender and educational attainment, over the first three to five years after leaving initial education, for five countries including Australia. The figures show that:

- Those with less than upper secondary education have a lower rate of employment (i.e., spend less of their time in employment) and a higher rate of unemployment than those with upper secondary or tertiary attainment.
- In this connection, the position of women was worse than that of men.
- Australia generally fared worse than the other countries.

Thus, the evidence strongly suggests that there is a problem for young school-leavers (and young adults, to be discussed below) who have not completed at least upper secondary education. The incidence of unemployment among those who had not completed year 12, is almost twice as great as for those who had done so (*Ainley – McKenzie,* 1999:108). The risk to those who remain unemployed for a substantial part of the five years after leaving initial education short of upper secondary level, is that they may become marginalised and excluded from the labour market for long periods and could face great difficulty finding stable full-time employment later in life (*OECD,* 1997). If the studies relating to the USA and Sweden provide a message for Australia, it points to the risk of being trapped in a cycle of unemployment and part-time and casual employment for those who do not make an early transition to permanent work or to full-time study (*Sweet,* 1998:7).

It is also apparent that early school leaving is concentrated among youths with disadvantaged backgrounds (*Ainley – McKenzie,* 1999:105). Furthermore, it has been emphasised that early school ***leaving*** is the issue rather than the 'notional problem group of early school ***leavers***' (*National Centre for Vocational Education Research,* 2000:3). Not all school leavers are at risk of marginalisation. Those who are, are low achievers at school for a variety of reasons, including low self-esteem, lack of social skills, socio-economic, dysfunctional family problems, literacy, numeracy and other learning difficulties, and problems associated with school organisation, curriculum and climate.

*What can be done?*

In answer to the question: 'What can be done for those young people who are most likely to fall between the cracks?, the *OECD* (1997:24) suggested, among other things:

*. . . it is clear that intellectual development requires more than educational inputs alone. It also requires an array of other supporting factors – good health, self-confidence, a safe and positive home and neighbourhood environment, and so on . . . A shift in perspective is required towards seeing the school as the delivery vehicle for those services – educational as well as non-educational – to help young people become full and productive participants in adult society.*

Social skills and other personal qualities are frequently as important as technical skills in employability (*Sweet,* 1994). The OECD commends the Danish system of small scale settings provided by secondary schools to meet the needs, on a personalised basis, not only of young people who are socially alienated but also those who have difficulty in mastering basic literacy and

numeracy. The high cost of such services is seen as being worth while in preventing drop-outs and, at least, in securing greater equity (1997: para 96).

The *OECD* (1999A:44) has also suggested that there are various ways in which labour markets can be made more 'youth friendly'; and it refers to such countries as Austria, Denmark and Switzerland as counties which, through their apprenticeship schemes, provide youths with the opportunity and security of proper training. Such schemes involve co-operation between government, educational institutions, employers and trade unions.

An alternative arrangement, reflected in a 'youth commitment' pilot case study in Whittlesea, an outlying suburb of Melbourne, shows the benefits of properly co-ordinated action – involving schools, employers and unions in the area, local government, placement and community agencies – in providing young people with the opportunity to complete secondary education or its equivalent, linked to on-the-job training and/or employment (*Spierings,* 1999:22).

There is also need to ensure that the comparatively large number of young ***part-time*** workers who are not undergoing training, are provided with the opportunity and incentive to do so in order to facilitate their escape from the 'milling and churning' of unstable part-time, temporary and casual jobs into more stable full-time work[23]. The number of part-time youths who were in part-time employment and not undergoing formal education has grown since the 1980s; by mid-1996 one in two such teenagers was in that category (*Sweet,* 1996:7).

Believing that providing training on a part-time basis for such persons, as, for example, through the traineeship scheme referred to above, may not be realistic in many cases, Sweet has suggested other ways to build bridges to full-time employment. One way would be to establish non-profit employment agencies which would hire young people and lease them out to employers as casuals, part-time and temporary labour. In this way some degree of continuity of work and experience may be achieved, as has been shown by such a case in Newcastle. Another way, although inherent in the more structured first suggestion, is his suggestion for greater recognition of the cumulative experience and skills obtained from a series of part-time and temporary jobs (pp. 12-13).

To deal more effectively with those below the age of 20 who have left school without having completed Year 12 and who are not in full-time work and not studying, it has been proposed (*Sweet,* 1998:19) that this group be given a financial entitlement, equivalent to the public cost incurred in providing young persons with Year 11 and 12 education, in order to complete secondary schooling or its TAFE equivalent. The cost of the scheme would need to be balanced against the cost saving of welfare payments and the psychological benefits to persons freed from welfare dependency (the cost has been estimated at about $ 16,000 per student). To ensure

[23] t is arguable that to some extent, early 'career instability' may have positive effects in so far as some young people may be 'shopping' around for jobs which fit their interests and competencies, while others may travel abroad and widen their educational horizons, *OECD* (1999A: 80-81).

substantial response from such persons, the scheme would require the assistance of case managers to advise and encourage prospective students as well as the provision of appropriate courses by schools and TAFE. Further, drawing from the experience of Nordic countries, adequate places will need to be provided for such cases and community, employer and trade union ties will need to be strengthened.

Yet another approach to providing employment and work experience is currently in operation in Australia on the principle of 'mutual obligation'. This approach is not without criticism and is discussed below.

The above considerations, especially the emphasis given to the achievement of at least upper secondary education or its equivalent in speeding up the transition to employment, need to be qualified by what may well turn out be a critical factor in the trainability of persons and their transition to full-time and stable employment: namely, an adequate foundation in the basic literacy and numeracy skills acquired early in education. Without such foundation, later training programmes may fail to provide the requisite skills sought in the labour market (*Martin,* 1998). Recognition of this fact, has led the Federal Government to establish the Commonwealth Literacy and Numeracy Programme in order to improve the literacy and numeracy outcomes for students experiencing educational disadvantage (*Ainley,* 1999). The pedagogic implication of this point is beyond the scope of this report; but its importance must be underlined.

Finally, it needs to be emphasised that while education and training are necessary ingredients in securing stable and well paid jobs for teenagers, they will not be sufficient to achieve this objective unless the level of aggregate demand is high enough to ensure the availability of job openings.

The Executive Summary in Dusseldorp Skills Forum 1998, from which many points have been drawn in this paper, has this to say about the evidence presented on the youth problem:

*It clearly reveals that the shadow of marginalisation engulfing 15-19 year old Australians is larger than generally understood and growing. It does point to rigidities in policy and institutions which are in important respects failing to meet the demonstrable needs of our youth. It raises serious questions not only as to the current priorities in the allocation of public resources but also whether we are seeing increased public expenditure, where it exists is being matched with increased access to and opportunities for learning or work . . . In essence, Australia's Youth: Reality and Risk presents a strong case for a fundamental shift in public policy from youth management to youth development. The future demands of us a genuine confidence in the abilities, talent and goodwill of young Australians: the task is to provide the environment (policy and resources) which nurture those abilities and deliver the opportunities for them to develop fully.*

And it argues that:

this new research points to the key elements of the required shift as being:

1. an absolute priority for all marginalised young people – not only the unemployed but also those who are outside the labour force but not studying, and those in precarious part-time work,
2. recognition of the pressing need to better address the phenomenon of early school leavers, including through a genuine guarantee backed by the resources needed to make it work (one option being a common entitlement as outlined above),
3. a stronger emphasis upon demand-side policies in the labour market,
4. reform of upper secondary schooling, based upon a vision for the student majority,
5. a shift in the priorities of vocational preparation from what has failed to achieve greater youth participation(apprenticeships, traineeships, TAFE) to what has (school-industry programs).

It goes without saying that the justification for giving high priority to the learning needs of teenagers, is that they are the adults of tomorrow. Anything that is done to increase their prospects for stable employability and a fulfilling career, will save them from being trapped in a life of 'milling and churning' going into adulthood.

## Young adult workers: 20-24 year-olds

The problems of young adults are no less serious than those of teenagers. The table above shows that, compared to teenagers, a larger percentage of young adults were in the labour force. They had a lower rate of unemployment but were unemployed for a significantly longer period. An *OECD* (1999:40) study shows that, in general, unemployment among young adults is more likely to move directly with adult unemployment than is teenage unemployment.

However, in September 1997, between 21 percent and 26 percent were at risk of continuing labour market disadvantage in the sense that they were unemployed, or in part-time employment but not undergoing education/training, and marginally or not attached to the workforce. This is rather higher than the 15 percent to 20 percent corresponding figure for teenagers (*Dusseldorp Skills Forum,* 1999:6). *Wooden* (1999:43), on May 1997 figures, on a slightly different definition, estimates that 28.6 percent of this group were at risk. The definitional differences do not affect the magnitude of the problem. A proportion of marginalised teenagers would no doubt have carried this handicap into adulthood and the high figure of young adults 'at risk' underlines the urgency, at least as great as in the case of teenagers, for remedial action for persons who are at a stage in life when many would be expected to be taking on family commitments.

*In 1997:*

- 17.2 percent and 15.9 percent of young adults participated in vocational and higher education, respectively.
- About 49 percent had achieved at least one post-school qualification.
- Some 40 percent of this age group had not participated in some form of structured training provided by employers or were undertaking study (*Burke,* p. 162, *The Deepening Divide*, 1999), of whom about one-third were part-time employment).
- A recent survey found that about 8 percent of 24 year olds had not participated in any higher education or apprenticeship training; had not obtained TAFE qualification; and had been unemployed or out of the labour force for at least 18 months since leaving school (*Dusseldorp Skills Forum,* 1999:12).

Those with lesser qualifications are relegated to unstable and low paid areas of employment thus deepening the divide between those who have the aptitude and have had the opportunity to develop them, and those who have lacked one or both these advantages. Although there is no empirical evidence, it would not be surprising if a significant number of these young adults have carried their teenage employment problems into adulthood. While this underlines the importance of early intervention in the circumstances of teenagers as discussed above, it also calls for action, especially through some form of education and training of the kind suggested for teenagers as well as other supporting mechanisms, to lift them to more secure and rewarding employment.

## Prime age workers: 25-54 year-olds

The table above shows that prime age adult workers had a significantly lower unemployment rate and part-time employment rate than the earlier age groups but they had the longest duration of unemployment. The long duration of unemployment is telling and suggest that these unemployed lack the skills required for employment. To some extent, this group would be carrying the problems of young adults in securing steady employment. They belong to the pre-1990 cohorts with low upper secondary schooling referred to above. This is reflected in the progressively smaller proportion of the labour force that has attained at least upper secondary education – 64 percent, 58 percent, 52 percent, and 44 percent, respectively, for the age groups, 25-34, 35-44, 45-54, and 55-64 (*OECD,* 2000A: Table A2.2(a)).

However, it does not appear from overall figures, that Australia lags behind OECD countries in the participation of 25-54 year olds in career and job-related training. Harmonised OECD figures in terms of average of training hours per employee for this age group during the 1990s, show Australia to be well above the OECD average and ranked 3, compared to Austria which was slightly below the average figure and ranked 9 (*OECD,* 1999C: Table 3.3).

The ratio of training hours participation by 25-29 to the hours by 50-54 year olds, varies a great deal internationally – being very high in, for example, France and Southern European countries,

indicating a concentration of training among younger workers; and very low in the Nordic countries (except Finland) and the USA where the older workers have greater prospect of training. Australia also seems to be more inclined to train the older age group than both Austria and the OECD average (Table 3.6) .

As with the other age groups, here again the long duration of unemployment suggests a large percentage of prime age adult workers do not have the competencies required for sustained employment. It also raises the question of whether they are provided with adequate opportunity for training. OECD evidence (1999C:154) suggests that higher training rates are associated with higher educational attainment. Those with lower educational attainment appear to be more prone to miss out on further training. With rapidly changing technology and skill requirements, this group (as well as the mature age group to be discussed presently) could be expected to benefit from the provision of lifelong learning facilities. This topic is considered below.

## The 'mutual obligation' principle

The principle of 'mutual obligation', popularised by President Clinton, has become the basis of income support for unemployed persons between the age of 18 and 34. Unemployment benefits in Australia has traditionally been means tested, of indefinite duration and related to family obligations. The mutual obligation principle was introduced initially in 1997 on a pilot basis and has since been progressively extended. In essence, the principle, also known as Work for the Dole, requires unemployed persons to participate in one of a range of activities (including military service), which could be expected to develop their work habit and skill and, consequently, their employability, in return for receipt of unemployment benefit.

The requirements vary as between the different age groups. There are three categories[24]:

- 18-19 year old year 12 school leavers who for three months have been in receipt of unemployment payment (referred to as 'youth allowance' for this category of unemployed) – the precise amount being subject to parental means test.
- 18-24 year old job seekers who have receiving unemployment benefit (known as Newstart Youth Allowance for this category of job seekers), for six months or more.
- 25 to 34 year olds job seekers who have been receiving Newstart Allowance for 12 months or more.

To retain their eligibility to unemployment benefit, all are required to participate in one of 14 specified activities on a part-time basis – 12 hours a week for 18-20 year olds, and 30 hours for those over 21. These activities include: voluntary work, education and training, community

[24] The factual details have been drawn from the Department of Workplace Relations and Small Business web page.

development projects, literacy and numeracy training. The activity being part-time, it is expected that the participants will continue to search actively for a job.

The programme has been expanded to 50,000 places by mid-2000 and is expected to be further expanded. An evaluation of the pilot survey showed that about one-third of survey participants were in work and 11 percent were in education or training within three months after their placement ended; while 85 percent of participants claimed that the Dole had increased their desire to find jobs. However, those who criticised the scheme maintained that the limited variety of work was not sufficiently challenging and was not giving skills sufficient to obtain a job. The large number of breaches of Dole obligations relative to the number of placements, resulting in reduced unemployment payments, suggests that the scheme has not had high job seekers' support (*Curtain,* 2000).

One of the features of the scheme is that placements must not displace existing full-time or part-time workers. This condition tends to limit employment opportunities to unskilled work with little prospect for training (*OECD,* 2000B:99). It has been argued (*Curtain,* 2000) that the Australian scheme is 'narrow and short term' in its objective, and appears to be based on fears of welfare dependency among young job seekers and on wanting to keep young people in some form of worthwhile activity. Unlike its U.K. counterpart, the New Deal, it is short on emphasis on the job seekers' entitlement and long on their obligations'. Nor is it focussed on how best to meet the needs of the individual job seeker or give adequate emphasis on training.

While the intention of the scheme seems laudable, so far, the evidence suggests that it falls short of being a successful active labour market policy.

## Mature age workers: 55-64 year-olds[25]

The extent to which mature age workers may be expected to continue in employment, either full-time or part-time, past normal retirement age, will depend on a variety of factors including their health, financial position, the financial and other incentives to work, employer perceptions of their suitability for continued employment, the opportunities for re-skilling and the availability of jobs.

The table above (selected labour market characteristics of different age groups) shows that the labour force participation of mature age adults declines substantially compared to younger age groups. This is also the experience of most OECD countries. This may be related, at least partly, to the reduced employability of those with lower educational attainment. It is noteworthy that while the labour force participation rates for less educated males are lower for all ages in OECD countries, the gap widens greatly as between the 35-44 and 55-64 age groups (*OECD,* 1998B: Table 4.8).

[25] This section draws heavily on *The National Strategy for an Ageing Australia,* a paper delivered by Senator Bronwyn Bishop, Minister for Aged Care, November 1999.

For Australia, in 1995, the participation rate for 35-44 year old male workers with less than upper secondary education was 88.5 percent compared to 57.0 percent for the 55-64 age group. This was similar to the experience in Denmark, Norway and the U.K., but the gap between the age groups was not as great as in the Netherlands and greater than in Sweden. Is this a reflection of employer attitude on the training of older workers?

A further point to note is that, moving up the age groups from 15-24, 25-44, 45-54, to 55-64, the incidence of job-related continuing education and training declines progressively from 48.1 percent to 41.0 percent to 32.5 percent and to 25.0 percent. Apart from the first age group, this is also true of the proportion of training paid for by employers (*OECD,* 1998B: Table 4.7) Substantially the same experience is largely reflected in the figures for Canada, New Zealand, Switzerland, the U.K. and the USA. Is this a reflection of employer attitude on the value of training older workers? Or is it that older workers have already had the requisite amount of training?

The lower unemployment rate of the mature age workers and their higher rate of part-time and casual employment shown in the table above, reflect early retirement and retrenchments from fulltime employment. The reduced employability of mature age workers is also reflected generally in OECD countries (idem 1998 Table 4.10), the relative intensity of hiring falling with age. In the three years to 1997, the retrenchment rate of 55-64 year olds was 16 percent compared to 11 percent for the 18-64 age group (*ABS,* 2000A:128).

That there will be a national economic need for older persons to continue in employment is evident from the demographic picture. Australia's population growth has fallen from an annual rate of 1.6 percent in the early 1970s to around 1.2 percent in 1999; and on present indications, is predicted to fall to about 0.1 percent in 2051 (*Bishop,* 1999: para 2.1). Concurrently, the number of persons over 65 has increased from 9 percent in 1976 to 12 percent at present; and is projected to increase to 18 percent by 2020 and to 30 percent by 2051.

These developments are projected in the context of an increase in early retirements of men and women which will impact on the supply of labour. In the circumstances, the retired dependency ratio, adjusted for part-time workers, is estimated at 48 percent in 1999, and is projected to rise progressively to over 70 percent by 2050. Thus the rate of growth in GDP may be expected to fall unless offset by faster productivity growth and/or a higher workforce participation rate (*Bishop,* 1999: para 2.3).

It is apparent, therefore, that to counter the prospect of a fall in GDP growth, a later retirement of mature-age workers becomes necessary. At present, the Australian participation rate of mature-age workers at 55 is among the lowest in the OECD (*Bishop,* 1999:2.3). The implications for old age pensions commencing at age 65 would need to be considered.

However, the extent of early retirement may be more a symptom of difficulties, in the context of industrial restructuring and downsizing, faced by mature age workers in finding suitable

employment rather than a voluntary move out of the workforce. As the World Bank has noted, early retirement is '. . . an expensive way to restructure enterprises. It reduces the country's labour force (especially its experienced labour force), shrinks potential output, reduces political pressures to cut unemployment and results in regressive redistributions' (para 3.1). There is evidence of a high incidence of long term unemployment among mature age workers and a significant proportion of mature age workers being 'discouraged job seekers'. In 1998, there was one discouraged job seeker for very three unemployed workers in the 45-64 age group; and one for one in the 60-64 age group (*Bishop,* 1999: para 2.6).

The nature of work, from manual to physically less demanding work opened up by the new technology and in the knowledge-based industries, provide greater scope for employing older workers. However, on present indications, there is need for a change in attitude of employers on the capacity and employability of mature workers, and also for training facilities to be readily accessible to such workers. As to the former, there is a perception that mature workers are less able to maintain high productivity or to adapt to changes in work practices (para 4.1) Under such a perception, age becomes a critical factor in retrenchments. There is evidence that three out five workers who were retrenched into early retirement, wanted to keep on working. This despite evidence that mature age workers have a lower turnover and less absenteeism and 'tend to make better decisions; can be counted on in crisis situations; are more dependable; do a better quality job; and co-operate more on the job' (para 4.3).

The problems facing mature-age workers and their retention in employment have been summarised as follows (para 4.5):

- Structural adjustments displacing workers with a mix of skills no longer in demand, i.e., the need to update existing skills/re-skills;
- Competition from younger and potentially more appropriate skilled and lower cost workers;
- Discriminatory attitudes of employers towards older workers;
- Lack of motivation by mature age workers to continue the job search in the face of a difficult employment climate (i.e., discouraged workers?);
- Lack of re-training opportunities for mature age people; and
- Relatively easy access to some superannuation benefits (including lump sum payments) enabling early retirement decision to be made after a voluntary or involuntary retrenchment.

Training opportunities are clearly one of the more critical factors in facilitating employability of older workers. An OECD survey of a number of countries for 1994-95, shows that generally the rate of participation in job-related continuing education and training declines significantly for older workers, especially for workers with low educational attainment; but this decline is much less for professional workers (*OECD,* 1998B: Ch 4).

## Lifelong Learning

The training and re-training needs, particularly of prime age and mature-age workers, raise the issue of lifelong learning. The importance of lifelong learning 'as a determinant of long-run growth in a knowledge-based economy' has been endorsed by OECD Labour Ministers (*OECD,* 1998A:8). The developments in the educational and training structure since the establishment of ANTA, provide the potential for system of lifelong learning – a nationally integrated system of VET, delivering modular based training programmes, nationally recognised and portable qualifications based on competency evaluation, and flexible pathways for training and re-training. The weaknesses and deficiencies in the system, which have been mentioned above, are not irremediable. The system is still in its early years. The danger to quality arising from undue flexibility needs to be guarded against. But overall, there is agreement that the system points in the right direction for VET in its many dimensions and levels.

The lifelong learning concept is not new, either to Australia or the rest of the world. It gained publicity through the OECD particularly in the 1970s but it has been given renewed emphasis in a number of countries including Australia[26]. In a sense, lifelong learning in the form of 'experience', is an ongoing learning process in most people's lives. In respect of university education in Australia, the substantial increase in the proportion of persons over 30 who are enrolled in university courses – from 11 percent in 1973 to 27 percent in 1997 – suggests that, in a limited sense, lifelong learning has been taking place. Vocational education also shows a doubling of this age group between those years – from 23 percent to 49 percent.

Although the OECD has given lifelong learning a widely encompassing economic, social and personal concept (for example, 1997b)[27], ANTA gives primary emphasis to training and re-training in order to develop skills and promote employability and competitiveness. Nevertheless, the social implications of lower unemployment are obvious; and, potentially, the employment opportunity offered to disadvantaged groups, also gives the scheme an implicit social/equity objective. From what has been said about the substantial proportion of the workforce who are at risk, it is arguable that this potential has not been fully tapped.

A recent study (*O'Connell,* 1999), based on 1994-95 survey data, relating to the incidence of continuing adult (25-64) education and training in a number of countries, provides the following information about the Australian experience:

- Employed adults are more likely to participate in continuing education and training than the unemployed.

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[26] A Centre for Lifelong Learning has been established at Flinders University, South Australia headed by a full professor; also at Griffith University, Queensland.

[27] Referred to in *McKenzie,*1999.

- The incidence of job-related training (42 percent) for the employed is higher than that all education and training (38 percent).
- The participation rate of employed males in all education and training (41 percent) is lower than that of women (45 percent). There is no substantial gender difference in participation in job-related training (38 percent) but men are more likely to be supported by employer contribution to training.
- Employed adults who already possess higher level educational qualifications (tertiary, upper secondary) are more likely (58 percent, 40 percent) to participate in education and training than those with lesser (below upper secondary) educational qualifications (30 percent).
- Employed adults working in large firms are more likely to participate in continuing education than those working in small firms – the figures rising progressively from 29 percent for those firms with less than 20 employees to 58 percent for firms with 500 or more employees.
- Employers are the largest contributors to the cost of education and training (62 percent) compared to personal (43 percent) and government (8 percent) contributions[28].

It has been repeatedly noted in this Report that Australia has chosen the 'high skills' economic development route with high human capital accumulation to generate economic growth through high labour productivity and high wages. There is implicit in ANTA's objectives the development of a 'training culture' and lifelong learning, both necessary ingredients for travel along this route. The question arises whether the Australian education and training infra-structure is adequately equipped for such an objective. This gives rise to two questions.

First, whether a sufficient proportion of the workforce has the necessary qualities or commitment to engage in lifelong learning, or, to use the words of the *OECD* (1999A:150), have 'a love of learning and the skills of learning to learn'. An OECD survey of perceived barriers in job-or career-related continuing education and training among adults in a number of countries including Australia, shows that for nearly all the countries surveyed, situational barriers (too busy/lack of time, family responsibilities etc.) made up about three-quarters of the reasons for non-participation. And for most of the countries, financial barriers accounted for about 20 percent of the reasons (*OECD,* 2000A: Table C7.7).

Second, whether the prevailing tendency to employ part-time and casual labour, to emphasise labour market flexibility, to engage in downsizing and outsourcing, is consistent with the requirements of lifelong learning (*Hopkins,* 1999). The accumulation of human capital through lifelong learning calls for employee commitment to the enterprise; but it also requires employer

[28] Apart from this last item where the Australian personal contribution figure to the cost of education and training was substantially higher than the unweighted mean of the countries included in the study, all other Australian figures were close to the unweighted mean.

commitment to the income and career security of its employees. Appropriate industrial relations and human resource management policies need to go hand-in-hand with lifelong learning policy. For

'*enterprise-based training to be a major source of what deserves to be called lifelong learning rather than intermittent competency acquisition, the enterprises will be ones that value and enhance their intellectual capital, in an atmosphere of shared trust and commitment, and where learning is not a separate activity but instead is implicit in what people do all the time*' *(Hopkins, 1999:6)*.

In order to overcome this problem, at least partly, Hopkins suggests (p. 11) that where there are difficulties of long-term relationship within the establishment of particular employers, it should be possible under the ANTA scheme for such employees to establish a long-term relationship with providers of VET – the Registered Training Organisations – which, through their close links with employers, are in a position to offer guidance and relevant learning opportunities and, in that way, provide some continuity of employment, although not necessarily with the same employer.

In the context of lifelong learning, the *OECD* (1999A) has raised the question: to what extent are initial and further education complements or substitutes? The answer should be that they are both. To the extent that initial education is more comprehensive and effective, the less elaborate and wide-ranging further education needs to be. One can be a substitute for the other, as they are for many people. But for others, further education is a compelling factor in their employability. It is a case of working on both fronts, especially in view of rapidly changing technology and products. However, the evidence suggest (*OECD,* 1999D:154) that there is tendency for higher national training rates to be associated with higher educational attainment.

This matter raises two issues which deserve consideration. First, for prime adult workers to be able to take advantage of the lifelong learning facilities, they must have a sufficient competency basis to acquire new skills. Hence a condition for lifelong learning facilities to be used effectively depends on the basis developed earlier in their learning and working life. Therefore, what is done in the transition from initial education to working life becomes critical to how successful lifelong learning will be in enhancing the continued employability of prime age adults and older workers. It follows that what is done by way of learning in the transition phase should have a time frame which goes beyond the immediate employability of young people.

Second and related to the first, is a pedagogic question which applies from primary education upwards. While this is an issue which takes us beyond the remit of this Report, it is worth raising briefly the question: What should be the foundational skills to be developed in an era when skills need to be changed or upgraded frequently for effective performance? The *OECD* (1999A:152) refers to the view, which is widely accepted in educational circles, that a solid basis for lifelong learning, calls for the development of core skills which will enable learners to acquire new skills more easily. While different educational systems may express these core skills differently, essentially they include the 'three Rs' – reading, writing and arithmetic – as well as problem-solving and

applied skills, social and communications skills, personal development, and a facility and motivation to learn.

However, the OECD (1999A:143) admits the tentative character of some of the conclusions on lifelong learning:

*We do not know enough about what kind of initial education makes the greatest difference. Nor do we know which institutional frameworks are best suited to make lifelong learning a reality. Different countries have been experimenting with partly similar and partly different strategies, but all are still at the stage of trial and error.*

## Indigenous workers

Indigenous Australians are the most disadvantaged section of the population in vocational education. Their education, training and employment problems stand out in magnitude by comparison of non-indigenous Australians to an extent deserving of special treatment. A recent Report of a Taskforce (*Long et al.,* 1999B) commissioned by the Department of Employment, Education, Training and Youth Affairs, provides a comprehensive literature review and statistical analysis of these problems. This section has drawn freely from this Report.

The difficulties faced by young Australian discussed above are magnified manifold for Indigenous Australians as reflected in the following points:

- In 1997, the retention rate for Year 11 was 50 percent for Indigenous students compared to 85 percent for non-Indigenous students.
- Less than 31 percent remained in Year 12 compared to 72 percent of non-Indigenous students.
- Among 15-19 year olds, Indigenous Australian were one-third less likely to be attending school and one-half as likely to be attending tertiary education. Literacy and language proficiency of Indigenous Australians appears to be the main barrier to post school education.
- 12 percent of 20 to 24 year-old Indigenous Australians attained post school qualifications compared to 32 percent of non-Indigenous Australians.
- The participation rate for 15-19 year old Indigenous Australians in VET was 26 percent, and for the 20-24 age group 21.5 percent, both about 95 percent of the other Australian rates. The female Indigenous participation rate was lower than that of their male counterparts.
- Those who participated in VET, were more likely to be engaged in developing basic employment skills and educational preparation rather than developing the higher skills.

- In 1996, the participation rate in university education of 15 to 19 year old Indigenous persons was only about a quarter of that of other Australians in this age group. The participation rate of female Indigenous persons was twice as high as that for their male counterparts.
- The drop-out rate of Indigenous university students was much higher than that non-Indigenous students; consequently their graduation rate was lower.
- In 1994, the unemployment rate of Indigenous 15-19 year-olds was 50 percent and of 20-24 year-olds, 46 percent. The figures for non-Indigenous persons were 22 percent and 13 percent, respectively. The faster rate of growth of the Indigenous population will result in an even higher unemployment rate unless employment opportunities are increased substantially.
- There is a highly negative relationship between educational attainment and unemployment. There is a progressive decline in unemployment rate with higher educational qualifications, 17 percent for those with a skilled vocational qualification or diploma, and 12 percent for those with a bachelor degree.
- Even when educational attainment of Indigenous Australians was as high as that of non-Indigenous persons in a similar geographical location, employment opportunities for Indigenous youth were poorer.
- It appears that Indigenous persons' employment potential is affected by family responsibilities, cultural obligations, homelessness and isolation. Low literacy and numeracy levels were further barriers to employment.

Overall, the education, training and employment picture of Indigenous Australians is rather depressing. The Task Force summarised their Report (p. ix) as follows:

- Indigenous youth experience disadvantage at each of the identified transition points. The literature highlights the multiple disadvantages experienced by Indigenous youth including low educational attainments, rurality, speaking English as a second language or dialect and low English literacy levels;
- Retention at secondary school is lower for Indigenous youth than non-Indigenous youth at every age level. The literature suggest a number of reasons why the drop-out rate is high for Indigenous youth including lack of relevant courses, lack of culturally appropriate curriculum, pedagogy and assessment and low literacy levels which are first apparent in primary school;
- Many Indigenous youth are participating in vocational education courses requiring low skill levels. Improvements in the level and quality of participation in further education requires improvements in schooling outcomes; however, there is also scope for an examination of pathways within the VET sector (after pre-vocational and preparatory courses) and the choices made by Indigenous students who have successfully completed Year 12 (many do not go on to higher education);

- There is evidence in the literature regarding the high participation of youth in part-time, low-paid, insecure employment. There are higher numbers of Indigenous youth than non-Indigenous youth in this type of employment and a higher number unemployed;
- Rurality contributes to the disadvantage experience by Indigenous youth in terms of poorer educational outcome, although employment outcomes are supported by Community Employment Development Projects (CDEP) employment in places where there would otherwise be a lack of employment opportunities;
- CDEP offers a valuable source of employment for Indigenous people and contributes significantly to the employment outcomes documented in the statistical report. One concern is that Indigenous Youth may move into CDEP employment in preference to completing secondary school. The recent policy direction regarding CDEP's securing access to appropriate on-site delivery by mainstream training providers is an important way of addressing the issue of future pathways, especially for Indigenous youth who have limited education, training and employment opportunities.

The Aboriginal and Torres Strait Islander Peoples' Training Advisory Council was established in 1996 to advise the ANTA Board on ways and means to improve the VET system's ability to train indigenous Australians. The Council is active in giving publicity to Indigenous communities about VET programmes and how to access them.

The Council also helps to build links with a number of relevant bodies to give publicity on the VET needs of indigenous Australians. In particular, it works with employment agencies, group training companies, government and industry to increase apprenticeships especially for young people. Indigenous students in remote regions of the Northern Territory are beginning to take up New Apprenticeships mainly in the construction industry but there are problems of training because of lack of language and literacy skills, especially as the Training Packages are designed for people with more adequate English language skills. It is well accepted that language and literacy proficiency is the main barrier to VET for potential Indigenous students (Department of Employment, Education and Training 1995)[29].

Part of ANTA's 'equity' objective is to encourage training and employability of disadvantaged groups like Indigenous Australians, and reference was made above in section 10 to appropriate adjustments in training and assessment methods for Indigenous trainees and persons with literacy difficulties. However, the performance of Indigenous trainees in VET courses is well below that of other Australians. VET enrolment of Indigenous Australians in 1998 was about 4 percent of the

[29] This source shows that in terms of their population size, Indigenous persons are greatly under-represented in TAFE enrolment. On the basis of the 1991 Census, while Indigenous Australians made up 1.6 percent of the total population, they accounted for 1.3 percent of VET enrolment. Although the difference of 0.3 percent may appear to be small, it is a significant part of the total Indigenous population.

total enrolment, and mostly in low level and short courses. The modules pass rate of Indigenous students was about 66 percent compared to 80 percent for non-Indigenous persons. The completion rates were about the same (*ANTA*, 1998B:64).

As literacy and numeracy appear to be a significant handicap limiting VET of Indigenous persons, the Federal Government has recently announced the establishment of a National Indigenous Literacy and Numeracy Strategy in order to overcome the source of this hurdle at the school level. This is in addition to the existing push to improve literacy and numeracy among all Australians. The elements of this Strategy has been outlined as follows (*Kemp*, 2000B):

- Lifting Indigenous school attendance rates to national levels;
- Effectively addressing hearing and other health problems that undermine learning of many Indigenous students;
- Enhancing pre-school opportunities;
- Training sufficient teachers in skills and cultural awareness to operate effectively and to stay for extended periods in Indigenous communities;
- Ensuring that teaching methods used are the most effective; and
- Having clear measures of success as the basis for accountability for schools and teachers.

## Workers with non-English speaking background

Immigration has been a feature of the Australian population and the labour force from the very early days of European settlement[30]. A feature of persons with non-English speaking background (NESB) in more recent times is that the rate of unemployment among them has not only been significantly higher but also of longer duration.

This is reflected in unemployment statistics.

- In 1991, the percentage of unemployed persons with no post-school qualifications was 58 percent for those born in overseas NESB countries; while for those born in countries with English speaking background (ESB) and in Australia, the rates were 61 percent and 72 percent, respectively.
- Inadequate proficiency in English is an important explanation but even where this factor does not apply, there is a significant difference in unemployment rates.

[30] This section has relied heavily on *O'Loughlin – Watson* (1997). Most of the figures quoted were drawn from the Australian Bureau of Statistics publications.

- In 1993, 14 percent NESB unemployed had tertiary qualifications, while the corresponding figure for Australian-born was 5 percent. This difference may partly be due to overseas qualifications not being fully recognised or not considered to be of sufficient quality, but also because of inadequate proficiency in English.
- On the basis of occupation prior to immigration, the NESB unemployment rate was more than twice as high as the rate for their ESB counterparts. This difference applied not only to immigrants from Asia and the Middle East, but also to those from Poland and Yugoslavia.
- When the unemployment fell after 1993, the improvement was more evident among Australian born persons than those with NESB.

These differences were also evident among the long term unemployed, defined as those who are unemployed for more than 12 months. Long term unemployment has tended to fluctuate with the general rate of unemployment but over the last three decades, long term unemployment has settled at a higher level after each cycle. The explanation for this situation lies in the problems of adjustment to de-industrialisation arising from technological changes and industry restructuring. In August 1999, 2 percent of the Australian labour force had been unemployed for more than one year; of these, more than half had been unemployed for more than two years. But those with NESBs have taken a heavier toll of industry restructuring and long term unemployment than did Australian born persons as shown by the following:

- In 1995, while the average duration of unemployment for NESB persons born overseas was 74 weeks, the figure for ESB born overseas was 45 weeks and for Australian born persons was 52 weeks.
- The incidence of long term unemployment among the unemployed for NESB persons born overseas was 50 percent, compared to 30 percent for Australian born and ESB persons born overseas combined.
- The incidence increases with age and decreases with higher qualifications; but whether considered in terms of qualification, former occupation or gender, the difference in long term unemployment between NESB and Australian born persons is substantial in favour of the latter.

In 1998, some 17 percent of VET students were from NESBs. Their module-based pass rate and completion rates were somewhat lower than those of the rest of VET students (75 percent compared to 80 percent) but higher than the rates of Indigenous students (66 percent), *ANTA* (1998B:67-68).

The reduction in low skilled jobs has affected Australian born and NESB persons, but the greater dependence of the latter on blue collar jobs has hit their employment opportunities harder. The importance of proficiency in English as a factor in employment and shorter duration of unemployment of NESB workers is underlined in the statistical analysis. But while a more

determined effort on their part to acquire such proficiency might open up better opportunities for VET and assist in reducing the incidence of prolonged unemployment, it is apparent that more than that may be required to bring their numbers down closer to that of Australian born workers. The number of NESB workers is not trivial; they make up some 14 percent of the labour force.

## 13. Concluding observations

It was argued in the early part of this Report that there are real difficulties in deriving reliable measures of the costs and benefits of investment in education and training in money terms. However, it is possible to conclude from international studies that, although the precise figures are not reliable, private and social returns from investment in education and training are generally positive; and that enterprise investment in education and training can generally be expected to yield positive outcomes to productivity and pay. It was also found that to yield optimum outcomes, such investment in human capital must be associated with competent management, able to apply appropriate technology and work practices in the use of its labour force. It follows that to be meaningful, worker education and training may have to be accompanied by management education and training.

These considerations relate to the objectives set out in the opening of this paper – producing an economy capable of growing at a pace adequate to satisfy community expectations, providing full employment and the means to ensure that those who are at risk of being socially marginalised or excluded for want of adequate skills, are able to share in the general growth of the economy and incomes. However, it should be understood that there is more to education than securing work and income. These are necessary conditions for a civilised, stable and humane society. But there is a further requirement for such a society, namely, providing people with the opportunity of achieving higher intellectual, aesthetic and spiritual qualities.

This paper has been silent about this last objective of education. Yet no educational system is complete without concern for it. Men and women do not live by bread alone. Although the emphasis in this Report has been on vocational education and training, this objective gives point to the need not only of vocational education but also of general education at all stages of the learning process.

One of the main problems identified in this study relates to a sizeable proportion of young people – teenagers and young adults – who are at risk of going through a good part of life, not having stable jobs, suffering frequent and protracted unemployment and having to subsist on low incomes, many being excluded from economic progress. A common characteristic of this group is their limited educational attainment, usually short of completing upper secondary education or its equivalent, and their non-participation in learning following initial education. Their literacy and

numeracy deficiencies, which originate at the school level, are an important factor in their chequered employment history. Many in this group also have economically and socially disadvantaged backgrounds as well as other handicaps to which reference has been made. In this connection, attention has also been drawn to the particular problems of Indigenous Australians and those with NESBs, whose unemployment problem is much greater that that of the rest of the population.

The teenagers of today are the adults of tomorrow; and they carry their unattended problems into adulthood. It is not surprising that scholars in the field of education have laid considerable stress on the importance of attaining higher retention rates in upper secondary education by providing the necessary inducements to students to complete this phase of education. In Australia in recent times, the provision of vocational courses in schools is one such inducement. For many, it has provided an interest in staying on at this level as well as continuing in post-school education and training. But as has been noted, higher upper secondary retention also calls for special attention to those who are likely to need more than the normal educational inputs. These are young people who have a variety of personal difficulties arising from their disadvantaged backgrounds. They need assistance on a more personalised basis which the Danish system, for example, appears to provide. Furthermore, it has also been stressed that more training does not necessarily equal more employment. The volume and range of skills being promoted should match the demand for them.

While a higher rate of retention at the upper secondary school level should be the aim of education policy for the present and the future, there is also pressing need to rescue those who have not had the benefit of such a policy and have already 'fallen through the cracks'. This paper has referred to proposals for dealing with group. The economic cost of such a rescue operation is likely to be greater than the economic benefit. But in a humane and civilised society, social costs and benefits should be the calculus of such operation.

An *OECD* (1999A) study, focussing on the group likely to drop out of upper secondary education, has set out certain basic policy goals to deal with their problems of transition to working life. These include:

– High proportions of young people completing a full upper secondary education with a recognised qualification for either work, tertiary study or both.

– High levels of knowledge and skill among young people at the end of the transition phase.

– A low proportion of teenagers being at the one time not in education and unemployed.

– A high proportion of those young adults who have left education having a job.

– Few young people remaining unemployed for lengthy period after leaving education.

– Stable employment ad educational histories in the years after leaving upper secondary education; and

– an equitable distribution of outcomes by gender, social background and region.

The same OECD study (12 *et seq*; 114) also suggests certain key ingredients for a 'successful transition system' which may be summarised as follows:

– A healthy economy, where jobs are plentiful and the labour market is 'youth friendly'.

– Well organised and clearly defined and flexible pathways, whether apprenticeship, school-based vocational or general education, that connect initial education with work and further study.

– Tight safety nets for those at risk in one or more ways – by preventing early drop-outs from upper secondary education or its equivalent; by early intervention to rescue those who have dropped out; by an effective apprenticeship system; by active labour market programmes; and ensuring effective integration of education, labour market and welfare policies and well-managed delivery systems.

– Good information and guidance generally and on personalised basis for those at risk.

– Effective institutional processes involving co-operative efforts by governments, educational institutions, central, regional and local, employers and their associations, and trade unions.

The *OECD* (1999A:20) warns that there is no single answer to what constitutes an effective solution to the transition problem, nor to what particular countries should do to deal with their problems.

*The key ingredients of effective transition systems can work in different ways and in different circumstances to achieve success. National cultures, traditions and institutions will all influence the particular combinations that are effective.*

Against the background of these basic goals and key ingredients, the Australian score board appears as follows:

There is no question that compared to the 1980s, there has been a considerable improvement in the outcomes of the education and training system as reflected in a number of indicators. There has been a rise in upper secondary school retention and completions rates; and in post school education and training participation rates, in enterprises and in tertiary learning centres. The initial transition to work is beginning later and taking longer.

However, the signs are that the momentum of these developments has begun to falter in more recent years. This, despite the generally accepted view that the system promoted since the advent of the ANTA is, in principle, a sound model for dealing with the problems of rapid structural adjustments called for by technological developments and globalisation. But the system is still new and teething problems are to be expected. The important thing is that its deficiencies are being recognised and corrections proposed.

There is currently a ferment of thinking on education and training. Research is going on apace under the aegis of the OECD and other bodies, papers are being written in abundance, and many conferences are taking place in Australia and in other parts of the world on the issues of learning. International comparisons are being made, one country trying to learn from the experiences of others. Improvements will come not only from the ideas which are put forward, but also from the adequacy of resources governments are prepared to devote to give practical effect to such ideas and improving the economic and social outcomes of the educational system at all its levels. The political imperative which will make such resources available, will ultimately be driven by the perceived costs and benefits, economic and social, of education and training.

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# Chapter 2

# COST BENEFIT ANALYSES OF THE EDUCATIONAL SYSTEM

# DENMARK

GUDRUN BIFFL

## Introduction

A fairly unsuccessful economic development in the second half of the 1980s (average annual growth of GDP between 1985 and 1990: 1.2 percent compared to 3.2 percent in the EU) triggered off a general realisation that reform policies were necessary for international competitiveness and sustainable socio-economic performance. In due course, far-reaching structural reforms were undertaken in the product and labour markets, in the tax system and last but not least the educational system. The reforms in the educational system were considerable, in particular in the area of post-compulsory education, i.e., in upper secondary and tertiary education. The main thrust of the reform was to prepare the society for the challenges of a global economy.

Cost-Benefit analyses of the education system have been undertaken in order to gain insight into the complexities of interlinkages between education, productivity and economic growth on the one hand and employability of the work force and social inclusion on the other. The funding system was reformed in order to increase the transparency of the system, which is instrumental to restraining increases in public expenditure. Institutional reform is necessary to ensure a sustainable system in the light of the challenges of an ageing and learning society.

Denmark has a large public sector and an extensive welfare system, including free education and health services and a generous social security system. The reform process, which was introduced in the late 1980s was successful on many accounts. Economic growth did not only pick up in the mid 90s but exceeded the annual average growth rate of the EU (1994-1999: EU +2.3 percent; Denmark +2.5 percent). The large budget deficit of the 1980s was eliminated by 1996 and a surplus built up reaching 3 percent of GDP in 1999. The surplus is instrumental for the reduction of the government debt, which amounted to 56 percent of GDP in 1998.

Economic growth was accompanied by a decline in unemployment to levels not experienced since the early 1970s; major contributory factors for the unemployment decline were tighter rules

regarding work availability (mutual obligation schemes[1], more effective targeting of active labour market programmes and recourse to early retirement and paid leave schemes.

While budget expenditure decreased in many areas, this was not the case for education. The share of public expenditure on education in percent of total public expenditure conformed to the OECD average of 13 percent in 1997, much the same as in 1990 – this expenditure includes direct investment in the institutional infrastructure, subsidies to private households (grants to students etc.), subsidies to private educational institutions (e.g., to firms or unions carrying out apprenticeship training). In Austria the proportion of public expenditure on education in the public budget is somewhat below the OECD average (11 percent)[2]. Total expenditure on education as a percentage of GDP is amongst the highest of OECD countries with 8.2 percent of GDP in 1997 (OECD average 6.5 percent), compared to 6.7 percent in Austria.

*Table 1: Macroeconomic indicators: output, employment, productivity and labour costs*

*Annual average percent change*

| | European Union | | | | Denmark | | | |
|---|---|---|---|---|---|---|---|---|
| | 1975-1985 | 1985-1990 | 1990-1999 | 1994-1999 | 1975-1985 | 1985-1990 | 1990-1999 | 1994-1999 |
| GDP growth | 2.3 | 3.2 | 1.8 | 2.3 | 2.6 | 1.2 | 2.2 | 2.5 |
| Number employed | 0.1 | 1.4 | 0.2 | 0.9 | 0.8 | 0.3 | 0.4 | 1 |
| Average hours worked | – | – 0.4 | – 0.3 | – 0.3 | – | – 0.7 | 0.1 | – 0.2 |
| GDP/number employed | 2.2 | 1.7 | 1.6 | 1.3 | 1.8 | 0.9 | 1.8 | 1.5 |
| GDP/total hours worked | – | 2.1 | 1.9 | 1.6 | – | 1.6 | 1.7 | 1.6 |
| Consumer prices | 10.3 | 4.4 | 3 | 2.1 | 9.2 | 3.9 | 2.1 | 2.2 |
| Average earnings | 11.6 | 6.4 | 4.1 | 3 | 8.9 | 5.1 | 3.4 | 3.7 |
| Average real earnings | 1.2 | 1.9 | 1.1 | 0.8 | – 0.2 | 1.1 | 1.3 | 1.5 |
| Average real labour costs | 1.5 | 1.4 | 1.1 | 0.8 | 0.7 | 0.7 | 1.2 | 1.6 |
| Real unit labour costs | – 1.1 | – 0.8 | – 0.7 | – 0.7 | – 1.1 | – 0.2 | – 0.6 | 0.1 |

Source: *European Commission* (2000), p. 101.

In spite of the positive overall economic and labour market performance, the number of hard-core welfare recipients has not declined (*Finansministeriet,* 2000, p. 15.). Measures to bring people from the margin of the labour market towards the centre are being developed, in which education and training play a considerable role. Cost-benefit analyses show that investment in human capital should be concentrated upon youth, i.e., inclusion at an early age and the increase of the proportion of youth with more than compulsory education the objective, if the economic return to the individual and society is to be maximised.

[1] A key element of labour market policy reform is to activate unemployed by obliging them to accept job offers outside their occupational field after three months.

[2] See *OECD* (1998) p. 88.

## The education system

Education serves a number of different functions. This research only looks at economic costs and benefits, in particular the relationship between investment in human capital and labour market performance. The analysis is based upon a review of the relevant literature and interviews of planners of educational policy and researchers of educational outcomes in government departments and universities. The starting point of the analysis is a presentation of the educational system from a historical perspective.

### Major building blocks of the education system of today

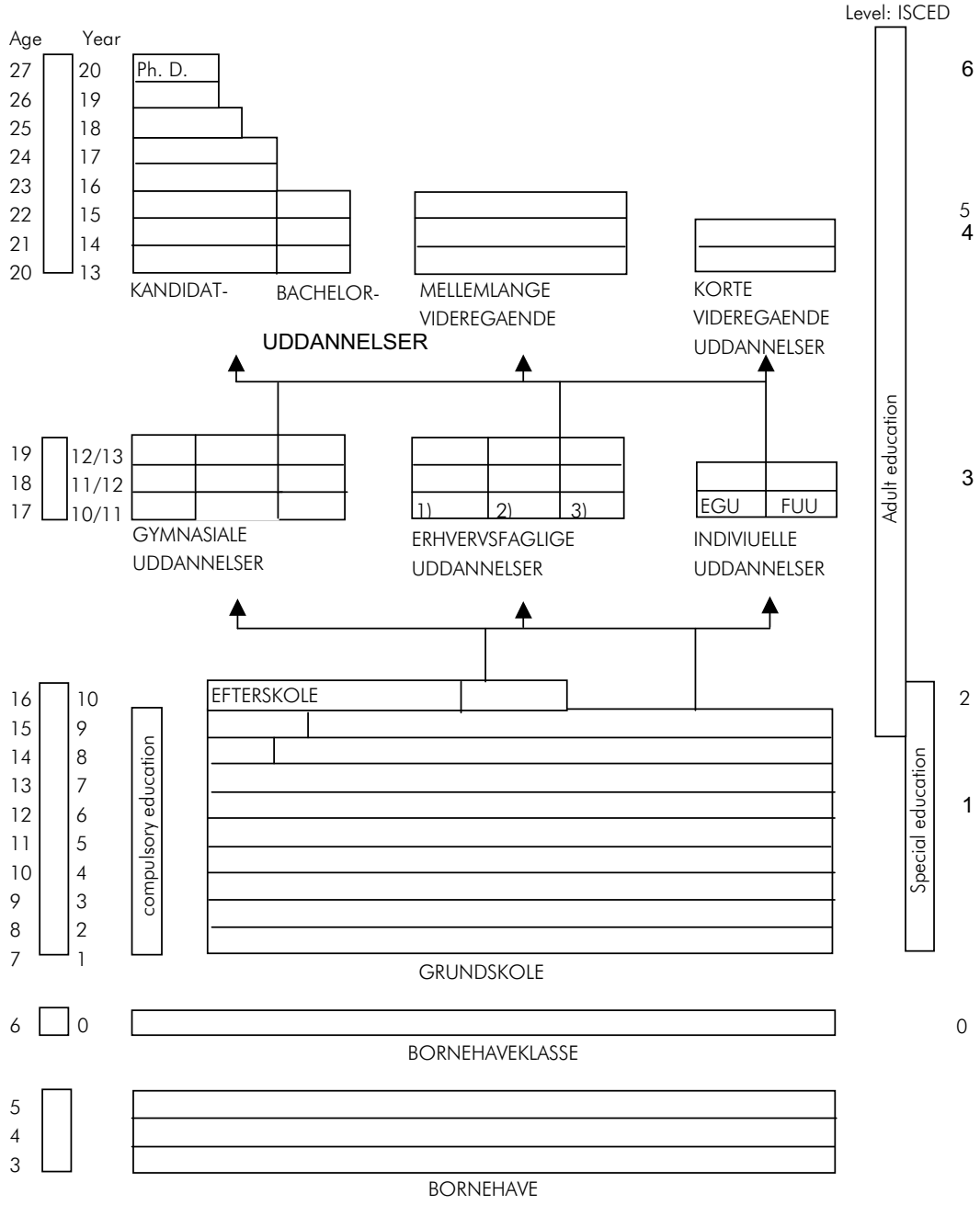
9 years of compulsory education with an option of an additional voluntary year was introduced in 1975, instead of the former 7 years (in place since 1814). Apart from the prolongation of compulsory education a more important reform step in the education system was embarked upon, i.e., the introduction of a comprehensive structure. The following reform steps were all directed towards the gradual abolition of all forms of streaming. The latest revision of the compulsory school system (Folkeskole Act) was in 1994.

Compulsory education starts relatively late, but nearly all children attend the year before compulsory education, i.e., nursery school, which prepares kids for primary school. Given the great degree of homogeneity of the Danish society (small number of migrants and foreign citizens), the late start in institutionalised socialisation and education is not seen as a cause for any permanent disadvantage of groups of persons.

- Entry into an institutionalised system of care commences at an average age of 3 – child care (Bornehave) until the age of 6;
- then one year of Pre-school follows ( Bornehaveklasse), before
- compulsory school begins (Grundskole) at the age of 7; it lasts until the age of 16, comprising primary and lower secondary education;
- a differentiated system of upper secondary education has evolved over time which lasts until the age of 19;
- at twenty tertiary university or non-university education commences.

From Pre-school onwards (year 0) until year 10 a special education stream is in place which allows the attainment of ISCED 1 level of skills. The successful completion of compulsory education (final exams are optional but are required by schools of further education and by firms) provides ISCED 2 level skills. Upper secondary education is quite differentiated. It may prepare students for tertiary education (ISCED 3A and 3B) or for entry into working life (ISCED 3C). Post-secondary non-tertiary educational programmes are at the borderline, they are in the Danish case the short-cycle higher education programmes and provide skills of ISCED 4 level. The first stage of tertiary education, i.e., medium cycle higher education and bachelor programmes, provide skills of ISCED 5 level. Long duration university education provides advanced research qualifications (ISCED 6).

*Graph 1: Organisation chart of the Danish education system*




1) ERHVERVSUD-DANNELSER
2) SOCIAL-OG SUND-HEDSUDDANNELSER
3) LANDBRUGS SOFARTSUD-DANNELSER, CCC

Source: *OECD* (1996), p. 266. – ISCED 1997 (*OECD,* 1999).

*Overview of the structure of upper secondary education*

Traditionally upper secondary education has consisted of three branches,

- an academic stream (gymnasiet)[3],
- a vocational training system (erhvervsuddannelserne)[4],
- a farmer's education and training system (landbrugsskolerne)[5].

For a long time the streams were quite separate and had different objectives and functions, documented in the administrative separation of responsibility, e.g., the Ministry of Industry and Commerce was responsible for vocational education until 1961. The gymnasium prepared for universities and other institutions of higher education, vocational education provided medium skills for industry, commerce and administration, farmer schools for farming. Over time, the segments have been integrated in a comprehensive structure allowing flows not only within but also between the segments.

1. The general upper secondary education system:

Consists of the traditional initial education stream, which finishes with the baccalaureate (studentereksamen), and a stream for mature students (put in place in the late 1960s), who have completed 10 years of compulsory education and have obtained some experience outside the education system (HF). Completion of the HF-programme gives access to tertiary education in certain fields.

2. Vocational upper secondary education:

As the propensity to attend the gymnasium increased during the 1960s (from 7 percent of youth in 1960 to 14 percent 1970), the traditional apprenticeship education was reformed in the 1970s to attract more students. Periods of full-time school of general learning as well as theoretical topics on the trade to be studied were introduced, at times also applied skills. At the same time a new system of vocational education was put into place in which students spent the first year at a vocational school before choosing an apprenticeship. Both systems of vocational education continued to be adapted to the changing needs until they merged into one system in 1991. Vocational education is offered in the various trades, the social and health services, agriculture

[3] This type of education has the origins in the medieval religious (cathedral) schools.

[4] Most of these schools were established between 1830 and 1880 to provide general education to apprentices of trades and services.

[5] They originated in the Danish Folk High School movement among farmers in the 19th century, they were boarding schools.

and maritime services. There is great flexibility in the combination of in-school education and training in firms.

The curriculum is decided by the Ministry of Education, in close co-operation with the social partners. The length of the courses varies from 2½ years to 5 years, the norm being 4 years, with 30 percent to 50 percent of the time in schools. 135 technical and commercial colleges, all private non-profit institutions, provide vocational upper secondary education for some 120,000 students. The funding is provided by the state on the basis of the so-called taximeter system.

It is structured into a medium level vocational education and training system (EUD and SOSU), with a minimum of 2 years of education and training and a maximum of 4 years, and a higher skill attainment level, which prepares for tertiary education (HTX and HHX)[6]. The higher technical and commercial education streams offer the option to continue with engineering and business diploma studies or short cycle tertiary education programmes.

In 1995, 2 independent programmes were introduced, FUU and EGU, which are carried out by the municipalities; these are vocational schools (Lehrwerkstätten) put in place to counter the trend of declining numbers of firms offering apprenticeship posts.

An Europen Commission funded initiative of the 1970s, aimed at the improvement of the skills of about 15 percent of youth, who have dropped out of the school system without any recognised qualification, has evolved into a permanent part of the youth education system, the so-called Production schools (*Ljung,* 1997, *Moeller – Ljung,* 1999). They are flexible open schools which provide individual attention; they are bridges back into formal education or the labour market.

3. The Farmer schools

Remained unchanged until the 1970s when the decline in the number of independent farms and the specialisation of farms resulted in a significant decline of students forcing the schools to reform and merge into the vocational system.

*Structure of tertiary education*

1. University education: the first university was established in Copenhagen in 1479, the second in the 1920s in Aarhus, three more in the course of the 1960s, introducing new structures in university studies.
2. Non-university education: The first was teacher training, established in 1814 (for compulsory education to be enforceable), next were engineering colleges (beginning of 20th century) to provide applied engineering degrees. Short cycle tertiary programmes were developed (lasting 18 months to 2½ years), mostly in vocational colleges.

[6] HTX is the technical vocationally oriented gymnasium and HHX the commercial one.

The duration of tertiary education programmes varies between 18 months and 7 years (preparing for applied engineering and commerce degrees). The Ministry of Education issues broad guidelines, the final content of the programmes is decided upon by the individual institutions (by an independent board). The programmes are taught at 169 institutions, with about 170,000 students.

*Special education needs (SEN)*

Special education systems have been developed for children and adults who need extra support for efficient learning in all OECD countries. Students with disabilities, learning deficiencies or who come from disadvantaged backgrounds need additional support to make educational progress. Increasingly these students tend to be included in mainstream education, additional resources being allotted to the mainstream schools to cater for the special needs kids. None of the OECD countries has yet a fully inclusive public education system.

Since the differing degree of integration of special needs kids into mainstream education makes international comparisons difficult a new tri-partite international taxonomy classifies special programmes in an internationally consistent way. Category A needs arise from impairing conditions; category B needs refer to learning difficulties and category C refers to disadvantage. There is a substantial overlap between these categories. If one takes all three elements together, the proportion of children with special needs in compulsory education was 6.2 percent in Switzerland, 15.9 percent in Finland, about 15 percent in the United Kingdom and some 20 percent in Ireland in 1996 (*OECD,* 1998, p. 228).

Denmark participated in an international comparison of special education needs systems in 8 OECD countries (together with Australia, Canada, Germany, Iceland, Italy, the United Kingdom and the United States) undertaken in 1995 to 1998 (*OECD,* 1999C). In Denmark 13 percent of pupils were recognised as having special needs, a proportion similar to the United States (12 percent), Canada (10 percent to 16 percent), Australia (12 percent to 20 percent) and the United Kingdom (15 percent to 20 percent), but higher than in Germany (4.3 percent) and Italy (2 percent).

The proportion of students formally assessed and placed in special schools, however, is less than 1 percent of all students in all countries under analysis except in Germany (where it is 4 percent) and the United Kingdom (with 1.3 percent). The differences in data are based on different perceptions of special needs and thus of policy towards special needs.

The way to cater for special needs is to either put pupils into special schools, into special classes in regular schools or in regular classes in regular schools. In Denmark there was a tendency in the 1980s to put special needs pupils into special classes in regular schools (from 24 percent 1981 to 32 percent 1988); but the majority of SEN-pupils are placed in special schools, although the proportion has fallen from 50 percent 1981 to 46 percent 1988. The share of special education

needs kids in regular classes has been declining over that time span from 26 percent to 22 percent.

In general a move towards inclusion can be discerned, reflected in regular schools identify larger numbers of pupils as having special needs. In the United Kingdom, the number of certified students and individual education programmes increased from 2.1 percent to 2.9 percent between 1992 and 1997. In the United States the number of students receiving special education services increased between 1990 and 1994 from 9.8 percent to 10.3 percent. Also Austria is increasing the expenditure on special needs kids, in particular to improve the integration of children of foreign migrants.

## Enrolment and transition rates between elements of the education system and the labour market

In 1997 about 610,000 pupils attended compulsory schools, i.e., primary and lower secondary school, of whom 85 percent in public schools[7]. 95 percent of the pupils continue with some form of upper secondary education[8]. This is a significant improvement compared to 1983, when 11 percent left compulsory school without following any upper secondary education.

In upper secondary education some 240,000 pupils are counted. About 52 percent of the students are in a gymnasium type programme preparing for tertiary education (only 38 percent in 1982), either in general (39 percent, of which 6 percent in HF) or in vocational orientation (HHX and HTX: 13 percent). In the last decade the share of youth attending gymnasium has increased, above all as a result of a higher propensity to enrol in the vocational orientation programmes which are offered in vocational colleges[9]. All programmes last for three years except the mature student programme (HF), which is a two year programme and can be taken in a Gymnasium or an adult education centre (VUC).

41 percent are in the medium skill vocational schools (1982: 48 percent), and the rest in the newly established individual programmes (FUU = open youth education) and EGU (vocational basic education) or other minor special programmes.

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[7] The pupils remain normally in the same class (average class size 19 pupils) throughout compulsory education.

[8] Those 5 percent who are entering the labour market may at some later stage reenter education in the individual programmes FUU and EGU, which are run by the municipalities.

[9] The HHX is offered in business colleges and the HTX in technical colleges. HHX courses became popular from 1975 onwards and were turned into a three year programme of upper secondary education following compulsory education in 1995. The HTX started in 1982 and was transformed into a short cycle higher technical education programme of three years after finishing compulsory education in 1995.

In the last decade there has not only been a reduction in the proportion of students attending medium vocational education programmes but also a shift away from the technical and commercial/administrative branches (EUD) to social and health training (SOSU) programmes.

The reduction in the numbers of pupils in vocational upper secondary education has been more pronounced than the shift in the proportions of a birth cohort suggests, due to a decline in the youth cohorts per se.

Tertiary education was traditionally composed of the three following categories:

1. The short cycle (1-2½ years), for persons with vocational college education to become building or electronic technicians, laboratory technicians etc..
2. Medium-term cycle (3-4 years) to become teachers in the compulsory education system, journalists, nurses, social workers, engineers.
3. Long-term cycle (5-8 years) taught in universities to obtain a masters degree (kandidat).

In 1992 the Anglo-Saxon system of university education was introduced in social sciences, humanities, law, natural sciences (three year bachelor degree programme, followed by two years for the masters degree and three years for the Ph. D.), while medicine, architecture and some others held on to the old system.

## Enrolment and transition rates in upper secondary education[10]

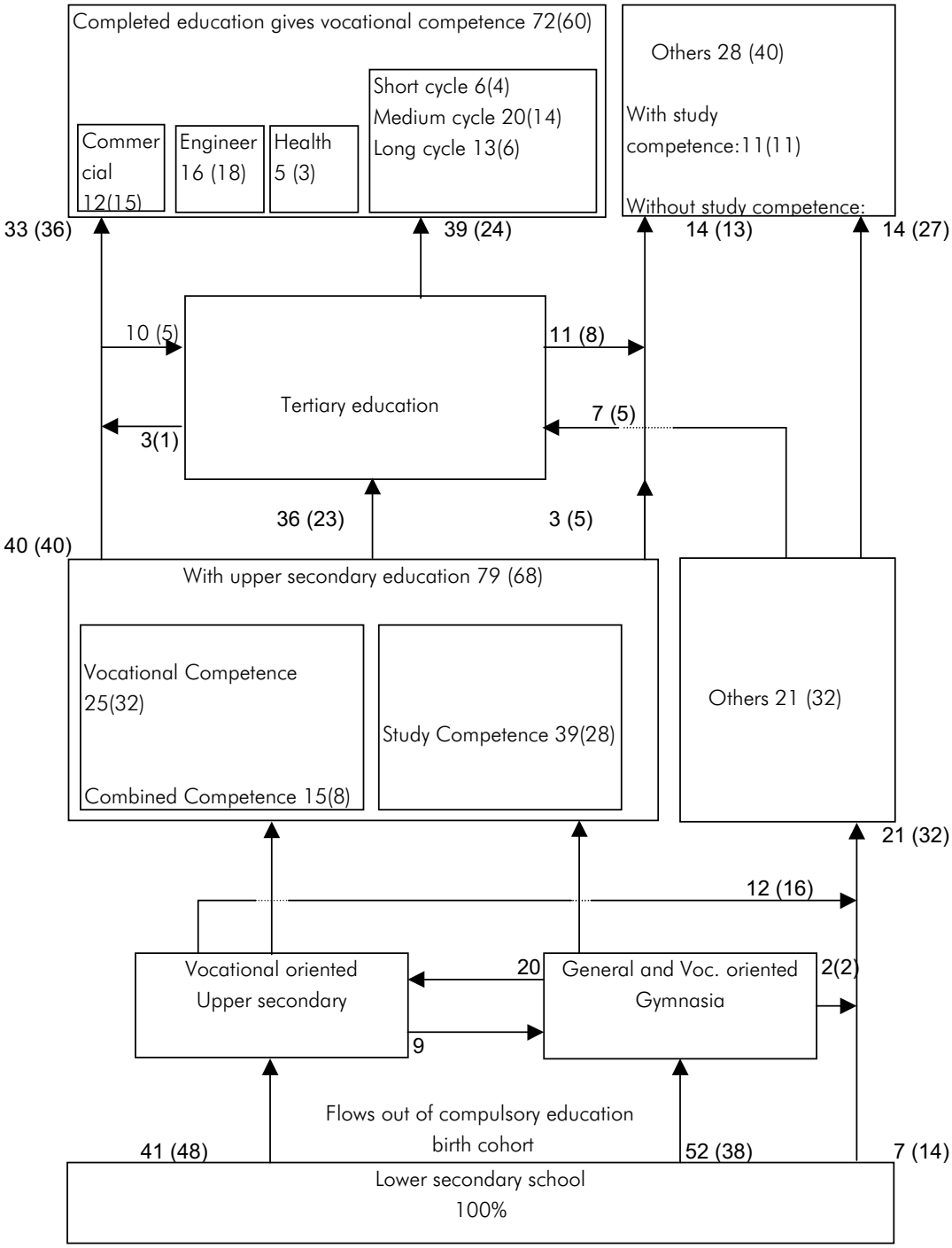
The percentages in graph 2 indicate that of the 52 percent of all students who enter general or vocational orientation gymnasia after compulsory education 75 percent, i.e., 39 percent of the original youth cohort, obtain study competence. This does not imply, however, that 25 percent of students in the gymnasium drop out of education altogether; about 20 percent choose vocational upper secondary education, some 9 percent of the vocational orientation upper secondary schools change into a gymnasium, and only some 2 percent drop out of the gymnasium. The drop-out rate differs, however, by type of programme; it is lowest in the commercial stream and highest in the HF-stream.

- In the general education stream of the gymnasium (initial education) about 85 percent of the pupils complete their education as originally planned.
- In the commercial education stream the completion rate is higher (88 percent).
- In the mature student stream (HF) the completion rate is lower (66 percent).

[10] The data used in this chapter is taken from *Hummeluhr* (1999).

*Graph 2: Distribution of pupils upon educational levels, 1982 and 1995*

*As a percentage of cohort terminating compulsory school*




( ) numbers in brackets are for 1982

Source: *Hummeluhr* (1999), pp. 39-40.

In vocational upper secondary education the completion rates differ by programme:

- If one calculates an average on the basis of the percentage of those completing a full vocational education programme in relation to the total number of entries into the system, the success rate amounts to 65 percent.
- If one calculates a rate on the basis of those who get a training place in an enterprise, however, the completion rate is around 90 percent.

There is considerable segmentation between the elements of upper secondary education. About 50 percent to 60 percent of pupils change within the system of vocational education and less than 10 percent of those, who start out with vocational education, transfer to a gymnasium.

The majority of the graduates from the gymnasium continue with tertiary education:

- about a decade ago the transition rate was $^2/_3$, now it is closer to $^3/_4$,
- the general education stream tends to continue with university education,
- the vocational orientation branch with applied tertiary education.

In both cases the long university education is becoming more important. HF-graduates tend to go on to tertiary education as well, but tend to choose medium cycle programmes.

In contrast, graduates from vocational education enter the labour market in large numbers (65 percent to 75 percent), the largest share in the industrial and graphics field, the lowest in commercial and service trades. Only 11 percent to 14 percent go on to tertiary education.

The Danish educational system, which used to be quite similar to the Central European education system of Austria, Germany and Switzerland, but also of Netherlands, is adopting reforms, which bring it closer to the Anglo-Saxon system. This is particularly the case for vocational education, where reforms meant that people with in-house company training have fewer opportunities for further education whereas reforms in Germany and since 1992 also Austria (Fachhochschule) enhanced their opportunities.

## The role of the state in a federal system

The Danish administrative system is quite regionalised, somewhat like Austria and Germany, consisting of 14 counties and 275 municipalities[11]. The municipalities are responsible for primary and lower secondary education; they own and run public schools and they are supervising the quality of private schools. The expenses are covered by block grants from the government; the size

[11] For a detailed account of the economic management of the Danish education system see *Hansen – Rasmussen* (1995).

of the grants to counties and municipalities is calculated on the basis of a number of criteria, in particular the number of citizens and the age structure. The municipal primary and lower secondary schools teach the majority of pupils. The number of pupils in private schools has risen, however, in the last decade and amounts now to some 15 percent of all students[12]. The state covers about 80 percent of the recurrent expenses of private schools.

*General upper secondary education* (gymnasium), i.e., both the mainstream programme, which leads to the Studentereksamen, and the programme for mature students (HF = higher preparatory exam), is under the control of the *counties;* only the responsibility for pedagogical matters lies with the Ministry of Education. *The vocational upper secondary programmes*, however, are the responsibility of the *Ministry of Education*; programmes are offered in commercial (HHX = higher commercial exam) and technical (HTX = higher technical exam) colleges.

*Vocational Training of Youth* is in the main[13] the responsibility of the *Ministry of Education,* assisted by the council for Vocational Education, which is composed of social partners, local and regional authorities, teacher associations etc. The social partners hold the examinations (journeyman's tests, in Deutsch: Gesellenprüfung), issue the certificates and approve firms as places for apprenticeship. Trade committees (equal number of employer and employee representatives inspect vocational colleges and ensure the bridge between these colleges and local enterprises and worker organisations.

There are, however, also so-called individual programmes (EGU, FUU), which are run by the Municipalities, in order to provide options for young people, who find it difficult to fit into the mainstream education system. Also the Production schools fall into this category. They are established by the municipalities as self-governing private foundations with independent boards, financed by the state (the Ministry of Education).

Vocational education and also labour market policy, which has a strong education and training element, is thus, with some exceptions, not in the domain of the counties or municipalities. They co-operate, however, in order to encourage young (unemployed) people to enter upper secondary education. *Labour Market Policy* (design and administration) lies with the *Ministry of Labour,* including the responsibility for *adult vocational training*. The National Labour Market Authority, an agency of the Ministry of Labour, has the responsibility to implement the policies of re-integration of groups of unemployed into the labour market. It is assisted by the National Council of Employment, by 14 Regional Labour Market Offices and by 14 Regional Labour Market Councils, in which the social partners and representatives of counties and municipalities are included.

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[12] The proportion of the number of private schools is somewhat higher (28 percent) since the average size of private schools is smaller (160 pupils compared to 302 pupils in the average public school).

[13] Exceptions are not only social and health service schools, which are under control of the counties, but also maritime education (Ministry of Industry and Commerce) and Postal and Railways Schools (Transport Ministry).

The Labour Market Authorities are assisted in the area of adult vocational training by the National Council for Continued Training, a council composed of representatives of the Social Partners and various authorities. Training programmes are designed by committees with equal representation of employers and employees (more than 50 committees at present). They were established in order to minimise potential conflict between the Ministry of Labour and the Ministry of Education.

The *training of unskilled and semiskilled workers* takes place in *Labour Market Training Centres* (23 AMU-centres[14], independent institutions governed by a board, composed of social partners and local authorities, fully financed by the government – currently approximately 1.5 billion DKK or 2.8 billion ATS for 400,000 participant weeks), *retraining and up-skilling* is conducted by *vocational colleges*, which belong to the Ministry of Education, *funded by the Ministry of Labour*.

Decentralisation of educational planning and the concomitant re-organisation of funding have been the focus of reforms of vocational education in the 1990s (*Kjaersgaard,* 1994, *Wittrup,* 2000). The objective was the combination of a system of incentives and more decentralisation of decisionmaking and operation in order to

- relate vocational and higher education to the market,
- induce educational institutions to become more results oriented and costumer focused,
- introduce incentives to economise on resources.

## Economic impact of the education system

The education system is seen by Denmark not only as a means to prepare youth for the labour market but also as an important instrument of empowerment of the individual to active participation in a democratic society. The preservation of the competitiveness of the Danish economy is, however, also of pivotal importance, which it hopes to foster through investment in human capital. The latter is supposed to raise long-term economic growth and productivity (see chapter on productivity, Austria).

### Educational attainment level of youth relative to adults

The educational attainment level of the adult population of working age is an indicator for the stock of human capital. It highlights the education policy of the past and is a point of reference for more recent education policy, i.e., the differential between the adult population and youth.

[14] They are mainly used by large enterprises and rather marginally by firms with less than 5 employees – see *Greve* (1998).

*Table 2: Distribution of the population 25 to 64 years of age by level of educational attainment (1998)*

| | Pre-primary and primary education | Lower secondary education | Upper secondary education | Post secondary non-tertiary education | Tertiary-type B education | Tertiary-type A and advanced research programmes | All levels of education |
|---|---|---|---|---|---|---|---|
| | ISCED 0/1 | ISCED 2 | ISCED 3 | ISCED 4 | ISCED 5B | ISCED 5A/6 | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Australia | x(2) | 44.0 | 30.6 | x(3) | 8.8 | 16.6 | 100 |
| Austria* | x(2) | 26.7 | 57.0 | 5.7 | 4.5 | 6.2 | 100 |
| Denmark | 0.1 | 21.4 | 53.2 | x(3) | 19.8 | 5.4 | 100 |
| Finland* | x(2) | 31.7 | 38.9 | - | 16.7 | 12.8 | 100 |
| Germany | 2.1 | 14.1 | 56.3 | 4.4 | 9.0 | 14.0 | 100 |
| The Netherlands | 12.5 | 23.2 | 40.1 | x(6) | x(6) | 24.2 | 100 |
| Switzerland | x(2) | 18.5 | 58.5 | x(3) | 9.0 | 14.0 | 100 |
| United Kingdom | x(2) | 19.2 | 57.3 | x(7) | 8.2 | 15.4 | 100 |
| USA | 5.0 | 8.6 | 51.6 | x(3) | 8.3 | 26.6 | 100 |
| Country mean | 24.4 | 19.4 | 59.9 | 5.4 | 9.4 | 13.6 | |

Source: *OECD* (2000A), p. 33. Note: Column of reference is given in brackets after "x", x(2) means that data are included in column 2. – * Year of reference 1997.

ISCED 0: Early childhood education serves a dual purpose: to give the child daily care while parents are at work.
ISCED 1: Programmes at the primary level generally require no previous formal education.
ISCED 2: The core of lower secondary education continues the basic programmes of the primary level.
ISCED 3: Upper secondary level requires the completion of the lower secondary level of educationor a combination of basic education and vocational experience.
ISCED 4: Post-secondary non-tertiary educational programmes are at the boundary between upper secondary and post-secondary education.
ISCED 5A: Tertiary-type A programmes are largely theory-based and are designed to provide sufficient qualifications for entry to advanced research programmes and professions with high skill requirements, such as medicine, dentistry or architecture. Tertiary-type A programmes have a minimum cumulative theoretical duration of three years' full-time equivalent, although they typically last four or more years. These programmes are not exclusively offered at universities. Conversely, not all programmes nationally recognised as university programmes fulfil the criteria to be classified as tertiary-type A. Tertiary-type A programmes include second degree programmes like the American Master. First and second programmes are sub-classified by the cumulative duration of the programmes.
ISCED 5B: Tertiary-type B programmes are typically shorter than those of tertiary-type A and focus on practical, technical or occupational skills for direct entry into the labour market, although some theoretical foundations may be covered in the respective programmes. They have a minimum duration of two years full-time equivalent at the tertiary level.
ISCED 6: This level is reserved for tertiary programmes that lead directly to the award of an advanced research qualification, e.g., an Ph.D. The theoretical duration of these programmes is 3 years full-time in most countries, although the actual enrolment time is typically longer. The programmes are devoted to advanced study and original research.

In 1998 21.5 percent of the Danish population between 25 and 64 years of age, did not have more than lower secondary education, i.e., somewhat less than in Austria (26.7 percent). People with upper secondary education up to ISCED 3 skill level constituted 53.2 percent of the adult population of working age in Denmark, again somewhat less than in Austria (57 percent). The share of people with a skill level of ISCED 4 and beyond, was thus with 25.2 percent in Denmark, higher than in Austria, where only 16.4 percent of the 25-64 year olds had that skill attainment level. Nonetheless, it is reasonable to say that both in Denmark and Austria the medium skill segment is very prominent in international comparison at the cost of postsecondary education (ISCED 4) and tertiary education (ISCED 5 and beyond). The highest skill segments make up about 28 percent of the 25-64 year olds on average in OECD countries.

If we compare educational attainment levels of youth, Denmark has been able to catch up to the OECD average in the degree of skill acquisition at the highest skill segments whereas Austria continues to lag behind in that area, in particular concerning the participation in tertiary education. Denmark has also been more successful than Austria in reducing the proportion of youth with no more than lower secondary education, i.e., to move them up into upper secondary education.

The more recent efforts to increase the educational attainment level of the population can be judged by looking at the school attendance rate by age:

- at the age of 17: 82 percent of youth were still in the education system in Denmark, compared to 86 percent in Austria and 80 percent on average in the OECD,
- the 19 year olds: the share of youth continuing with higher upper secondary education or tertiary education, i.e., beyond ISCED 3, amounted to 57 percent in Denmark (40 percent for the 20 year olds), 41 percent of the 19 year olds in Austria (29 percent for the 20 year olds), and 52 percent of the 19 year olds on average in the OECD (43 percent for the 20 year olds).

*Table 3: Transition characteristics at each year of age from 15 to 20: net enrolment rates by level of education*

*Based on head counts (1998) in percent*

| | Age 15 | Age 16 | | Age 17 | | | Age 18 | | | Age 19 | | | Age 20 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Second. education | Second. education | Second. education | Post-second. non-tertiary | Tertiary education | Second. education | Post-second. non-tertiary | Tertiary education | Second. education | Post-second. non-tertiary | Tertiary education | Second. education | Post-second. non-tertiary | Tertiary education |
| Australia | 99 | 97 | 81 | 1 | 5 | 34 | 3 | 30 | 20 | 3 | 35 | 17 | 2 | 32 |
| Austria | 94 | 88 | 75 | 11 | | 43 | 19 | 6 | 15 | 11 | 15 | 5 | 4 | 20 |
| Denmark | 98 | 93 | 82 | | | 74 | | | 54 | | 3 | 30 | | 10 |
| Finland | 100 | 89 | 93 | | | 82 | | 3 | 24 | | 19 | 14 | | 31 |
| Germany | 98 | 96 | 91 | | 1 | 83 | | 3 | 40 | 18 | 8 | 18 | 15 | 15 |
| Netherlands | 99 | 96 | 85 | 1 | 3 | 62 | 1 | 15 | 39 | 1 | 25 | 26 | 1 | 30 |
| Switzerland | 98 | 90 | 85 | | | 78 | 1 | 1 | 54 | 3 | 6 | 23 | 3 | 13 |
| U.K. | 101 | 81 | 66 | | 2 | 25 | | 24 | 14 | | 33 | 10 | | 33 |
| USA | 99 | 84 | 74 | | 3 | 23 | 3 | 37 | 4 | 3 | 39 | 1 | 3 | 40 |
| Country mean | 93 | 88 | 78 | 1 | 1 | 48 | 4 | 16 | 23 | 4 | 25 | 12 | 3 | 28 |

Source: *OECD* (2000A), p. 136.

## Performance of the education system

International comparisons of student achievement have become an essential tool in assessing the performance of education systems, whereby achievement in mathematics, science and reading is measured. Mathematical skills are increasingly important in a globalised economy in which the adaptation to technological change is a key variable of competitiveness. Data from the Third International Mathematics and Science Study (TIMSS) put the Danish 14 year olds clearly below the

average of OECD countries in mathematics for the year 1995 (Table 5). Pupils in Denmark did not perform above average in international comparison in reading tests either (Table 4).

Gender differences in student achievement were more pronounced in Denmark in both mathematics and science than in OECD countries on average (Table 6). This feature implies that education does not counter the tendency of gender segmentation in the labour market. In a globalised economy driven by technological change, the career opportunities and the earnings potential of women relative to men are thus not as good as those of men in Denmark.

*Table 4: The achievement of Danish pupils in reading, mathematics and science in international comparison*

| | Reading | | Mathematics* | Science* |
|---|---|---|---|---|
| | Mean scores* | Low-scoring students** | | |
| Denmark | 100 | 14.5 | 100 | 100 |
| Finland | 109 | 4.7 | n | n |
| Germany*** | 100 | 16.6 | 101 | 111 |
| Netherlands | 97 | 17.6 | 108 | 117 |
| Norway | 98 | 13.6 | 100 | 110 |
| Sweden | 106 | 10.6 | 103 | 112 |
| Switzerland | 103 | 10.7 | 109 | 109 |
| USA | 103 | 15.5 | 100 | 112 |

Source: *OECD* (1997), p. 90. – * Denmark = 100. – ** percent of students more than one standard deviation below the mean score; the OECD average is 15 percent. – *** Former Federal Republic of Germany.

On the basis of a comparison of proficiency in reading, writing, maths, science (Table 4), educational performance in Denmark is not as high as that of Sweden and Finland, in spite of an above average expenditure on formal education. Denmark finds itself in the middle to low end of educational attainment of OECD countries. In addition, gender differences in mathematics and science achievement are more pronounced than in Sweden or Norway implying that girls enter science and mathematics oriented upper secondary and tertiary education programmes to a lesser extent than boys. The significant difference in the earnings potential of women compared to men (see chapter on returns to education) is thus partly due to the gender differences in educational patterns, which are rather traditional.

Some 20 percent of youth do not complete upper secondary education. Incentives to select education of high expected social rates are weak as wage differentials are relatively small in international comparison (see *OECD,* 1997, p. 98). While a person in Denmark with an educational attainment level below ISCED 3/4 could earn on average 85 percent of the earnings of a person with ISCED3/4 level of skills, the relative earnings power in countries like Australia (79 percent), USA (70 percent), United Kingdom (64 percent) or Switzerland (74 percent) is significantly lower for this skill category.

*Table 5: Student differences in mathematics and science achievement*

*Distribution of mathematics/science achievement scores, eighth grade*

| | Mathematics | | | Science | | |
|---|---|---|---|---|---|---|
| | Mean | 25th percentile° | 75th percentile° | Mean | 25th percentile° | 75th percentile° |
| Australia** | 530 | 460 | 600 | 545 | 475 | 619 |
| Austria** | 539 | 474 | 608 | 558 | 499 | 623 |
| Denmark** | 502 | 443 | 561 | 478 | 423 | 541 |
| Germany** | 509 | 448 | 572 | 531 | 463 | 602 |
| Netherlands** | 541 | 477 | 604 | 560 | 505 | 619 |
| Norway | 503 | 445 | 560 | 527 | 470 | 588 |
| Sweden | 519 | 460 | 579 | 535 | 476 | 598 |
| Switzerland* | 545 | 485 | 607 | 522 | 460 | 587 |
| England* | 506 | 443 | 570 | 552 | 485 | 625 |
| USA* | 500 | 435 | 563 | 534 | 465 | 608 |
| Country mean | 516 | 456 | 576 | 523 | 464 | 586 |

Source: *OECD* (1996), p. 206, 207. – ° 25 or 75 per cent of students score below this point. – * Countries met TIMSS sampling requirements only partially. – ** Countries did not meet TIMSS sampling requirements.

It is therefore argued in Denmark (*OECD,* 1997, p. 12) that 'the high rate of pay at the lower end of the wage scale weakens incentives to complete an upper secondary education in order to secure a position as a skilled rather than unskilled worker'. Only the higher unemployment risk of unskilled workers acts as an incentive to further education[15].

High minimum wages and the strong progressivity of the Danish tax and transfer system discourage private investment in human capital at the lower end of the income scale (*Pedersen,* 1998). At tertiary level, the disincentives of the wage system are offset by generous student grants. The grants do not, however, reflect differences in costs or social value of education programmes thus fostering enrolment in less difficult and shorter studies.

By increasing the transfer element (grants) and lowering the implicit own contribution element in the student support scheme, the incentive for students to prolong their studies has increased. Some limits to prolong studies have, however, been introduced lately, e.g., an upper limit to grants at the normalised duration of a programme plus one year, the requirement to pass mandatory exams, by limiting the income from work in the labour market for those on a grant. Particularly the latter arrangement has reduced the duration of studies by half a year between 1984 and 1994, keeping the composition of studies constant.

[15] The higher unemployment risk of unskilled workers results in lower lifetime income than the pay structure suggests. For an overview of the individual and social rates of return to education by educational level see the relevant chapters in this paper.

*Table 6: Gender differences in mathematics and science*

*Mean mathematics/science achievement by gender in eighth grade (1995)*

| | Mean mathematics | | | Mean science | | |
|---|---|---|---|---|---|---|
| | Boys | Girls | Difference in means° | Boys | Girls | Difference in means° |
| Australia** | 528 | 533 | *5g* | 551 | 541 | *9b* |
| Austria** | 544 | 536 | *8b* | 566 | 549 | *18b* |
| Denmark** | 512 | 495 | *17b* | 495 | 464 | *31b* |
| Germany** | 512 | 509 | *3b* | 542 | 524 | *18b* |
| Netherlands** | 545 | 537 | *8b* | 570 | 550 | *21b* |
| Norway | 505 | 501 | *4b* | 534 | 521 | *13b* |
| Switzerland* | 548 | 544 | *5b* | 529 | 515 | *15b* |
| Sweden | 520 | 518 | *2b* | 543 | 528 | *15b* |
| England* | 509 | 505 | *4b* | 563 | 543 | *20b* |
| USA* | 502 | 498 | *4b* | 539 | 530 | *9b* |
| Country mean | 519 | 513 | *7b* | 532 | 515 | *18b* |

Source: *OECD* (1996), p. 216, 217. – ° b means boys score higher, g means girls score higher. – * Countries met TIMSS sampling requirements only partially. – ** Countries did not meet TIMSS sampling requirements.

## Expenditure on education and funding structure

The OECD average total public expenditure on all institutions of education amounted to 5.1 percent of GDP in 1997 (*OECD,* country mean), compared to 4.8 percent 1990 (*OECD,* 2000A, p. 54). Denmark spent with 6.5 percent of GDP (6.2 percent 1990) somewhat more than the OECD average but also more than Austria (6 percent, 1990: 5.2 percent). If private expenditure devoted to educational institutions is included, the OECD average goes up to 5.8 percent of GDP in 1997 (country mean, *OECD,* 2000A) and 6.8 percent in the case of Denmark. The differential between Denmark and Austria is reduced to 0.3 percentage point (from 0.5 percentage point) indicating larger relative contributions of private resources in Austria.

Between 1990 and 1996, direct public expenditure including subsidies to private schools increased by 25 percent in Denmark (Austria +32 percent). Educational expenditure (on institutions) rose faster than economic growth thus increasing education costs as percentage of GDP (*OECD,* 2000A, Table B1.2).

If one includes direct public financial support of students (grants) and private households to public expenditure on education, the OECD public and private average expenditure on education rises to 6.1 percent of GDP (country mean), Denmark is then the second highest of the league with 8.2 percent of GDP (only surpassed by Sweden with 8.5 percent of GDP); Austria lags somewhat behind with 6.7 percent of GDP. The differential between Denmark and Austria rises to 1.5 percentage points, indicating that Austria offers little financial support to households or students to cover expenses linked with education (student grants).

*Table 7: Educational expenditure as a percentage of GDP for all levels of education by source of funds (1997 and 1990)*

| | 1997 | | | 1990 | |
|---|---|---|---|---|---|
| | Direct public expenditure for educational institutions | Total expenditure (public and private) for educational institutions | Total expenditure (public, private and internat. sources) for education institutions plus public subsidies to households | Direct public expenditure for educational institutions | Total expenditure (public and private) for educational institutions |
| Australia | 4.3 | 5.6 | 6.1 | 4.3 | 4.9 |
| Austria | 6.0 | 6.5 | 6.7 | 5.2 | – |
| Denmark | 6.5 | 6.8 | 8.2 | 6.2 | 6.4 |
| Finland | 6.3 | 6.3 | 6.9 | 6.4 | 6.4 |
| Germany | 4.5 | 5.7 | 5.9 | – | – |
| Netherlands | 4.3 | 4.7 | 5.1 | – | – |
| Sweden | 6.8 | 6.9 | 8.5 | – | – |
| Switzerland | 5.4 | 6.0 | 6.1 | 5.0 | – |
| United Kingdom | 4.6 | | | 4.3 | – |
| USA | 5.2 | 6.9 | 7.1 | – | – |
| Country mean | 5.1 | 5.8 | 6.1 | 4.8 | 5.2 |
| OECD total | 4.8 | 6.1 | 6.5 | 4.4 | 5.0 |

Source: *OECD* (2000A), p. 54.

Apart from demographic factors, international differences in expenditure of the education system may be due to many factors, the distribution of pupils upon the various sectors of the education system, enrolment rates in the various programmes, the duration of the different programmes, expenditure per student, the demographic structure (share of youth in total population) and various other factors.

In Denmark public expenditure on primary and lower secondary education is rather high by international standards. In 1997 the public and private expenses amounted to 2.8 percent of GDP, i.e., 41 percent of the total expenditure on education[16]. Pre-school expenditure amounts to 1 percent of GDP, substantially more than the OECD average of 0.4 percent, mainly as a result of the late start in compulsory education. It is necessary to add up nursery and compulsory school expenditure when making international comparisons, since there are differences in the entry age to compulsory education as well as the private/public financial contribution mix. In the case of Denmark 56 percent of all expenses on education accrue to the 3 to 15 year olds, compared to 46 percent for the OECD average and 49 percent for Austria. Primary and lower secondary education is the largest component of total education expenditure anywhere, but particularly in Denmark.

The number of pupils in this age group has declined since the mid 1980s by 17 percent and of teachers by 6 percent. Thus the pupil teacher ratio has decreased strongly over the past 15 years. As 80 percent of current costs in primary and lower secondary education are labour costs, the

[16] The OECD average was 39 percent.

same as the average of OECD countries, the cost of education per pupil has increased substantially. Moreover, the average age of teachers increased; thus the seniority pay schemes contributed further to the rise in labour costs.

Expenditure on upper secondary education amounted to 1.5 percent of GDP in 1997 (OECD average 1.2 percent, Austria 1.5 percent), i.e., 22 percent of total expenditure. The general education stream of youth accounts for 9 percent of the total costs, the vocational stream for 10 percent. Adult education adds another cost element, which is gaining weight over time. Public expenditure on general upper secondary education has risen by 10 percent over the last decade, the student numbers have risen by 30 percent and the number of teachers by 33 percent.

*Table 8: Educational expenditure from public and private sources for educational institutions as a percentage of GDP by level of education (1997)*

| | Pre-primary education | Primary and lower secondary education | Upper secondary education | Post-secondary non-tertiary education | Tertiary education | All levels of education |
|---|---|---|---|---|---|---|
| Australia | 0.1 | 2.8 | 1.0 | 0.1 | 1.7 | 5.6 |
| Austria | 0.5 | 2.7 | 1.5 | – | 1.5 | 6.5 |
| Denmark | 1.0 | 2.8 | 1.5 | – | 1.2 | 6.8 |
| Finland | 0.7 | 2.6 | 1.2 | – | 1.7 | 6.3 |
| Germany | 0.5 | 2.2 | 1.3 | 0.3 | 1.1 | 5.7 |
| Netherlands | 0.4 | 2.3 | 0.8 | – | 1.2 | 4.7 |
| Switzerland | 0.2 | 2.9 | 1.6 | 0.1 | 1.1 | 6.0 |
| United Kingdom | 0.4 | – | – | – | 1.0 | |
| USA* | 0.4 | – | – | – | 2.6 | 6.9 |
| Country mean | 0.4 | 2.5 | 1.3 | 0.1 | 1.3 | 5.8 |
| OECD total | 0.4 | 2.4 | 1.2 | 0.1 | 1.7 | 6.1 |

Source: *OECD* (2000A), p. 57. – *Post-secondary non-tertiary data included in tertiary education.

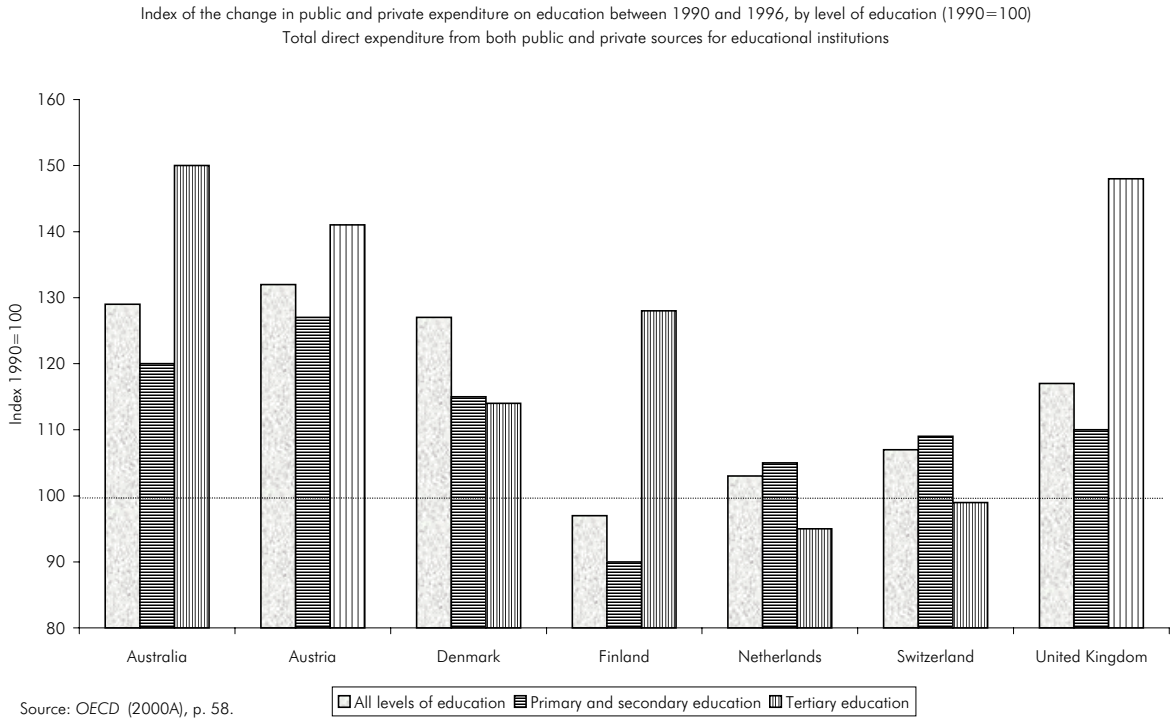
In contrast, the expenditure on vocational upper secondary education has risen by 6 percent even though the student population dropped by 6 percent in the last 10 years. The number of teachers remained more or less unchanged, the average length of the programmes increased, however, as well as the qualification of the teachers thus contributing to rising costs. Some of the rise in costs is attributable to more generous grants and greater coverage of students.

The general education stream of upper secondary education as well as tertiary education have seen considerable decreases in resource use per student. Noteworthy is that the doubling of the number of students in tertiary education was not linked with a rising number of teachers but actually a small decline.

Tertiary education expenditure (institutional) amounted to 1.2 percent of GDP in Denmark, i.e., less than the OECD average of 1.7 percent of GDP and less than Austria (1.5 percent). In the case of tertiary education the discrepancy of expenditure between Austria and Denmark is reversed, however, if student grants are included as a public cost factor. Denmark is much more generous than Austria in offering student grants; it spent 0.6 percent of GDP in 1997 on subsidies to households versus 0.2 percent of GDP in Austria (*OECD,* 2000A, Table B1.1c). Thus Denmark

spent all in all, a little more on tertiary education than Austria (1.8 percent compared to 1.7 percent of GDP in Austria).

*Graph 3: Change in public and private expenditure by level of education, in OECD countries (1990-1996)*




Source: *OECD* (2000A), p. 58.

Demographic structural change tends to introduce an upward bias into the cost development of education. While rising numbers of pupils in compulsory education necessitate a rise in the number of teachers in order to preserve the quality of education, a demographically induced fall in the number of students is not accompanied by a proportional decline in the number of teachers, at least immediately. Only a slowdown in the inflow of young teachers can be expected, and this cannot stem the trend towards an ageing teacher population, which introduces rising costs due to seniority pay. These are problems, which are particularly pronounced in Germany and Austria, less though in Nordic countries, however, due to less pronounced demographic structural change.

The increasing demands on educational resources due to the passage of the baby boom generation through the education system, given the asymmetry of teacher and other educational infrastructure adjustment possibilities, represents a challenge to the funding of education in particular in view of scarce public funds and the needs of continuous re-and up-skilling of the work force in a knowledge society.

*Table 9: Educational expenditure by resource category for public and private institutions by level of education (1997, 1993)*

1997

| | Primary, secondary and post-secondary non-tertiary education | | | | | Tertiary education | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | % of total expenditure | | % of current expenditure | | | % of total expenditure | | % of current expenditure | | |
| | Current | Capital | Compens./ teachers | Compens./ other staff | Other current expenditure | Current | Capital | Compens./ teachers | Compens./ other staff | Other current expenditure |
| Australia | 94 | 6 | 63 | 16 | 22 | 91 | 9 | 29 | 36 | 35 |
| Austria | 93 | 7 | 64 | 9 | 21 | 95 | 5 | 35 | 17 | 32 |
| Denmark | 94 | 6 | 53 | 26 | 20 | 85 | 15 | 52 | 26 | 22 |
| Finland | 91 | 9 | 60 | 11 | 29 | 92 | 8 | 39 | 25 | 36 |
| Germany** | 92 | 8 | - | - | 11 | 88 | 12 | - | - | 24 |
| Netherlands | 95 | 5 | - | - | 22 | 94 | 6 | - | - | 25 |
| Switzerland* | 89 | 11 | 72 | 14 | 14 | 89 | 11 | 54 | 23 | 23 |
| U.K. | 96 | 4 | 51 | 18 | 31 | 96 | 4 | 19 | 14 | 66 |
| USA*** | 90 | 10 | 57 | 22 | 21 | 90 | 10 | 45 | 28 | 27 |
| **Country mean** | **91** | **9** | **64** | **14** | **20** | **87** | **13** | **42** | **23** | **33** |

1993

| | Primary, secondary and post-secondary non-tertiary education | | | | | Tertiary education | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | % of total expenditure | | % of current expenditure | | | % of total expenditure | | % of current expenditure | | |
| | Current | Capital | Compens./ teachers | Compens./ other staff | Other current expenditure | Current | Capital | Compens./ teachers | Compens./ other staff | Other current expenditure |
| Australia | 92 | 8 | - | - | - | 92 | 8 | - | - | - |
| Austria* | 90 | 10 | 72 | 8 | 19 | 82 | 18 | 32 | 20 | 49 |
| Denmark | 94 | 6 | 54 | 27 | 19 | 85 | 15 | 54 | 26 | 20 |
| Finland** | 93 | 7 | 60 | 13 | 27 | 94 | 6 | 36 | 24 | 40 |
| Germany* | 92 | 9 | - | - | - | 88 | 12 | - | - | - |
| Netherlands | 95 | 5 | - | - | - | 94 | 6 | - | - | - |
| Switzerland* | 88 | 12 | - | - | - | 85 | 15 | 51 | 28 | 21 |
| U.K. | 95 | 5 | 58 | 15 | 27 | 94 | 6 | 27 | 18 | 55 |
| USA | 91 | 9 | 56 | 23 | 21 | 92 | 8 | 49 | 24 | 27 |
| **Country mean** | **93** | **8** | - | - | **19** | **88** | **13** | - | - | **31** |

* Public institutions only
** Public and government-dependent private institutions
*** Post-secondary non-tertiary education included at the tertiary level

Source: *OECD* (1996), p. 80; *OECD* (2000A), p. 103.

Denmark, like the majority of OECD countries, has fewer students per teaching staff at upper secondary education than in compulsory education[17]. There are, however, significant differences in annual working hours of teachers in some educational programmes between Denmark and the average of the OECD. While working hours in primary and lower secondary education do not differ much between Denmark and the OECD average (they are between 92 percent and 99 percent of the OECD mean), significant differences within upper secondary education programmes are apparent. While the OECD average annual working hours for teachers in the general upper secondary education stream exceed those of Denmark by 30 percent, vocational

[17] The international differences in the student/teacher ratios may derive from differing demographic pressures in different stages in the education system and the asymmetry in adjustment speeds, they may result, however, also from genuinely different educational policies.

orientation education teachers have more teaching hours in Denmark (+4 percent) than in other OECD countries.

The situation in Austria is quite different. The structure of average annual teaching hours by educational level and programme conforms to the OECD average; but the levels are 10 percent to 13 percent lower than the average of the OECD.

*Table 10: Student-to-teacher ratios and teaching hours per year by level of education (1994)*

| | Primary education | | Lower secondary education | | Upper secondary education | | |
|---|---|---|---|---|---|---|---|
| | ST | TH | ST | TH | ST | TH (general) | TH (vocational) |
| Austria | 11.8 | 709 | 8.2 | 651 | 7.8 | 616 | 629 |
| Belgium | 13.2 | 832 | – | 720 | 7.4 | 660 | 862 |
| Czech Republic | 19.6 | 687 | 13.4 | 657 | 12.4 | 627 | 627 |
| Denmark | 11.2 | 750 | 9.2 | 750 | 9.2 | 480 | 750 |
| France | 19.3 | 923 | – | 660 | 13.2* | 660 | 660 |
| Germany | 20.4 | 760 | 15.7 | 712 | 12.4 | 650 | 665 |
| Greece | 16.5 | 696 | 13.3 | 569 | 11.4 | 569 | 569 |
| Ireland | 24.4 | 915 | – | 735 | 16.4* | 735 | 735 |
| Italy | 9.9 | 748 | 8 | 612 | 9.2 | 612 | 612 |
| New Zealand | 20.5 | 788 | 16.9 | 869 | 13.1 | 950 | 950 |
| Portugal | 12.1 | 828 | – | 681 | 13.0* | 607 | 607 |
| Spain | 17.6 | 900 | 17.1 | 900 | 13.7 | 630 | 630 |
| Sweden | 12.4 | 624 | 10.8 | 576 | 14.7 | 528 | 612 |
| Switzerland | 15.3 | 1085 | 12.8 | 1056 | – | – | – |
| OECD mean | 17.5 | 818 | 15.8 | 760 | 12.9 | 688 | 722 |

Source: *OECD* (1997), p. 86. – ST = Student to teacher ratio. TH = Teaching hours per year. * All secondary education.

## *Special funding feature: The taximeter-model*

Initial education is basically provided by public funds. In 1997, 95 percent of all expenses on initial education were paid by the public sector, either as initial funds (original source of funds) or as a result of the net public-to-private transfers of funds. This is a lot more than the mean of OECD countries (85 percent) and also more than in Austria (92 percent).

While the funding of the public compulsory education institutions is under central management and control, the 'self-governing' colleges of education of upper secondary education receive public funds to cover their recurrent costs (teachers' wages, other wages, teaching material including capital expenditure) on the basis of the taximeter model[18]. The taximeter consists of a fixed and a variable component of finance. The variable element of current costs is based on the number of students who graduate from the programmes. The fixed cost element is concerning buildings, investment, interest etc. The system was first introduced for schools of higher education in 1994[19]

[18] For a detailed account of the financing of vocational education and training see *CEDEFOP* (1998).

[19] Open education, i.e., vocational part-time education for adults, has been funded on the basis of the taximeter-model since 1990. Open education is, however, in contrast to initial higher education partly funded by user fees.

and extended to vocational upper secondary education and open education after a reform of the funding system in 1997.

On the basis of the taximeter-model individual institutions of higher education receive a fixed grant per full-time equivalent student, whereby rates differ for teaching related expenditure (education taximeter), for common expenditure and for practical training (taximeter for institutional costs and the building taximeter). The vocational colleges, which provide educational programmes of 1 to 3 years duration, receive capital expenditure grants on the basis of a taximeter model since 1991.

The taximeter model was chosen as the funding system, in order to simplify the funding system of 1,350 institutions of upper secondary vocational education and of higher education and to render funding mechanisms more transparent to the Ministry of Education.

The taximeter model has been evaluated in 1997/98 (government report) and proven successful in the case of colleges of education and vocational colleges, i.e., the objectives of the reform were obtained[20]. One problem arose, however. Due to the uncertainty about the exact number of full-time equivalent students the Ministry of Education was confronted with unsatisfactory discrepancies between forecast and actual expenditures on vocational upper secondary education, in particular the component of open education. A solution to this problem of planning budgetary costs has been found in introducing a ceiling to grants for particular components of education, which are hard to forecast. The ceiling is regularly evaluated as to its continued relevance.

The Danish Centre for the Evaluation of Higher Education (EVC) stated that the taximeter model did not result in a decline of educational standards, e.g., as a result of funding induced higher pass rates. One reason being that external examiners introduce a measure of control for the preservation of standards. On the other hand, the taximeter might bias the selection process of students, i.e., favouring selection of those students who are most likely to pass.

## Overview of the labour market of youth and young adults

The total unemployment rate (*OECD,* 2000) fell from 10.1 percent in 1993 to 5.2 percent 1999, a consequence of the good economic performance and of active labour market policy measures, which in the main reduced labour supply (early retirement schemes, paid leave schemes). Youth unemployment rates remain higher than the average with 10 percent (after 13.8 percent 1993). This is a relatively low rate by international standards, however.

[20] Universities are less affected by grants, which are related to student numbers (passed exams), since about two thirds of their total grants are grants for research and capital expenses. Besides, the governance structure of universities differs from the one of colleges of education.

The EU average unemployment rate was 9.2 percent 1999, thus significantly lower than the rate for youth (15-24: 17.2 percent); the same holds for the OECD average (1999: 6.8 percent; 15-24: 11.8 percent)[21].

The attempts to increase the educational attainment and skill level at the lower end of the skills spectrum, in particular of drop outs, has to be seen in the context of relatively small wage differentials by skill and above average unemployment rates of the least educated. The low skilled workers are falling into a trap, a so-called productivity trap; they become and remain unemployed when the minimum wage is higher than the productivity of their work. At the same time, the high welfare payments offered to the unemployed or non-participants in relation to the disposable income in a potential job of the low skilled acts as an incentive to remain or become unemployed. *Pedersen – Smith* (2000) argue that job search is reduced and the incentive to quit a low-paid job is high as a result. The unskilled workers may thus fall into the so-called unemployment trap. In principle there are three ways to reduce the unemployment rate of the least educated:

- by reducing the replacement ratios in the benefit system,
- by reducing the wages at the lower end of the wage distribution,
- by increasing the educational attainment and skill level of the least educated.

The first two options increase income inequality. Denmark has chosen the third, to upgrade the skills of workers to ensure labour productivity differentials which conform more closely to the wage differentials[22]. Upgrading of skills is one objective of active labour market policies, another is to reduce marginalisation of certain groups of people in the society (inclusion strategy). It has been linked with an obligation on the part of the unemployed to either take up work or to undertake education and training measures from 1993 onwards (mutual obligation schemes[23]). Labour market policy is treated in more detail in the section on lifelong learning.

## The value of education: Cost-benefit analyses

For practical purposes the most relevant economic indicator of the benefits of education spending to society is the marginal rate of return on the incremental resources allocated to education. The higher earnings which result from increases in human capital (measured by increasing expenditure in education and training) are the return on this investment and the premium for better skills and

[21] For a differentiated account of youth unemployment in the OECD see *Marchand* (1999).

[22] More about this rationale in general in the *OECD* (1999B) Jobs Strategy, pertaining to Denmark see *Hoj – Ransby* (1996).

[23] *Greve* (1999), is analysing the transition from welfare to workforce in Denmark, which set in in 1993 with a new social democratic government. 'Activation' of the unemployed and of persons on welfare became the catch word, linking benefits to work or education and training.

thus presumably higher productivity. Thus one may differentiate between economic rates of return to investment in human capital for the individual, the labour market in terms of productivity impact and for the society, i.e., social returns of return to education. For an introduction into the literature see chapter on productivity and individual rates of return by Biffl and contribution by Winter-Ebmer.

*Individual rates of return*

Several studies on individual rates of return to education have been undertaken in Denmark (*Smith* and *Westergard-Nielsen,* 1988, *Hoj – Ransby,* 1996, *Belzil – Hansen,* 1997, *Christensen – Westergard-Nielsen,* 1999) and for the Nordic countries including Denmark (*Asplund et al.,* 1996). The unit of observation is the individual and the theoretical approach is on augmented specifications of the standard human capital earnings function as proposed by *Mincer* (1974). The focus of research may differ, e.g., be centred around the reason for gender specific wage differentials, around wage differentials in general (due to education, experience and occupation), between private-public sector wage differentials or firmspecific wage differentials.

An overview of relative earnings from employment by educational level in OECD countries (*OECD,* 2000A, p.297), shows that there is a considerable difference in individual rates of return to education between countries.

The shortfall in earnings due to less than upper secondary education, i.e., of a skill level below ISCED ¾, amounted to 15 percent in the case of Denmark in 1997 for the population 25 to 64 years of age. This is more than in Finland (3 percent), and Sweden (10 percent), it is fairly similar to Norway, France and Netherlands, somewhat lower than in Germany (19 percent) and Australia (21 percent), but substantially lower than in countries like Switzerland (26 percent), the United States (30 percent) or the United Kingdom (36 percent).

The premium for tertiary education skills of ISCED 5 compared to upper secondary education skills in Denmark is 15 percent, the same premium as the latter group earns relative to those with less than upper secondary education. Only advanced degrees (ISCED 5a and 6) allow one to get significantly more income before tax than with upper secondary education (+40 percent). This return to higher education is fairly similar to Australia, Netherlands and Norway, but higher than in Sweden. The returns to higher education are much more pronounced in Finland (86 percent), the U.K. and France (both around 68 percent), Germany (63 percent), and Switzerland (62 percent), however.

The wide international differences in the returns to higher education (mean annual average earnings before tax) reflect a number of factors:

- skill demands in the work force,
- minimum wage legislation,
- the supply of workers at the various levels of educational attainment,

- the coverage of collective bargaining agreements and the strength of unions,
- the range of work experience of workers with high and low educational attainment,
- the relative incidence of part-time work at different educational attainment levels.

The earnings differentials by education do not tell us the exact return to education. Schooling decisions are intrinsically dynamic and stochastic, i.e., they change over time in response to various demand and supply factors as well as general attitudes, which are difficult to take into account in calculations. Individuals enrol in schools (initial education) and bear some costs (direct costs such as transportation, books, tuition or psychic learning cost) in return for higher but uncertain wages. Higher levels of education may also translate into a better quality of jobs (non-wage benefit of education). The net cost of higher education is thus not easy to define, either due to differing costs, differing parental support or other intergenerational transfers.

The net benefit of higher education is also hard to calculate due to an ability bias. Individuals who have greater ability tend to proceed with education to a larger extent than less able ones (lower learning costs), but they may also get higher wages than less able ones in the same educational category (*Griliches,* 1977).

Another aspect, the expected duration of employment over the working life cycle, introduces a measure of uncertainty through the choice of an adequate discount factor (subjective rate of interest) of expected lifetime earnings (wage return to education and experience). Clearly, standard regression techniques can not incorporate all information and allow inferences about all parameters.

The returns to education are stronger in earlier years of the life cycle and can probably be estimated more precisely; as the labour market takes over to increase human capital (experience), returns to education become less certain (see Biffl on Austria).

Further, factors which affect the rate of return to education are

1. the tax system,
2. longer actual duration of education than the norm,
3. contributions to pension schemes.

The first two factors diminish the rate of return to education, the third factor enlarges the return.

The tables which follow should be understood with these qualifications in mind.

*Table 11: Relative earnings of 25 to 64 and 30 to 44 year olds from employment by level of educational attainment and gender 1997*

*(ISCED 3/4 = 100)*

| | | Below upper secondary education ISCED 0/1/2 | | Tertiary-type B education ISCED 5B | | Tertiary-type A and advanced research programmes ISCED 5A/6 | |
|---|---|---|---|---|---|---|---|
| | | Ages 25-64 | Ages 30-44 | Ages 25-64 | Ages 30-44 | Ages 25-64 | Ages 30-44 |
| Australia | Men | 87 | 83 | 120 | 116 | 144 | 138 |
| | Women | 85 | 84 | 113 | 112 | 154 | 154 |
| | M + W | 79 | 75 | 103 | 101 | 136 | 131 |
| Denmark | Men | 86 | 86 | 124 | 121 | 139 | 139 |
| | Women | 88 | 88 | 119 | 115 | 136 | 144 |
| | M + W | 85 | 85 | 115 | 110 | 140 | 142 |
| Finland* | Men | 95 | 92 | 129 | 125 | 189 | 174 |
| | Women | 101 | 99 | 123 | 122 | 179 | 172 |
| | M + W | 97 | 96 | 121 | 117 | 186 | 173 |
| France** | Men | 88 | 88 | 130 | 137 | 176 | 175 |
| | Women | 80 | 81 | 132 | 138 | 161 | 168 |
| | M + W | 84 | 85 | 126 | 132 | 169 | 171 |
| Germany | Men | 88 | 87 | 106 | 108 | 156 | 144 |
| | Women | 87 | 84 | 111 | 110 | 156 | 159 |
| | M + W | 81 | 82 | 108 | 106 | 163 | 153 |
| Italy*** | Men | 73 | 77 | x(5A/6) | x(5A/6) | 173 | 161 |
| | Women | 76 | 77 | x(5A/6) | x(5A/6) | 129 | 133 |
| | M + W | 76 | 80 | x(5A/6) | x(5A/6) | 156 | 148 |
| Netherlands* | Men | 87 | 86 | x(5A/6) | x(5A/6) | 136 | 129 |
| | Women | 75 | 74 | x(5A/6) | x(5A/6) | 141 | 145 |
| | M + W | 84 | 84 | x(5A/6) | x(5A/6) | 137 | 132 |
| Norway | Men | 85 | 85 | x(5A/6) | x(5A/6) | 138 | 140 |
| | Women | 84 | 90 | x(5A/6) | x(5A/6) | 140 | 143 |
| | M + W | 85 | 87 | x(5A/6) | x(5A/6) | 138 | 138 |
| Sweden | Men | 88 | 88 | x(5A/6) | x(5A/6) | 135 | 135 |
| | Women | 89 | 87 | x(5A/6) | x(5A/6) | 125 | 121 |
| | M + W | 90 | 89 | x(5A/6) | x(5A/6) | 129 | 128 |
| Switzerland** | Men | 81 | 82 | 119 | 122 | 145 | 139 |
| | Women | 74 | 82 | 123 | 122 | 157 | 164 |
| | M + W | 74 | 79 | 137 | 140 | 162 | 156 |
| United Kingdom** | Men | 73 | 70 | 125 | 124 | 157 | 157 |
| | Women | 64 | 61 | 135 | 133 | 188 | 192 |
| | M + W | 64 | 63 | 125 | 125 | 168 | 172 |
| USA ** | Men | 69 | 67 | 113 | 114 | 183 | 182 |
| | Women | 62 | 60 | 127 | 130 | 180 | 191 |
| | M + W | 70 | 68 | 116 | 116 | 184 | 184 |

Source: *OECD* (2000A), p. 297. – * 1996. – ** 1998. – *** 1995.

Calculations by the Ministry of Finance on the returns to education to individuals in the context of lifetime earnings (*Tove Birgitte Pedersen,* 1998[24]) show that it pays to continue education beyond compulsory education (Folkeskole) not only because of higher wages but also because of a higher probability of continued employment over the working life cycle.

*Table 12: Discounted lifetime income for selected types of education in Denmark (1995)*

| | Discounted lifetime income (in 1,000 Kr) | | Index (unskilled workers = 100) | |
|---|---|---|---|---|
| | Men | Women | Men | Women |
| *Unskilled workers* | | | | |
| Compulsory education | 3,262 | 2,558 | 100.0 | 100 |
| *Vocational education* | | | | |
| Bank clerk | 4,511 | 3,561 | 138.3 | 139.2 |
| Shop assistant | 3,973 | 2,845 | 121.8 | 111.2 |
| Clerical worker | 4,017 | 3,251 | 123.1 | 127.1 |
| Bricklayer | 3,588 | | 110.0 | |
| Carpenter | 3,772 | | 115.6 | |
| Mechanics | 3,848 | | 118.0 | |
| Black smith | 3,908 | | 119.8 | |
| Tourist-service | | 2,732 | | 106.8 |
| Electrician | 3,914 | | 120.0 | |
| Other | 3,643 | 2,947 | 111.7 | 115.2 |
| *Short-cycle higher education* | | | | |
| Electrician | 4,203 | | 128.8 | |
| Other technical educations | 3,798 | | 116.4 | |
| Other | 4,109 | 3,739 | 126.0 | 146.2 |
| *Medium-cycle higher education* | | | | |
| Teacher | 3,707 | 3,369 | 113.6 | 131.7 |
| Nurse | | 3,145 | | 122.9 |
| Engineer | 4,772 | | 146.3 | |
| Other | 4,746 | 3,221 | 145.5 | 125.9 |
| *Long-cycle higher education* | | | | |
| Civil engineer | 5,167 | | 158.4 | |
| High school teacher | 3,782 | 3,184 | 115.9 | 124.5 |
| Lawyer | 5,336 | 4,170 | 163.6 | 163.0 |
| Medical doctor | 5,506 | | 168.8 | |
| Social and humane science | 5,524 | | 169.3 | |
| Natural science | 4,500 | 4,105 | 138.0 | 160.5 |
| Other | 4,252 | 3,538 | 130.3 | 138.3 |

Source: *Pedersen* (1998), tafel 2/4.

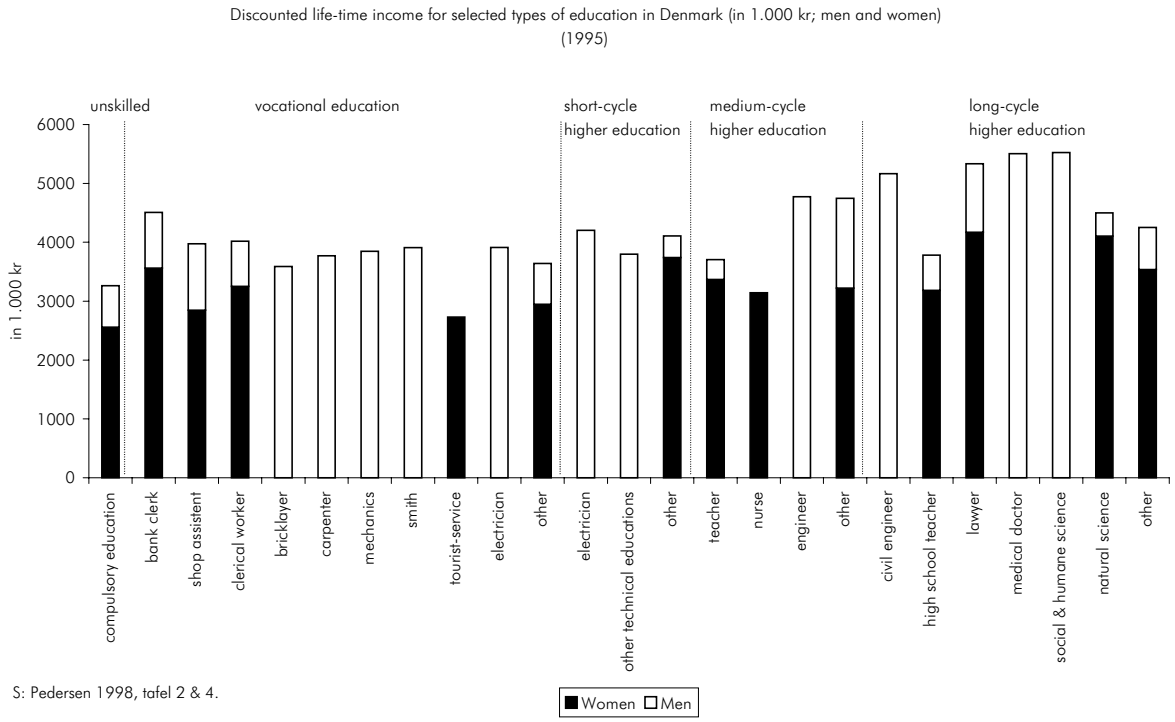
The lower lifetime earnings of women relative to men by educational attainment are to a large extent due to fewer employment interruptions of men[25]. The higher lifetime earnings of women with

[24] The analysis is based on a sample of 3 percent of the resident population (170,000 persons), which is matched with registry data on the basis of the social security number; only labour income net of tax has been taken as the basis for returns to investment in education.

[25] An analysis of the impact of career interruptions of women due to childcare (*Gupta – Smith,* 2000) show that the negative effect of children on mother's wages disappears after some time, but there are large differences between educational groups and the public and private sector. Children have only transitory effects on the earnings potential of their mothers.

higher levels of education relative to unskilled women is also to a large extent the result of higher unemployment and other periods of employment interruptions of unskilled women. Unskilled workers take recourse to disability pensions and early retirement to a larger extent than people with higher skills. This is an important factor behind the lower lifetime earnings of unskilled workers.

*Graph 4: Discounted lifetime earnings of adults (18-66) by educational attainment (1995)*

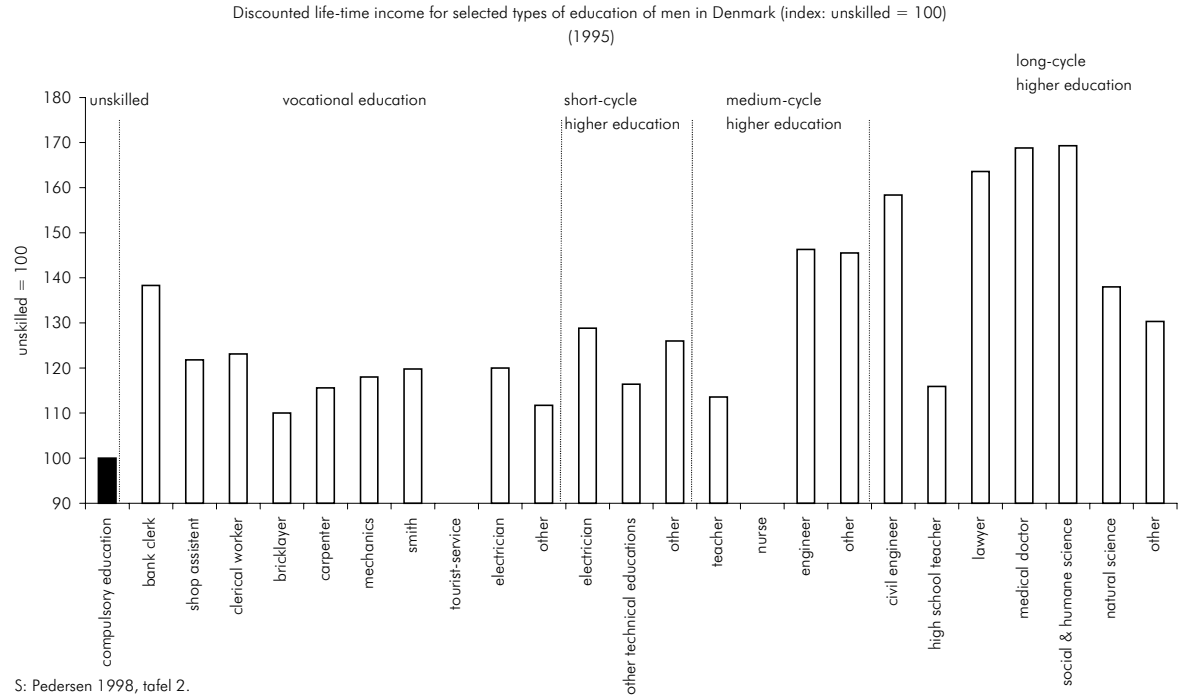



S: Pedersen 1998, tafel 2 & 4.

The graph provides a pervasive picture of the higher lifetime earnings of men in practically all educational groups. In addition Denmark has a considerable gender segmentation of employment by education and thus also by occupation. The sample does not, therefore, provide statistically significant results for lifetime earnings of women with medium skill vocational (apprenticeship) education. On the other hand, hardly any men go into tourist services.

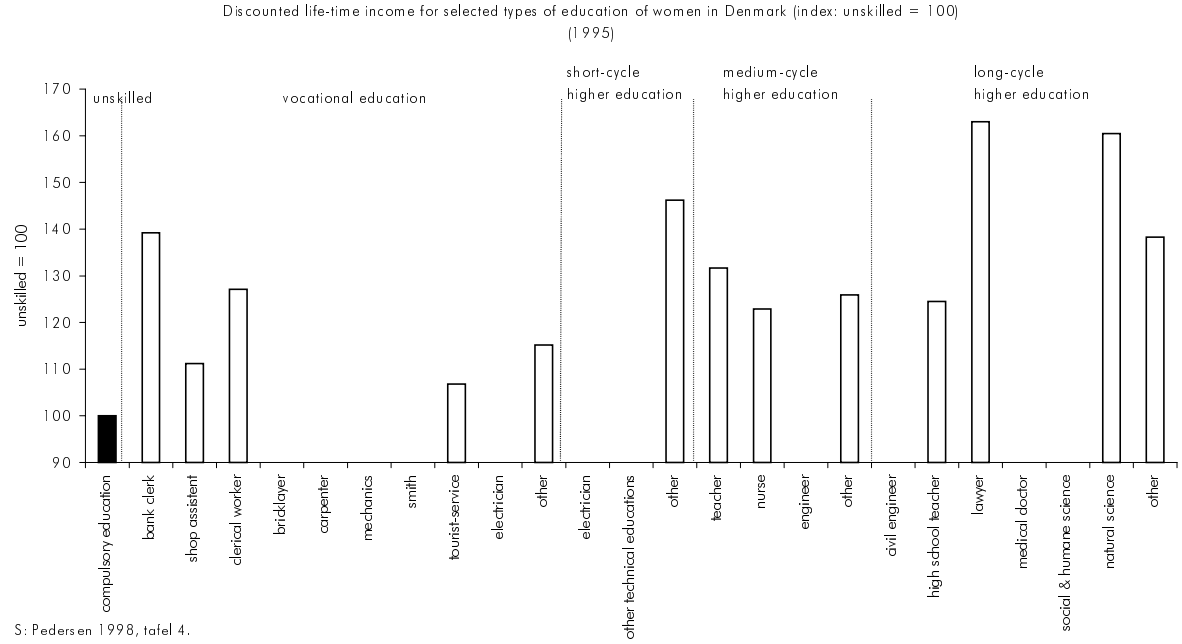
The additional income in a working life context versus compulsory education is highest with long university education in medicine, law/economics/business studies, and civil engineering (60 percent to 80 percent more for men), followed by people with vocational technical and commercial education. University education in the humanities does not offer higher returns to education and work than medium vocational education and training.

*Graph 5: Relative rate of return of higher education (discounted lifetime income) of men (1995)*




S: Pedersen 1998, tafel 2.

*Graph 6: Relative rate of return of higher education (discounted lifetime income) of women (1995)*




S: Pedersen 1998, tafel 4.

*Are wage differentials by education high enough?*

Not counting the non-pecuniary benefits of social prestige and work satisfaction from the possession of greater skill, different analyses suggest that the individual rates of return to education are high enough to provide an incentive to go beyond compulsory education. The effect of an additional year in post-compulsory education on hourly wages was on average about 4½ percent in Denmark in the early 1990s, compared with 5 percent in Sweden and Norway and 7 percent in Finland (*Asplund et al.,* 1994, cross-country comparison 1991). The somewhat lower rate of return of an additional year of education in Denmark was due to a lower rate of return in the private sector and for employed women in the public sector.

*Table 13: The effect on hourly wages of an additional year in post-compulsory schooling*

| | Denmark | Sweden | Norway | Finland |
|---|---|---|---|---|
| | | In percent | | |
| Total | 4.5 | 5 | 5 | 7 |
| Men | 5.25 | 5 | 5 | 7.75 |
| Private sector | 6 | 6.25 | 6.5 | 7.75 |
| Public sector | 5.25 | 5 | 4.5 | 8.25 |
| Women | 3.5 | 4.5 | 5 | 6.5 |
| Private sector | 4 | 5.5 | 5.5 | 5 |
| Public sector | 3.5 | 4 | 5 | 7.5 |

Source: *Asplund et al.* (1994), *OECD* (1997), p. 96.

A more recent study by *Christensen – Westergard-Nielsen* (1999) takes a time series approach. Data from the longitudinal labour market register (LLMR) has been analysed for the period 1981 and 1995, using the standard *Mincer* (1974) human capital earnings functions (HCEF), i.e., the same theoretical and empirical approach as Winter-Ebmer for Austria for the period 1981 to 1997. The model explains about 20 to 30 percent of the male wage variation and 10 to 20 percent of the female variation, which means that the model is more applicable for men.

For the period 1981 to 1995 an additional year of schooling raised wages on average

1. by approximately 5 percent in the case of men,
2. by approximately 3 percent in the case of women,
3. the gap between male and female returns of 2 percentage points remained stable over time,
4. both men and women had a positive trend in returns to education.

According to the calculations of Winter-Ebmer, rates of return from an additional year of education for men in Austria were similar to those for men in Denmark in the year 1995 (6.1 percent in Denmark versus 6.9 percent for Austria), but were somewhat higher in the case of Austrian women (3.3 percent in Denmark versus 6.7 percent in Austria). Returns to education have been declining in Austria, however, since the mid 1980s. Thus the marginal returns to education have converged

for men between Netherlands, Germany and Denmark in the mid 1990s, but international differences for women remain quite pronounced.

The experience variable in the earnings function captures the effect of on the job training upon wages. The estimated wage effect of experience is bellshaped in the case of men, i.e., after an initial rise in wages due to experience a slow down in the wage increase sets in. In the case of women the wage profile is close to linear, however, suggesting hardly any impact of experience on wages.

*Table 14: Earnings function by gender 1981-1995*

Earnings function for men and women: $lnW_{it} = \beta_0 + \beta_{1t} S_{it} + \beta_{2t} EXP_{it} + \beta_{3t} EXP^2_{it} + u_{it}$

| | 1981 | 1983 | 1985 | 1987 | 1989 | 1991 | 1993 | 1995 |
|---|---|---|---|---|---|---|---|---|
| | | | | Men | | | | |
| S | 0.051 | 0.045 | 0.049 | 0.050 | 0.053 | 0.055 | 0.061 | 0.061 |
| EXP | 0.028 | 0.023 | 0.028 | 0.034 | 0.030 | 0.026 | 0.025 | 0.025 |
| EXP2 | – 0.0005 | – 0.0004 | – 0.0005 | – 0.0006 | – 0.0005 | – 0.0004 | – 0.0004 | – 0.0004 |
| Adj. R2 | 0.246 | 0.186 | 0.231 | 0.269 | 0.260 | 0.251 | 0.294 | 0.294 |
| N | 3808 | 4017 | 4096 | 4338 | 4290 | 4259 | 4135 | 4137 |
| | | | | Women | | | | |
| S | 0.031 | 0.023 | 0.031 | 0.030 | 0.032 | 0.033 | 0.042 | 0.044 |
| EXP | 0.009 | 0.008 | 0.012 | 0.013 | 0.010 | 0.010 | 0.009 | 0.009 |
| EXP2 | – 0.00012 | – 0.00014 | – 0.0002 | – 0.0002 | – 0.00011 | – 0.00011 | – 0.00002 | – 0.00003 |
| Adj. R2 | 0.071 | 0.035 | 0.084 | 0.087 | 0.103 | 0.099 | 0.180 | 0.191 |
| N | 3,228 | 3,483 | 3,635 | 3,955 | 3,899 | 3,960 | 3,829 | 3,787 |

Source: *Christensen – Westergard-Nielsen* (1999), p. 5.
S = years of schooling beyond basic school
EXP = experience (potential as well as actual)
u = error term
N = number of observations.

The model used implies that each additional year of education has the same effect on earnings (linear function). Many argue, however, that credentials matter more, i.e., diplomas and skill certificates (*Card,* 1999), and not just years of education. Calculations for Denmark corroborate that notion that each additional year by type of school does not have the same proportional effect on wages. While the increment of income for people with apprenticeship training is very small compared to unskilled labourers, going from bachelor to masters represents a relatively large increase, particularly for women. But by and large the linearity assumption is still a pretty good approximation.

Further differentiation of the analysis shows that public sector employees on average earn 5 percent (women) and 10 percent (men) less than private sector employees, and that living in the province is associated with an average wage discount of 7-8 percent. Particularly women have lower returns from schooling in the province than in Copenhagen.

*Contribution of the education system to labour productivity*

The benefit to society of higher education, i.e., beyond compulsory education, is a higher level of productivity. It is not a simple matter to make comparisons of labour productivity over time and across countries (*Biffl,* 2001). Differences between GDP per capita, an indicator of the living standards of a country, and per working hour, an indicator of the competitiveness of the economy, arise, apart from the socio-economic development level of the economy, the technology and product-mix, the differences in the skill level of the work force, from differences in:

- annual working hours per worker,
- the proportion of employed persons in the labour force,
- the activity rate and
- the proportion of the population of working age in total population.

If we look at the differences of GDP per capita, Denmark had, with an output (valued at current market prices using PPPs) of 26,297 USD in 1998, a higher level of productivity than Austria with 23,073 USD (+12 percent). Denmark ranks amongst the countries with the highest GDP/capita in OECD countries, the leaders being, apart from the special case of Luxembourg, the United States (30,394 USD, +13 percent versus Denmark) and Germany (27,569 USD, +5 percent versus Denmark).

GDP per employed person, however, is fairly similar in Denmark and Austria, somewhat lower than in Germany (–11.5 percent), but quite a bit lower than in the United States (–22 percent). The differences in productivity arise, apart from technological and economic development levels and human and physical capital endowment, from a different age structure of the population, from different activity and employment rates. Differences in hourly labour productivity do not seem to be great. Even though the actual working hours per worker are known only with a high degree of uncertainty, evidence suggests that Austria lags behind the United States by some 6 percent to 10 percent, is fairly even with Denmark and Japan and surpasses the EU average by some 15 percent.

*Table 15: Employment, productivity and per capita output (GDP), 1998*

*Output valued at current market prices using PPPs, USD*

| | Output per employed person | Output per capita |
|---|---|---|
| Luxembourg | 64,742 | 34,701 |
| United States | 62,214 | 30,394 |
| Germany | 55,002 | 27,569 |
| Norway | 49,117 | 26,611 |
| Switzerland | 52,426 | 26,297 |
| Denmark | 48,682 | 26,297 |
| Canada | 47,112 | 24,106 |
| Japan | 65,053 | 24,103 |
| Belgium | 52,562 | 24,003 |
| Austria | 48,781 | 23,073 |
| Netherlands | 52,563 | 22,887 |
| Australia | 49,848 | 22,697 |
| Ireland | 55,585 | 22,429 |
| France | 57,440 | 22,089 |
| Italy | 62,187 | 21,999 |
| Finland | 50,474 | 21,677 |
| United Kingdom | 47,186 | 21,218 |
| Sweden | 47,029 | 21,162 |
| New Zealand | 40,193 | 17,801 |
| Spain | 50,129 | 16,743 |
| Portugal | 31,475 | 15,242 |
| Greece | 38,728 | 14,411 |

Source: *OECD* (2000B), p. 17.

## *Social rates of return*

The individual rates of return may differ considerably from the social rates of return.

*Hoj* and *Ransby* (1996) calculate social rates of return of post-compulsory education for Denmark in three steps of cost-benefit analyses.

1. Net lifetime income for persons with more than compulsory education are calculated, i.e., direct and indirect costs (opportunity costs) of higher education are deduced, and compared with lifetime income of unskilled workers[26].
2. The costs to society of education beyond compulsory education are calculated[27].

[26] Potential lifetime income from employment by educational groups is estimated (actual lifetime income may be less due to periods of unemployment) and compared with the potential lifetime earnings of unskilled workers (persons with no more than compulsory education). The differences in unemployment, participation, disability and early retirement rates by educational group are not taken into account in the average earnings differences over the working life cycle (16 to 60 year olds). Future income is discounted by the real interest rate adjusted for the growth rate in real incomes, i.e., no difference in real income growth by educational group is assumed.

[27] The taximeter-model facilitates the calculation of costs by type of education. The rates per student differ by type of education. They are published in the state budget. The cost of repetition and drop-outs are added to the costs of upper secondary education and beyond.

3. The internal rate of return to higher education is calculated. It shows the benefit of educating an additional person with average characteristics in a particular type of post-compulsory education, assuming average costs.

Table 16 shows that the longer the period of education the higher the average income, an exception being the education of nursery teachers. The variation of income between occupations, which require long university education, is more pronounced than in the case of medium skills (vocational and short cycle higher education).

The cost of post-compulsory education increases with the duration of education. The cost components differ by type of education; student grants are a particularly important cost component in the humanities (high school teachers) due to frequent interruptions of education, high drop-out rates etc..

*Table 16: Increase in lifetime income, cost per student, 1995 prices, economic rates of return to society*

| | Years in education after compulsory schooling | Increase in lifetime income (in million DKR) | Direct and indirect costs per student (in 1,000 DKR) | Economic rate of return |
|---|---|---|---|---|
| Unskilled | 0 | 0.0 | 0.0 | 0 |
| *Vocational education* | | | | |
| Shop assistant | 3 | 0.9 | 52.3 | 8.9 |
| Clerical worker | 3 | 1.3 | 52.3 | 11.4 |
| Black smith | 4 | 1.3 | 146.4 | 8.6 |
| Mechanic | 4 | 1.0 | 158.5 | 6.5 |
| Engineer | 4 | 2.0 | 129.2 | 14.5 |
| Bricklayer | 4 | 0.9 | 125.2 | 6.5 |
| Electrician | 4 | 1.0 | 121.5 | 7.5 |
| Construction worker | 4 | 0.7 | 90.4 | 5.5 |
| *Short-cycle higher education* | | | | |
| Nursery teacher | 4.5 | – 0.4 | 276.4 | – 2.5 |
| Technician | 4.5 | 0.9 | 295.1 | 2.2 |
| *Bachelor's degree* | | | | |
| Teacher | 7 | 2.0 | 427.3 | 4.6 |
| Business economist | 6 | 7.8 | 378.7 | 14.0 |
| Engineer | 6 | 5.2 | 495.5 | 9.3 |
| *Master's degree* | | | | |
| High school teacher | 9 | 3.3 | 1026.9 | 3.9 |
| Economist | 8 | 11.6 | 417.2 | 15.3 |
| Lawyer | 8 | 7.6 | 417.2 | 11.4 |
| Engineer | 8 | 7.7 | 678.1 | 9.5 |
| Medical doctor | 9 | 9.7 | 900.7 | 10.5 |

Source: *Hoj – Ransby* (1996), p. 14.

One way of judging the benefits of investment in higher education to society is by comparing the rate of return by type of education with the rate of return from an alternative investment of capital resources. Hoj and Ransby calculate the relevant rate for comparison at 5 percent (real interest rate minus the growth rate of real wages). They state: "If the calculated (social) internal rate of

return is larger than 5 percent for a given programme of education, it is beneficial to society to invest in that type of education" (p. 15).

By those criteria all courses of longer education were beneficial to Danish society with the exception of short cycle higher education and masters degree studies in humanities (high school teachers). The economic return of vocational training is then not much different from higher degree university education, despite large differences in lifetime earnings. This is due to the fact that vocational training is relatively cheap, partly because these courses are substantially shorter and because students occupy institutions only part-time, the other part of education taking place in enterprises.

## The concept of lifelong learning

There is growing recognition across OECD countries of the importance of investment in human capital through lifelong learning. Adaptation of the knowledge and skills of society can only partially be achieved by the adaptation of curricula of initial education. Continuing education and training is necessary to adapt the skills of adults to the changing needs of an economy in progress and to repair or complement previously received education and training (second chance).

The concept of lifelong learning is not new. An *OECD* (1973) publication proposed lifelong learning (recurrent education) "to provide better opportunity for individual development, greater education and social equality, and better interplay between the education and other social sectors, including a better contribution to the potential for necessary economic growth" (*Recurrent Education Strategy for Lifelong Learning*, p. 48). But the context, in which Denmark and other OECD countries are discussing lifelong learning now is new – it is an element of EU policy, which strives to adapt the socio-economic structures of the member countries to the needs of a global economy and of an information society.

Unfortunately Denmark and Austria have not participated in the International Adult Literacy Survey (IALS), which provides relatively recent internationally comparable information on the incidence, duration and nature of continuing adult education (*OECD,* 1998, p. 204-220). The latest internationally comparable data available for Denmark date back to 1991 (*OECD,* 1995). Then 15 percent of the Danish employed population between 25 and 64 engaged in continuing education and training (CET)[28] during the 4-week period preceding the national survey. This was slightly more than the United Kingdom at approximately that point in time (1992). The proportion of the employed engaged in CET increased with the educational attainment level of the individual, a feature typical for all countries. It amounted to 25 percent of the work force (aged between 25

[28] CET refers to all kinds of job related education and training, organised, financed or sponsored by authorities, provided by employers or self-financed.

and 64) with tertiary education, 14 percent of the work force with upper secondary education, and 6 percent of the work force with primary and lower secondary education (*OECD,* 1995, p. 158). Further education and training is offered to or taken up by younger and middle aged workers/employees to a larger extent than by older ones (17 percent of the 25-34 and 35-44 year olds compared to 11 percent of the 45-64 year olds.

On Denmark's own account (*OECD,* 1997, p. 103-122) adult education and training has been given budget priorities since the early 1980s. Adult education is administered by labour market centres (AMU), which update the skills of the work force, by adult education centres (VUC), which allow adults to complete their education, and by folk high schools, which foster cultural and social activities. If one takes all these educational efforts into account (public plus private resources), Denmark is in the top rank of countries giving CET to their work force (20.6 billion DKR in 1995 at current prices, i.e., 2.1 percent of GDP[29]). Public expenditure is supplemented by education and training expenditure of enterprises and employees. Of the total expenditure on education and training in 1995 only 1 percent was out of participant funds, 29 percent were paid by enterprises, the rest by the public sector, half and half from general taxation and earmarked contributions. Paid educational leave (for up to 1 year) is the most frequent type of support granted to adults for education and training. The objective is to increase the vocational competence of the work force; for higher education (medium and long term tertiary education) the user is required to pay a fee.

The motives for public funding of adult education is the same as for initial education, in particular upskilling of the work force to increase productivity of labour and to counter marginalisation of certain groups of workers. Adult education and training was stepped up in the late 1980s and 1990s to increase regional and occupational mobility. In the 1990s, the awareness of a rising mismatch of labour demand and supply by skills as a result of the ageing of the work force has given new impetus to the further development of adult education and of supporting innovations in the concept of lifelong learning. The reform of adult education is an integral part of the labour market reform of 1996. The major objective of the reform is the reduction of the average unemployment rate, the inclusion of persons with lower educational attainment in the labour market, the raising of the retirement age and the reduction of the differential of unemployment rates by educational level.

## Conclusion

As in many other countries, the reforms in post compulsory education in Denmark were driven by the need to improve the country's economic performance in a global economy and a new technological age. In Denmark's case, the depressed state of the economy in the 1980s had made

[29] This amount of money is very high by international standards; it may include subsidies to sport clubs and other associations which foster cultural life and social cohesion. For more details see *OECD* (1997), p. 107.

such reforms compelling. They spanned from reforms of product and labour market regulation, to reforms in the tax system, to decentralisation in the operation of public services and privatisation, the development of new funding systems – to increase transparency and thus facilitate accountability –, to the introduction of evaluation systems in order to ensure equal opportunities and to safeguard standards and to the reform of the education system in order to pave the way for the institutionalisation of continued learning in a learning society.

Cost/benefit analyses of human capital investment at various levels made it clear that educational reforms would not only improve the competitive position of the economy but would also raise living standards. Further, cost/benefit calculation also indicate that investment in human capital concentrated on youth education and training provide the best prospects for maximising individual and social returns. International evidence also suggests that the opportunity for lifelong learning is enhanced for those who have a solid grounding in basic educational skills – literacy and numeracy as well as problem solving and communication skills – provided in upper secondary and tertiary education.

The sensitivity of Danish education policy to these considerations is reflected in education expenditure being maintained despite the tightening up of budgetary policy for reasons of fiscal discipline in order to check inflationary tendencies. In 1997, the proportion in GDP of Direct Public Expenditure on educational institutions for Denmark is the second highest among OECD countries, being just below that of Sweden. The same applies to total expenditure including private expenditure and subsidies. These figures mark a significant increase since 1990. International comparisons must be viewed with some reserve because demographic and cost-effective considerations may account for some of the differences. Moreover, educational systems are historically based and may not be readily transferred internationally. But it is safe to say that the reforms in the education system, a system which used to be quite similar to the one in Germany or Austria, bring the Danish system closer to Anglo-Saxon countries.

It is necessary to be guarded in drawing any firm conclusions about the positive effects of recent educational reform from the improved economic position of Denmark, lower unemployment and its high productivity. It takes time for the full impact of such reforms as have been undertaken to be manifest in improvements in the economy. More importantly, it is difficult to isolate the effects of educational reform from other economic initiatives and the turnaround in the world economy. Nevertheless, the cost/benefit figures provide some confidence in the positive economic effects of education and training. This is particularly important in the case of Denmark because the accepted social policy of a high minimum wage and generous welfare benefits, make an upgrading of educational attainment and skills, particularly at the lower end of the labour market, essential if economic growth and international competitiveness is to be sustained.

The proportion of pupils who continue with some form of upper secondary education, after completing compulsory education, has risen from 85 percent in the early 1980s to 95 percent today. There has been a shift away from medium skill vocational schools (Lehre und mittlere Fachschulen) to higher general and vocational education. While 48 percent of the compulsory school leavers attended a medium vocational school/apprenticeship in 1982, the share dropped to 41 percent in 1995. The shift away from technical and commercial medium vocational education has been even more pronounced since new apprenticeships and vocational education programmes have been developed in social and health training since the early 1980s. The rate of retention in upper secondary education has increased somewhat – from 68 percent to 79 percent. Drop-outs do get more than one chance, however, as new types of schools have been developed to act as a bridge to higher education.

The proportion of 19 year olds continuing with higher upper secondary education (beyond ISCED 3) amounted to 57 percent in Denmark compared to 41 percent in Austria and 52 percent on average in the OECD. The literacy and numeracy performance of Danish pupils is, however, relatively low compared to those of other countries. Low teaching hours, which allow pupils to do part-time work, are seen as part of the explanation.

The cost-effectiveness of the educational system is under constant evaluation. Close monitoring of costs with performance based pay has been implemented with the aim of reducing the average age of entry into tertiary education. The system of subsidies to households/pupils is restructured, away from grants to loans, in order to speed up the duration of education.

Adult education and training is getting a high profile in order to improve the skills of workers who have underinvested in formal education. This is in line with the objective to increase the productivity of low skilled workers to provide an economic rationale for high minimum wages.

While the educational system is restructured and made aware of the need for cost effectiveness, which is meant to be achieved by speeding up the throughput of students through the system, individual incentives to complete an education programme on time are weak. The individual rate of return on higher education is relatively weak in a long-term perspective, given the compressed wage structure and the generous financial support to students. Denmark is therefore contemplating a reform of the grant system in order to clarify the cost of different education programmes without compromising the objective to increase the educational attainment level of the population.

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# Chapter 3

# COST BENEFIT ANALYSES OF THE EDUCATIONAL SYSTEM

# THE NETHERLANDS

GUDRUN BIFFL

## Introduction

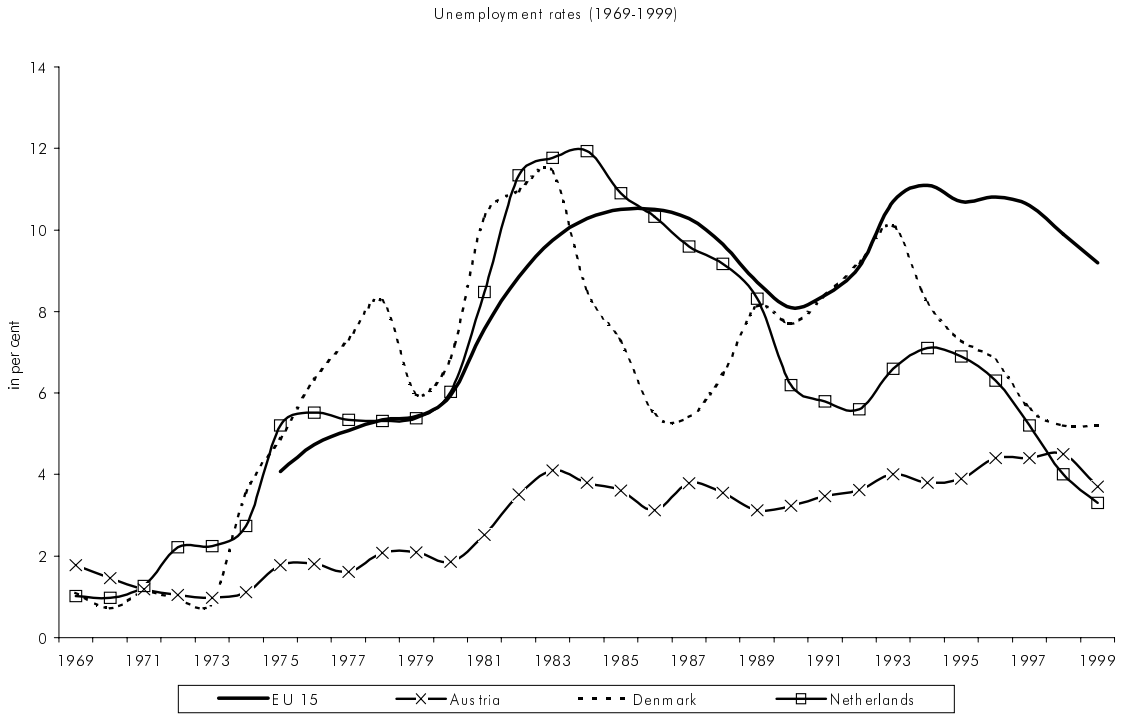
In the 1990s, the Netherlands has been one of the most successful economies in the EU. Between 1990 and 1999, the average annual economic growth rate was 2.7 percent compared to the EU-average of 1.8 percent. Only the Celtic tiger, Ireland, (real GDP: +6.5 percent p.a.) and Luxembourg (real GDP: +5.3 percent p.a.) have been significantly more successful. The unemployment rate has been halved between 1990 and 1999. With a level of 3.3 percent in 1999 it was together with Luxembourg (2.3 percent), the country with the lowest unemployment rate in the EU. This was the result of major structural reforms, which were decided upon in 1982[1] after over a decade of dismal economic performance – the so-called 'Dutch disease'. Economic performance was lower than the EU average in the period 1975 to 1985; the annual growth rate of real GDP was 1.9 percent compared to 2.3 percent on average in the EU. Also the unemployment rate was rising – from 4.3 percent 1975 to 12 percent 1983 – in which a significant differential by age, educational background and ethnic origin built up. The main thrust of the reform was to ensure a sustainable system in the light of the challenges ahead of an ageing and learning society in a globalised world.

The success of the Dutch socio-economic development is attributed to the combination of a stable macro-economic policy with wide-ranging structural and regulatory reforms. Macro-economic policy was directed towards enhancing confidence in the economy and thus to promote investment, which was achieved by pursuing an anti-inflationary monetary policy and by following a course of fiscal consolidation. Major policy attention was given to the size of the government sector. In the 1st half of the 1990s the discussion was centred upon a specification of core tasks of government, which should remain in the realm of the central government and of tasks which could be delegated to provinces and municipalities or to the private sector. In the second half of the 1990s, a major

[1] 1982 is usually seen as the turning point, when an accord was signed between unions and employer organisations in Wassenaar with the objective to moderate wage increases (see *Visser – Hemerijk,* 1997).

shift of operational jobs from central government to the counties and municipalities took place, and privatisation of the administration of social security was embarked upon. Central government implemented steering and supervisory bodies and introduced systems of transparency and accountability, key conditions for result-oriented governance. One of the objectives of the reforms, namely, to reduce the government budget, was reached. The budget deficit fell to ½ percent of GDP in 1999 and has turned into a small surplus by 2000.

*Graph 1: Unemployment development in international comparison*




Structural reform has been pervasive, encompassing labour and product markets[2], the tax system, social and labour market policy, education policy and most recently health care. The object of the reorientation of public policy is to provide insight into the cost of outputs (e.g., educational attainment or the health condition of the population); policy has been reoriented fundamentally from recording expenditure for particular inputs, e.g., cost of educational institutions or health care, to measuring and evaluating output.

[2] This is achieved by competition policy (the 1998 Competition Act led to the creation of the Netherlands Competition Authority), a review of regulations (MDW – legislative quality project with the aim of reducing the administrative burden), introduction of market forces in the former public services, like telecom, mail, electricity, and into areas like public transport, water supply, health and care.

Education, culture and science are considered major building blocks in the endeavour to preserve competitiveness and high medium to long-term economic growth. As a result, spending on education has not been curbed. However, the share of public expenditure on education in percent of total public expenditure has declined from 10.2 percent 1985 to 9.2 percent 1993 (latest figure available, *OECD,* 1996, p. 93) thus indicating a reduced relative position of education and training in public sector spending. This development conforms to Austria; while the proportion of public expenditure on education in the public budget was somewhat higher than in the Netherlands in 1993 (10.2 percent), it declined from a level of 11 percent in 1985. The OECD average amounted to 12.6 percent in 1995, compared to 10.6 percent in Austria. Thus both Austria and the Netherlands have a lower share of educational spending in the public budget than the OECD on average[3]. In 1997, total expenditure on education as a percentage of GDP amounted to 5.1 percent in the Netherlands 1997, somewhat less than the OECD average of 6.5 percent (Austria 6.7 percent).

*Table 1: Macroeconomic indicators: output, employment, productivity and labour costs*
*Annual average percent change*

| | European Union | | | | The Netherlands | | | |
|---|---|---|---|---|---|---|---|---|
| | 1975-1985 | 1985-1990 | 1990-1999 | 1994-1999 | 1975-1985 | 1985-1990 | 1990-1999 | 1994-1999 |
| GDP growth | 2.3 | 3.2 | 1.8 | 2.3 | 1.9 | 3.1 | 2.7 | 3.2 |
| Number employed | 0.1 | 1.4 | 0.2 | 0.9 | 0.5 | 2.3 | 1.7 | 2.4 |
| Average hours worked | – | – 0.4 | – 0.3 | – 0.3 | – | – 0.8 | – 0.2 | – 0.3 |
| GDP/number employed | 2.2 | 1.7 | 1.6 | 1.3 | 1.4 | 0.8 | 1 | 0.9 |
| GDP/total hours worked | – | 2.1 | 1.9 | 1.6 | – | 1.7 | 1.2 | 1.2 |
| Consumer prices | 10.3 | 4.4 | 3 | 2.1 | 5.1 | 0.8 | 2.5 | 2.1 |
| Average earnings | 11.6 | 6.4 | 4.1 | 3 | 5.1 | 1.7 | 3 | 2.3 |
| Average real earnings | 1.2 | 1.9 | 1.1 | 0.8 | 0 | 0.8 | 0.4 | 0.2 |
| Average real labour costs | 1.5 | 1.4 | 1.1 | 0.8 | 0.5 | 0.8 | 1 | 0.6 |
| Real unit labour costs | – 1.1 | – 0.8 | – 0.7 | – 0.7 | – 1.5 | – 0.3 | – 0.2 | – 0.2 |

Source: *European Commission (2000),* p. 101, 102.

In spite of the positive overall economic and labour market performance, the employment rate (employment in percent of the population in working age), in particular in full-time equivalents (56.3 percent), remained low in comparison with the EU average (1999 EU-FTE-employment rate: 56.6 percent), but particularly in comparison with Denmark (FTE-employment rate: 68.7 percent) and Austria (FTE-employment rate: 62.9 percent). A major share of employment is part-time. In the mid 1990s 66 percent of all women worked part-time (50 percent in 1983), and 16 percent of all men (7 percent 1983). The above average employment rise in the Netherlands since the mid 1980s was thus linked to a substantial rise in part-time work so much so that the actual volume of labour did not increase until the early 1990s. We are thus faced with a substantial redistribution of labour, which renders the former full employment definition, i.e., one of full-time full employment, meaningless. It must not come as a surprise that a Dutch economist has proposed a new concept of full employment (*Delsen,* 1997).

[3] See *OECD* (1998), p. 88.

But the high share of part-time employment has to be seen in the context of a massive catching-up process of labour force participation of women and a recovery of labour force participation of men[4] since the mid 1980s. In 1999 the participation rate of men amounted to 82.6 percent, compared to a low of 69 percent in 1983, and the rate of women to 64.4 percent, (34.7 percent in 1983). By 1999 the activity rate of men and of women in the Netherlands had surpassed the EU average (men: 78.8 percent, women: 59.6 percent). The activity rate of women is, however, clearly lower than in the Nordic countries, e.g., Denmark (1999: 76.5 percent). This is a result of different perceptions about the role of women in society and the division of labour between household and market work. In the Nordic countries, like Denmark and Finland, a larger proportion of household services has been transferred to the market since the 1960s, in particular to the public sector (mainly child care and social services) than in countries like Netherlands, Austria or Germany.

*Table 2: Labour force participation rates by level of educational attainment and gender 1998 (for 25-64 year olds)*

| | | Below upper secondary education | Upper secondary and post-secondary non-tertiary education | Tertiary-type B | Tertiary-type A and advanced research programmes | All levels of education |
|---|---|---|---|---|---|---|
| | | ISCED 0/1/2 | ISCED 3/4 | ISCED 5B | ISCED 5A/6 | |
| Australia | Men | 81 | 89 | 92 | 94 | 87 |
| | Women | 55 | 66 | 78 | 82 | 64 |
| Austria* | Men | 72 | 86 | 89 | 93 | 84 |
| | Women | 48 | 68 | 81 | 85 | 63 |
| Denmark | Men | 77 | 86 | 92 | 95 | 86 |
| | Women | 56 | 79 | 87 | 96 | 76 |
| Finland* | Men | 69 | 86 | 88 | 92 | 81 |
| | Women | 60 | 78 | 85 | 89 | 75 |
| France | Men | 77 | 89 | 93 | 91 | 85 |
| | Women | 57 | 76 | 83 | 83 | 69 |
| Germany | Men | 77 | 84 | 93 | 88 | 85 |
| | Women | 46 | 69 | 81 | 83 | 66 |
| Netherlands** | Men | 78 | 88 | x(5A/6) | 91 | 86 |
| | Women | 44 | 70 | x(5A/6) | 82 | 62 |
| Norway* | Men | 79 | 91 | 96 | 93 | 90 |
| | Women | 61 | 81 | 93 | 90 | 80 |
| Sweden** | Men | 80 | 89 | 88 | 93 | 87 |
| | Women | 67 | 83 | 86 | 92 | 81 |
| Switzerland | Men | 90 | 94 | 97 | 96 | 94 |
| | Women | 65 | 75 | 85 | 84 | 74 |
| United Kingdom | Men | 68 | 88 | 91 | 93 | 86 |
| | Women | 52 | 76 | 85 | 87 | 73 |
| United States | Men | 75 | 88 | 92 | 94 | 88 |
| | Women | 50 | 73 | 82 | 82 | 73 |
| Country mean | Men | 78 | 89 | 93 | 93 | 87 |
| | Women | 51 | 69 | 80 | 83 | 64 |

Source: *OECD* (2000AA, p. 269. – * Year of reference 1997. – ** ISCED 4 is included in ISCED 5B.

[4] Male rates had slumped in the late 1970s and early 1980s as a result of generous early retirement schemes and disability pensions.

Women with low educational attainment levels tend to remain in the household or be discouraged from entering the workforce compared to those with higher educational attainment (Table 2). In countries with an above average female labour force participation, e.g., the Nordic countries, a larger proportion of women with low educational attainment becomes a feature of the labour market. In these circumstances, measures have been introduced to encourage employment of the less skilled. This is why the Netherlands have combined tax reform measures as well as education and training measures to reduce the marginalisation of particular groups of workers and to increase labour market participation of women (*OECD,* 2000C, p. 55).

## The education system

Education serves a number of different functions. This research only looks at economic costs and benefits, in particular the relationship between investment in human capital and labour market performance. The analysis is based upon a review of the relevant literature and interviews of researchers of educational systems and outcomes in Dutch research institutions and universities. The starting point of the analysis is a presentation of the educational system.

The educational system in Netherlands is very similar to the Austrian system in terms of streaming and structure. It is structured into different types of schools and programmes from an early age onwards. Education splits into vocational orientation and general education streams at the age of 12 in which both streams allow the passage to tertiary education. Tertiary education remains binary, i.e., it has a general and applied stream of education, just like Germany and Austria. The funding system and the public-private mix of schools is, however, fundamentally different.

### Major building blocks of the education system of today

Towards the end of the 1980s, nursery schools and primary schools were combined into a basic school (Basisonderwijs), and attendance at nursery school was made obligatory for 5 year olds. Education was made compulsory at such an early age because only an early entry into the educational system could ensure that the growing share of ethnic minorities would have equal opportunity in education and later, in the labour market.

- The majority of children starts school at the age of 4 in primary school and remain there until the age of 12 (primary education consists in principle of 8 consecutive years of schooling).
- Special primary education is offered for children aged 3 to 12, who have special educational needs (SEN).
- After primary school, pupils choose between 4 types of lower secondary education:
    1. University preparatory school, which is a demanding general education stream (VWO), lasting for 6 years (12-18).

2. An easier general education stream (HAVO), lasting 5 years (12-17), which allows access to higher vocational education (HBO) but not to university.
3. A lower secondary general education stream (MAVO), which lasts for 4 years (12-16) and provides entrance to intermediate vocational education (MBO).
4. A pre-vocational orientation school (VBO), which takes 4 years (12-16); this level no longer provides sufficient skills to obtain the medium vocational qualification level for entry into the labour market as skilled worker.

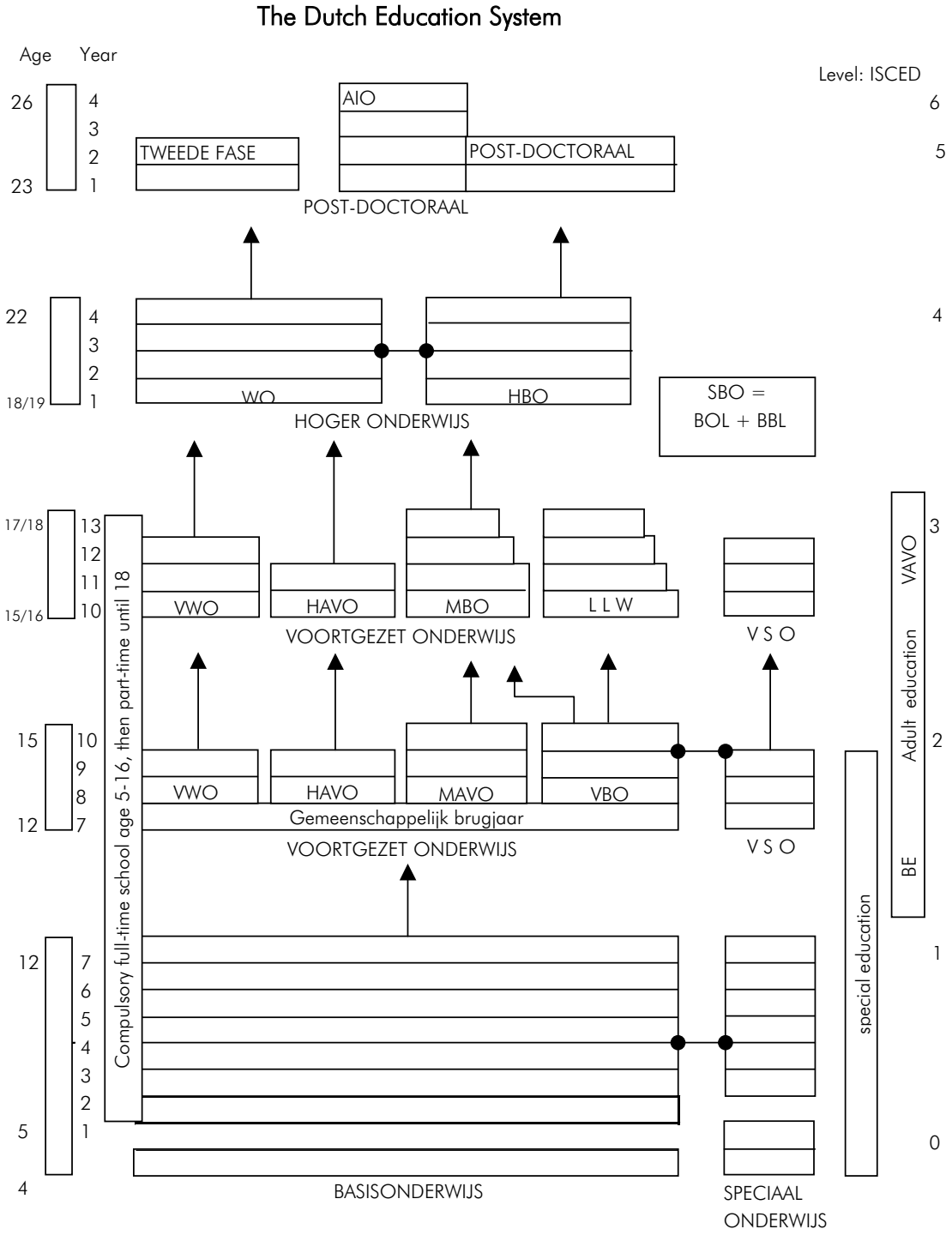
The streaming of pupils in lower secondary education implies an equally differentiated upper secondary education system after compulsory school age. It is composed of:

- the demanding general upper secondary education (VWO), which prepares for university (WO), even though about half of the graduates go on to the higher vocational education – HBO, which is comparable to the German Fachhochschule,
- the less demanding upper secondary general education stream – HAVO – gives access to HBO (higher professional or vocational education), but many enter the intermediate vocational education – MBO,
- MBO is vocationally oriented, leading to middle management positions in manufacturing and services industry, if three and four year programmes are chosen. Shorter programmes provide professional skills,
- the apprenticeship system (LLW) offers general vocational training (one or two days a week at school) and practical training in private industry work places or in trainee workshops for 16 year olds with or without VBO or MBO certificates. Depending on prior knowledge the courses may last from 1 to 3 years.

It should be noted that unlike the practice in many other countries, young people aged 17 and 18 are obliged to continue with education at least on a part-time basis. Secondary vocational education (SBO) is an option for those who have not obtained a vocational skill level necessary for skilled work on the labour market. SBO consists of full or part time senior secondary education courses (BOL) and training for apprentices (BBO). Adult education comprises adult general secondary education (VAVO) and adult basic education (BE) plus courses in Dutch as a second language.

At 18 or 19, one may enter university (WO) or higher vocational/professional education (HBO). There are also three levels of adult education – BE and VAVO – offering skills up to ISCED 3 level.

*Graph 2: Organisation chart of the education system*




Source: *OECD* (1996), p. 305 and www.minocw.nl/edusyst.

In 1997, some 1.6 million children attended primary school, about two thirds went to private schools. Schools have considerable freedom in the choice of teaching material and curriculum. Attainment targets are, however, formulated by the government and basic minima of a national curriculum. About two thirds of primary schools use tests, which are developed by the National Institute for Educational Measurement (CITO), to assess the attainment level of their primary school leavers. The test results provide guidance for the choice of secondary education streams or programmes.

Secondary education starts out with three years of basic education and offers programmes of specialisation thereafter in which the duration differs by type of programme. In 1997, over 830,000 pupils attended secondary schools, many of them privately run. The different streams have been merged to a large extent into broad-based combined schools. Only some have remained separate schools, providing just one type of education. In the first three years, i.e., until the age of 12, a compulsory core curriculum of 15 subjects is taught, for which the government has spelled out attainment targets. At the end of basic secondary education pupils have to sit a national test (supplied by CITO).

In order to foster the transition from lower secondary education to upper secondary education the streams of VBO and MAVO have been merged to a new stream, called VMBO, a type of pre-vocational secondary education, in August 1999. The more demanding HAVO/VWO general and vocational streams of lower secondary education have introduced certain compulsory subjects in August 1998, which replace optional subjects, in order to increase the science base of secondary education. This move has to be seen in connection with the so-called 'investing in progress' action plan, an endeavour to integrate information and communication technology (ICT) into the curriculum.

The streaming of education in lower secondary education flows into equally streamed upper secondary education. One stream prepares students for tertiary education (ISCED 3A and 3B) or for entry into working life (ISCED 3C). Post-secondary non-tertiary educational programmes are of marginal relevance in the Dutch case.

Tertiary education, i.e., medium cycle higher education and bachelor programmes, are HBO graduates or graduates from universities, who may call themselves 'ingenieur' or 'meesters' – with ISCED 4 skill level. Only the 'doctorandus' is comparable to a masters degree (ISCED 5)[5].

Universities provide academic skills while higher professional education (HBO) teaches skills needed in certain professions or occupations. With the exception of medicine, where a numerus clausus is a permanent institution, access to university and higher professional education is not

[5] See *Heijke – Borghans* (1998), p. 274.

rationed[6]. Rationing may occur in some study fields, however, if capacity constraints arise. Then grades in upper secondary school are used as weights in a lottery of entry tickets.

In the second stage of university education (postdoctoraal), students can obtain a doctorate by writing a thesis, which affords advanced research qualifications (ISCED 6). In this stage, students have employee status (AIO), which explains why PhDs are not classified as an educational category.

In 1984, the Open University (OU) system was founded, to make higher education more accessible to adults. It is based on distance education and does not have any entry requirements.

*Overview of the structure of upper secondary education*

Traditionally upper secondary education has consisted of three branches,

- an academic stream – VWO (Voorbereidend Wetenschappelijk Onderwijs) – the last three years,
- a senior general secondary education – HAVO (Hoger Algemeen Voortgezet Onderwijs), which in principle should prepare for higher vocational education (HBO, i.e., Hoger Beroepsonderwijs),
- senior vocational education (MBO, i.e., Middelbaar Beroepsonderwijs) and apprenticeship.

Senior secondary vocational education (MBO, vocational training track) can be taken on a full-time or part-time basis. Full-time MBO may last up to four years. It is attended by students aged 16 to 20. Part-time MBO education tends to be taken by mature students. Students who have successfully completed MBO can enter higher vocational education (HBO).

The Dutch apprenticeship system dates back to the late 19th century. It comprises 21 national educational bodies, each representing a different industry or occupational group. The 21 national bodies are organised within a central, nation-wide body, the Association for National Bodies for Vocational Training (COLO). This association co-operates with the Ministry of Education, Culture and Science and the Ministry of Social Affairs and Employment. Apprenticeship education is not only a system of initial education but offers refresher courses for adults and increasingly also to older unemployed.

[6] The right to enter higher education is granted if the prospective student has a recognised secondary education diploma, spelled out in the Higher Education Act of 1992.

*Special education needs (SEN)*

All OECD countries have implemented special education systems for children and adults who need extra support for efficient learning. Students may have disabilities, learning deficiencies or come from disadvantaged backgrounds and need additional support to make educational progress. Since the differing degree of integration of special needs kids into mainstream education makes international comparisons difficult a new tri-partite international taxonomy classifies special programmes in an internationally consistent way. Category A needs arise from impairing conditions; category B needs refer to learning difficulties and category C refers to disadvantage. There is a substantial overlap between these categories. If one takes all three elements together, the proportion of children with special needs in compulsory education was 5.8 percent in Switzerland, 16 percent in Finland, 20 percent in Ireland and 33.5 percent in Netherlands in 1996 (*OECD,* 2000A, p. 192). Only the United States of America had a higher share of pupils needing special resources than the Netherlands[7].

The large number of SEN-students in the Netherlands is the result of a high proportion of children from disadvantaged backgrounds, i.e., category C pupils, in particular ethnic minorities.

*Table 3: Number of students receiving additional resources as a percentage of all students in compulsory education*

*Percentage of all students in primary and lower secondary education receiving additional resources, in categories A,B, and C, 1996*
*(Based on head counts)*

| | Total percent of all students | Cross-national category A | Cross-national category B | Cross-national category C |
|---|---|---|---|---|
| Austria | m | 1.33 | 2.01 | m |
| Finland[2] | 16.00 | 1.04 | 13.26 | 1.70 |
| France[1 2 3] | 18.07 | 2.53 | 2.14 | 13.40 |
| Germany | 4.31 | 1.45 | 2.86 | x |
| The Netherlands[1 2 3] | 33.53 | 1.77 | 3.49 | 28.27 |
| Switzerland[2] | 5.80 | 1.62 | 3.76 | 0.42 |
| United Kingdom | 2.56 | x | x | x |
| United States | 35.50 | 5.62 | 8.43 | 21.40 |

Source: *OECD* (2000A), p. 192. [1] Coverage different for primary and lower secondary education. – [2] Year of reference different from 1996. – [3] Some figures are estimated.

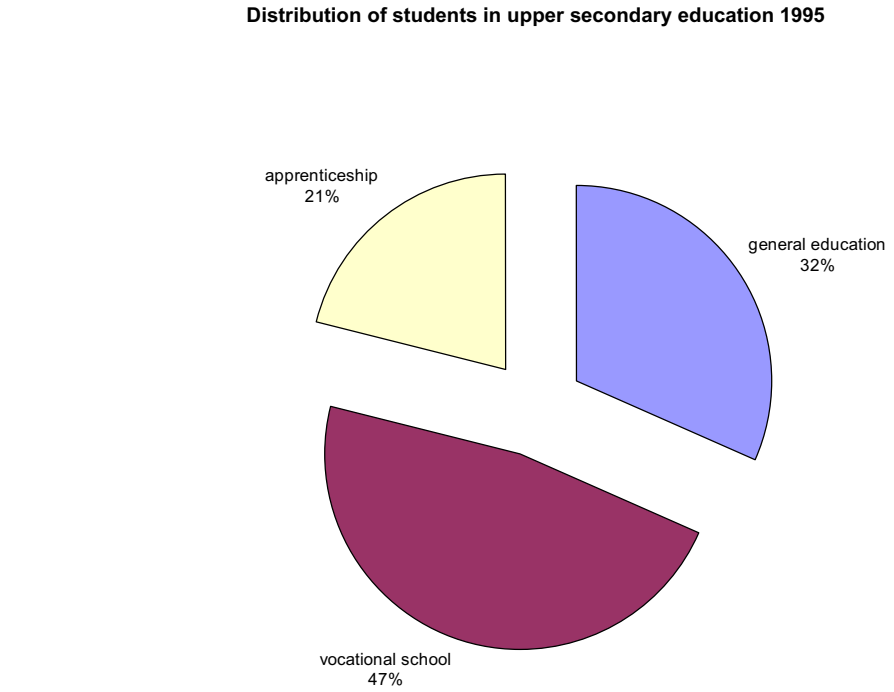
In the 1990s, a 'going to school together' policy has been initiated in the Netherlands to counter the steady rise in the number of special education needs children entering special education. As a result the number of pupils at special schools has begun to fall and more and more remain in the mainstream schools. This has been achieved by awarding children with disabilities a personal budget, which parents may spend either for a special or a mainstream school.

[7] Perhaps some allowance should be made for the subjective element in the grading of disability and of differences in the provision of special funds to schools or students in the different countries.

## Enrolment and transition rates between elements of the education system and the labour market

In 1995, 608,000 students were enrolled in full-time upper secondary education. 31.5 percent of that number attended upper general secondary education, about equal numbers in HAVO and VWO programmes. Thus the great majority (68.5 percent) of all upper secondary students pursued vocational medium to higher secondary education – 47,5 percent attended senior vocational schools and 21 percent participated in an apprenticeship programme.

*Graph 3: Students in upper secondary education in 1995*




S: Baaijens et al. , 1998.

Upper secondary vocational schools (MBO) have 4 major specialisations and some minor ones:

- a technical orientation (14.3 percent of all students),
- an agricultural orientation (2.8 percent of all students),
- a commercial orientation (15.7 percent of all students),
- a health and social services orientation (12 percent of all students),
- other courses, e.g., orientation courses, with 2.8 percent of all students.

Girls are strongly underrepresented in apprenticeship education – only 24.5 percent of all apprentices are girls. The main reason may be that apprenticeships are most commonly provided by traditional manufacturing industries, in which the vast majority of workers is male. This is in stark contrast to the situation in general secondary education, where girls outnumber boys. Also in senior vocational schools girls are relatively well represented; they make up almost half of the students. They tend to be highly overrepresented in the social services and health care programmes (almost 88 percent of students), and are rarely found in the technical professions (15.1 percent).

There is a large degree of fluidity of movement between the different paths of education, which is interpreted as a sign of inefficiency of the system, since it means that many pupils do not choose the fastest path in terms of school years towards their educational goals (see *Odink – Kunnen,* p. 97). Measures to reduce the number of students choosing non-standard upper secondary and tertiary educational paths are therefore drawn up by the government.

## Enrolment and transition rates in upper secondary education

In the course of time, more and more students have continued with upper secondary education after compulsory education. The proportion of 17 year olds entering the labour market has been very low for some time and number 10 percent of the birth cohort. From the age of 18 onwards, more pupils enter the labour market, but the proportion continuing with either upper secondary or tertiary education is rising. In 1992, 73.4 percent of the 18 year olds were in full-time higher education compared to 78 percent in 1998 (*OECD,* 1995 and 2000A), and 61.5 percent of the 19 year olds compared to 65 percent 1998.

At the age of 20, 57 percent were still enrolled in upper secondary or tertiary education in 1998. This is a very high enrolment rate in upper secondary and higher education by international standards. The OECD average was 43 percent, Austria is clearly below the OECD average with 29 percent, while Denmark conforms to the OECD average.

The majority of students is aged 18 to 25. One of the reasons for the fact that participation in full-time higher education is low for persons older than 26 is that from 1991-92 onwards full-time students older than 27 can no longer claim student financial aid (grants/loans). The throughput through universities and HBOs is fast and concentrated – full-time students are expected to complete their courses in 4 years, for some natural science courses and medicine it is 5 years. For that period student grants are offered by the state. Students may stay registered for another 2 years during which time they may only take up student loans. When the maximum registration period is reached, students are no longer able to enrol and to complete their studies. Since 1986 one may pursue higher education on a part-time basis – but then there is also restriction on the duration of study through financial and administrative controls, which put pressure on the time spent in higher education.

*Table 4: Transition characteristics at each year of age from 15 to 20: net enrolment rates by level of education*

*Based on head counts (1998) in percent*

| | Age 15 | Age 16 | | Age 17 | | | Age 18 | | | Age 19 | | | Age 20 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Second. educa-tion | Second. educa-tion | Second. educa-tion | Post-second. non-tertiary | Tertiary educa-tion | Second. educa-tion | Post-second. non-tertiary | Tertiary educa-tion | Second. educa-tion | Post-second. non-tertiary | Tertiary educa-tion | Second. educa-tion | Post-second. non-tertiary | Tertiary educa-tion |
| Australia | 99 | 97 | 81 | 1 | 5 | 34 | 3 | 30 | 20 | 3 | 35 | 17 | 2 | 32 |
| Austria | 94 | 88 | 75 | 11 | | 43 | 19 | 6 | 15 | 11 | 15 | 5 | 4 | 20 |
| Denmark | 98 | 93 | 82 | | | 74 | | | 54 | | 3 | 30 | | 10 |
| Finland | 100 | 89 | 93 | | | 82 | | 3 | 24 | | 19 | 14 | | 31 |
| Germany | 98 | 96 | 91 | | 1 | 83 | | 3 | 40 | 18 | 8 | 18 | 15 | 15 |
| Netherlands | 99 | 96 | 85 | 1 | 3 | 62 | 1 | 15 | 39 | 1 | 25 | 26 | 1 | 30 |
| Switzerland | 98 | 90 | 85 | | | 78 | 1 | 1 | 54 | 3 | 6 | 23 | 3 | 13 |
| U.K. | 101 | 81 | 66 | | 2 | 25 | | 24 | 14 | | 33 | 10 | | 33 |
| USA | 99 | 84 | 74 | | 3 | 23 | 3 | 37 | 4 | 3 | 39 | 1 | 3 | 40 |
| Country mean | 93 | 88 | 78 | 1 | 1 | 48 | 4 | 16 | 23 | 4 | 25 | 12 | 3 | 28 |

Source: *OECD* (2000A), p. 136.

The number of students in HBO institutions has increased faster than the number of students in universities from the 1970s to the 1990s, even though about half the number of students in general upper secondary education are in a HAVO stream and the other half in the VWO stream. In 1998, 269,000 students were enrolled in HBO institutions and 154,000 in universities. A further rise in HBO students is expected and a slight decline in university student numbers.

The proportion of women in higher and university education has increased markedly since the 1970s. While in the mid 1970s only 25 percent of all university students were female and 37 percent of HBO students, the respective shares have risen to 52 percent and 47 percent in 1996-97.

While enrolment in tertiary education has increased rapidly, in particular as a result of increasing participation of middle class women in higher education, the share of students of low income families has hardly risen. "This reflects the social class basis of recruitment to the selective system of secondary education in the Netherlands, acquisition of the secondary school diplomas, and subsequent transfer to different forms of higher education" – to quote Hake, Kamp and Slagter (p. 31.) It may also be linked to the large proportion of private schools which may impose entry restrictions, which may contribute to the disadvantage of particular groups in the early educational careers[8].

[8] While ethnic minorities constitute about 8.4 percent of youth, only 2 percent are enrolled in universities and 4 percent in HBOs (for more detail see *Hake et al,* 1999).

## The role of the state in the Dutch education system

A key feature of the Dutch education system is the freedom to found schools on the basis of religious, ideological and educational beliefs (article 3 of the constitution). As a result the Netherlands has a very high proportion of privately run schools (65 percent of all schoolchildren), which may differ in terms of their cultural and religious outlook. Public schools are run by the municipal authorities or by a governing committee appointed by the municipality. Private schools are run by an association or foundation; most of them are either Catholic or Protestant, but other religious beliefs have also founded schools. In addition, private non-denominational schools exist, which are run by an association not based on specific religious or cultural beliefs. Unlike public schools, which must admit all pupils, private schools can impose criteria for admission.

In order to safeguard standards of education the Ministry of Education, Culture and Science imposes a number of statutory standards in relation to the quality of education, in particular the subjects, the attainment targets and the content of national examinations. Furthermore the number of teaching periods per year, teacher training and qualifications, the obligation of schools to plan and report to the Education Inspectorate are determined by the government.

The Education Inspectorate plays an important role in judging and controlling the quality of schools. Also the right of parents and of pupils in matters of the school have to be ensured. The efficiency of the education system and the trust of the population in the education system hinges crucially upon the quality of the supervision of schools, i.e., the Inspectorate of the Minister of Education, Culture and Science ( see *Education Inspectorate,* 1999).

Due to the large number of private schools with various denominations there are large numbers of authorities. Educational institutions are given great freedom in the allocation and management of their resources. Central government control is increasingly confined to the area of broad policy-making, the setting of standards and to taking supervisory responsibilities. Municipalities appoint school boards for the publicly run schools, the private schools appoint their own boards, i.e., the association or foundation which established the school. There are national umbrella organisations of private school associations, of school authorities of the municipalities, which hold regular consultations with the Minister of Education on educational policy. Also universities, HBOs, vocational education colleges, and institutions of higher education act quite autonomously; they have umbrella organisations which enter into consultations with the government.

National advisory services provide guidance to individual schools, e.g., the school advisory services (SBD) for primary and special schools, three national educational advisory centres for secondary schools and teacher training colleges (LPC) – the Educational Advisory Centre for non-denominational schools (APS), the Protestant Educational Advisory Centre (CPS) and the Catholic Educational Advisory Centre (KPC). Specialised national educational support organisations are, amongst others, the National Institute for Educational Measurement (CITO), the National Institute for Curriculum Development (SLO), and the Centre for Innovation in Training (CINOP). The

municipalities receive funds from central government to maintain the quality of the school advisory services.

Municipalities also have the obligation to provide an adequate number and range of publicly run schools; they are the ones who have to ensure that ethnic minorities are not facing educational disadvantages.

### Adult education and training

Since 1996, upper secondary vocational education (MBO) and apprenticeship education and training are governed by a new Vocational and Adult Education Act (WEB), which integrates the various forms of vocational education and training in Regional Education Centres (ROC). These regional centres provide adult basic and general secondary education, apprenticeship training, senior vocational education and local non-formal education. The aim of the reform was to ensure minimum skills for everyone, with a particular focus on ethnic minorities.

Until 1991 education and training of the unemployed was the responsibility of the Public Employment Service (PES), a Directorate General of the Ministry of Social Affairs and Employment. Since then the PES has been turned into an independent institution; it may continue to provide education and training in its own training centres or make contracts with public schools and private training institutions. The funding is still provided by the Ministry, but increasingly also by the European Social Fund. More recently private temporary work agencies have started to offer training for unemployed job seekers who are willing to do work on a temporary basis.

The training provided by the PES centres for adult vocational training resembles apprenticeship training. As a consequence of the restructuring of adult education (Adult and Vocational Education Act – WEB) the training centres of the PES do not have a guaranteed number of unemployed to train anymore but have to compete with other suppliers of training.

Centres for basic adult training were introduced by the Ministry for Health and Well-being to help migrants to integrate into Dutch society. Although ethnic minorities still make up a large part of the trainees, the centres are now also open to other groups with a weak labour market performance.

## Economic impact of the education system

The education system is seen by the Dutch not only as a means to prepare youth for the labour market but also as an important instrument to create and transfer norms and values to youth. Although education has consumer aspects, the investment character of education is in the forefront of policy (*Heijke – Borghans,* 1998), even though the future returns to education are difficult to measure. It is hard enough to measure the economic returns, such as productivity and wages, but it is even harder to measure the returns to norms and values, i.e., cultural and ethical values.

Moreover, the returns of certain types of education will change over time, as do the educational elements/contents of types of schools and the need for certain types of skills in the labour market and the society at large. A simple extrapolation of the returns to certain types of education into the future is, therefore, hazardous and must be treated with reserve. Socio-economic development and technological progress may render certain types of education and elements of a curriculum obsolete while new subjects have to be introduced as the need arises. Therefore it is important to know why certain types of education reap higher returns than others, without disregarding the degree of flexibility in the deployment and usage of acquired skills in different jobs.

However, one may gain insight into the costs and benefits of education by analysing costs and benefits to the individual, the employers, the educational institutions and the society at large – in terms of the tax burden and government expenses on the one hand and wages, productivity and economic growth on the other. However, it has to be borne in mind, that these calculations offer only a crude guide for investment in education and training to the individual and the society at large.

## Educational attainment level of youth relative to adults

The educational attainment level of the adult population of working age is an indicator for the stock of human capital. It highlights the education policy of the past and is a point of reference for more recent education policy, i.e., the differential between the adult population and youth.

In 1998, 35.7 percent of the Dutch population between 25 and 64 years of age, did not have more than lower secondary education, i.e., a much larger proportion than in Austria (1997: 26.7 percent) but less than on average in the OECD (43.8 percent). People with upper secondary education up to ISCED 3 skill level constituted 40.1 percent of the adult population of working age in the Netherlands, clearly less than in Austria (57 percent). The share of people with a skill level of ISCED 4 and beyond, was, however, with 24.2 percent in the Netherlands, higher than in Austria, where only 16.4 percent of the 25-64 year olds had that skill attainment level. It is therefore reasonable to say that the skill composition of the adult population in working age is more polarised in the Netherlands than in Austria or Denmark. In the latter two countries the medium to upper medium skill segment is very prominent in international comparison at the cost of postsecondary education (ISCED 4) and tertiary education (ISCED 5 and beyond). Austria and Denmark also have a much lower share of persons with skill levels of ISCED 3 and below in the adult population of working age.

*Table 5: Distribution of the population 25 to 64 years of age by level of educational attainment (1998)*

| | Pre-primary and primary education | Lower secondary education | Upper secondary education | Post secondary non-tertiary education | Tertiary-type B education | Tertiary-type A and advanced research programmes | All levels of education |
|---|---|---|---|---|---|---|---|
| | ISCED 0/1 | ISCED 2 | ISCED 3 | ISCED 4 | ISCED 5B | ISCED 5A/6 | |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Australia | x(2) | 44.0 | 30.6 | x(3) | 8.8 | 16.6 | 100 |
| Austria* | x(2) | 26.7 | 57.0 | 5.7 | 4.5 | 6.2 | 100 |
| Denmark | 0.1 | 21.4 | 53.2 | x(3) | 19.8 | 5.4 | 100 |
| Finland* | x(2) | 31.7 | 38.9 | - | 16.7 | 12.8 | 100 |
| Germany | 2.1 | 14.1 | 56.3 | 4.4 | 9.0 | 14.0 | 100 |
| The Netherlands | 12.5 | 23.2 | 40.1 | x(6) | x(6) | 24.2 | 100 |
| Switzerland | x(2) | 18.5 | 58.5 | x(3) | 9.0 | 14.0 | 100 |
| United Kingdom | x(2) | 19.2 | 57.3 | x(7) | 8.2 | 15.4 | 100 |
| USA | 5.0 | 8.6 | 51.6 | x(3) | 8.3 | 26.6 | 100 |
| Country mean | 24.4 | 19.4 | 59.9 | 5.4 | 9.4 | 13.6 | |

Source: *OECD* (2000A), p. 33. Note: Column of reference is given in brackets after "x", x(2) means that data are included in column 2. – * Year of reference 1997.

ISCED 0: Early childhood education serves a dual purpose: to give the child daily care while parents are at work.

ISCED 1: Programmes at the primary level generally require no previous formal education.

ISCED 2: The core of lower secondary education continues the basic programmes of the primary level.

ISCED 3: Upper secondary level requires the completion of the lower secondary level of education or a combination of basic education and vocational experience.

ISCED 4: Post-secondary non-tertiary educational programmes are at the boundary between upper secondary and post-secondary education.

ISCED 5A: Tertiary-type A programmes are largely theory-based and are designed to provide sufficient qualifications for entry to advanced research programmes and professions with high skill requirements, such as medicine, dentistry or architecture. Tertiary-type A programmes have a minimum cumulative theoretical duration of three years' full-time equivalent, although they typically last four or more years. These programmes are not exclusively offered at universities. Conversely, not all programmes nationally recognised as university programmes fulfil the criteria to be classified as tertiary-type A. Tertiary-type A programmes include second degree programmes like the American Master. First and second programmes are sub-classified by the cumulative duration of the programmes.

ISCED 5B: Tertiary-type B programmes are typically shorter than those of tertiary-type A and focus on practical, technical or occupational skills for direct entry into the labour market, although some theoretical foundations may be covered in the respective programmes. They have a minimum duration of two years full-time equivalent at the tertiary level.

ISCED 6: This level is reserved for tertiary programmes that lead directly to the award of an advanced research qualification, e.g., an Ph.D. The theoretical duration of these programmes is 3 years full-time in most countries, although the actual enrolment time is typically longer. The programmes are devoted to advanced study and original research.

The relatively low employment rate of adults (full-time equivalents) in the Netherlands and the large differential of unemployment rates by educational attainment level have to be interpreted in the light of this polarised skill structure of the population. The Dutch supply of low skilled workers is, relatively speaking, more abundant than in other advanced EU countries, while the economic development level and thus the demand side is fairly similar. This may be the result of a substantial inflow of unskilled persons from the former Dutch colonies, often ethnic minorities, and of foreign workers in the course of the late 1960s and 1970s.

Attempts to increase the activity rate of the population of working age in order to increase labour supply, must face the fact that labour force participation rates are lower for those with lower educational attainment. This is particularly true in the case of women, who have socially accepted alternatives to market work, namely household work. In the case of youth the situation is somewhat different: the less skilled tend to work on the labour market full-time and those in further/higher education part-time – if at all. Thus an increase in the activity rate of the population of working age (15-64) tends to be linked with an above average rise in the supply of unskilled labour. This has happened in the Netherlands in the 1980s and 1990s. It explains the public policy concern in the Netherlands to improve the job prospects of the low skilled workers by granting tax benefits to employers for minimum wage earners (the SPAK was introduced in 1997 (*OECD,* 2000C), and by offering an earned income tax credit (EITC) to welfare recipients as a financial incentive to take a job at the minimum wage. Also the new Adult and Vocational Education Act (WEB) of 1996, by providing an institutional framework geared to boosting basic adult education and including courses in Dutch as a second language as an important adjunct to basic education (*Baaijens et al,* 1998, p. 21), must be seen as improving the labour market prospects of the unskilled.

In 1998, at a time when the total unemployment rate in the Netherlands was 4 percent, there was not only a significant difference in unemployment by skill level but also by gender. While the average unemployment rate of men was 2.8 percent, men with less than upper secondary education (ISCED 0/1/2) had an unemployment rate 1.6 times the male average. Men with medium skills and, of course, men with higher education enjoyed quasi full employment, with unemployment rates in the order of 2 percent. Women, in contrast, had on average an unemployment rate comparable to the least skilled men (4.8 percent). Women with skills below upper secondary education were faced with an unemployment rate of 7.7 percent. Only women with tertiary education had relatively low unemployment rates, but at 2.7 percent, the rate was higher than that for men with only medium educational attainment levels.

Unemployment rates of women are higher for middle aged women (30-44) in every skill group than for the 25-64 year olds. This factor may indicate that it is difficult for women to combine family care and paid work.

*Table 6: Unemployment rates by educational attainment level and gender for populations 25 to 64 and 30 to 44 years of age (1998)*

| | | Ages 25 to 64 | | | | | Ages 30 to 44 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Below upper secondary education | Upper secondary and post-secondary non-tertiary education | Tertiary-type B | Tertiary-type A and advanced research pro-grammes | All levels of education | Below upper secondary education | Upper secondary and post-secondary non-tertiary education | Tertiary-type B | Tertiary-type A and advanced research pro-grammes | All levels of education |
| | | ISCED 0/1/2 | ISCED 3/4 | ISCED 5B | ISCED 5A/6 | | ISCED 0/1/2 | ISCED 3/4 | ISCED 5B | ISCED 5A/6 | |
| Australia | Men | 10.4 | 5.8 | 3.5 | 2.8 | 6.6 | 11.0 | 5.2 | 3.2 | 2.6 | 6.4 |
| | Women | 7.5 | 5.9 | 4.7 | 3.0 | 5.8 | 8.7 | 6.3 | 5.0 | 3.6 | 6.6 |
| Austria* | Men | 7.0 | 3.3 | 2.5 | 2.2 | 3.8 | 7.4 | 2.8 | 2.2 | 2.3 | 3.4 |
| | Women | 6.5 | 3.6 | 2.5 | 3.3 | 4.2 | 6.4 | 3.4 | 2.1 | 4.0 | 4.1 |
| Denmark | Men | 4.2 | 3.3 | 2.6 | 3.9 | 3.4 | 2.8 | 2.8 | 1.8 | 4.9 | 2.8 |
| | Women | 9.6 | 6.3 | 2.8 | 7.4 | 6.0 | 11.6 | 5.1 | 2.6 | 7.6 | 5.7 |
| Finland* | Men | 14.5 | 11.8 | 7.4 | 4.6 | 10.7 | 14.3 | 10.5 | 6.3 | 3.9 | 9.6 |
| | Women | 17.0 | 12.2 | 8.6 | 4.5 | 11.5 | 18.1 | 11.2 | 8.6 | 4.0 | 10.5 |
| France | Men | 13.5 | 7.7 | 6.5 | 5.3 | 9.2 | 14.5 | 6.7 | 5.4 | 4.3 | 8.7 |
| | Women | 16.5 | 12.2 | 6.9 | 8.0 | 12.5 | 19.1 | 12.0 | 5.8 | 8.2 | 12.9 |
| Germany | Men | 17.6 | 9.7 | 5.2 | 4.8 | 9.2 | 16.0 | 8.4 | 3.1 | 4.1 | 7.7 |
| | Women | 14.7 | 11.1 | 8.0 | 5.9 | 10.7 | 15.0 | 10.2 | 6.2 | 5.7 | 9.7 |
| Ireland** | Men | 11.7 | 4.2 | 2.5 | 2.9 | 7.4 | 13.0 | 3.5 | 2.1 | 2.3 | 7.3 |
| | Women | 11.4 | 4.8 | 3.0 | 3.9 | 6.5 | 12.2 | 5.0 | 2.4 | 4.3 | 6.5 |
| Nether-lands*** | Men | 4.6 | 2.1 | x(5A/6) | 1.9 | 2.8 | 5.0 | 2.0 | x(5A/6) | 1.9 | 2.6 |
| | Women | 7.7 | 4.2 | x(5A/6) | 2.7 | 4.8 | 8.5 | 5.0 | x(5A/6) | 3.0 | 5.1 |
| Norway* | Men | 4.2 | 2.9 | 1.7 | 1.8 | 2.8 | 6.4 | 2.9 | 1.8 | 1.4 | 3.1 |
| | Women | 3.8 | 3.4 | 1.6 | 1.6 | 2.9 | 4.2 | 3.7 | 2.2 | 1.0 | 3.2 |
| Spain | Men | 12.6 | 9.9 | 8.4 | 8.6 | 11.3 | 13.6 | 8.6 | 6.3 | 6.2 | 10.9 |
| | Women | 25.6 | 22.7 | 23.9 | 17.0 | 23.0 | 29.5 | 22.7 | 22.9 | 14.2 | 23.8 |
| Sweden*** | Men | 9.8 | 8.2 | 6.0 | 4.2 | 7.7 | 11.3 | 8.5 | 5.6 | 4.7 | 8.1 |
| | Women | 11.1 | 7.5 | 4.2 | 3.0 | 6.9 | 15.8 | 7.9 | 4.3 | 3.8 | 7.6 |
| Switzerland | Men | 6.2 | 2.9 | m | m | 3.0 | m | 2.8 | m | m | 2.6 |
| | Women | 5.3 | 2.7 | m | m | 3.6 | m | 3.1 | m | m | 3.7 |
| U.K. | Men | 13.7 | 5.3 | 3.5 | 2.3 | 5.6 | 15.7 | 4.8 | 3.4 | 1.8 | 5.1 |
| | Women | 7.3 | 4.5 | 1.7 | 3.0 | 4.4 | 10.3 | 4.9 | 1.9 | 3.1 | 4.9 |
| USA | Men | 8.0 | 4.6 | 3.2 | 1.7 | 4.1 | 9.2 | 4.5 | 2.7 | 1.3 | 4.0 |
| | Women | 9.3 | 4.2 | 3.0 | 1.9 | 3.8 | 12.8 | 4.8 | 3.4 | 1.8 | 4.4 |
| Country mean | Men | 8.9 | 5.3 | 4.3 | 3.3 | 5.7 | 9.8 | 4.9 | 3.9 | 2.7 | 5.5 |
| | Women | 10.0 | 7.6 | 5.2 | 4.6 | 7.2 | 12.2 | 7.6 | 5.3 | 4.1 | 7.6 |

Source: *OECD* (2000A), p. 270. – * Year of reference 1997. – ** ISCED 5B includes some ISCED 4. – *** ISCED 4 is included in ISCED 5B.

## Performance of the education system

International comparisons of student achievement have become an essential tool in assessing the performance of education systems, by measuring achievement in mathematics, science and reading. Mathematical skills are increasingly important in a globalised economy in which the adaptation to technological change is a key variable of competitiveness. Data from the Third International Mathematics and Science Study (TIMSS) show that Switzerland, the Netherlands and

Austria are the three countries with the highest mean mathematics achievement of their 14 year olds for the year 1995 (Table 7). The Netherlands top all countries in the average science achievement level, closely followed by Austria. Also the lowest quartile and the top quartile had higher mathematics and science achievement levels than the average of all OECD countries in these attainment groups. One has to bear in mind, however, that the Netherlands, as well as Austria and Switzerland, did not fulfil the sampling requirements for a representative survey.

*Table 7: Student differences in mathematics and science achievement*

*Distribution of mathematics/science achievement scores, eighth grade (1995)*

| | Mathematics | | | Science | | |
|---|---|---|---|---|---|---|
| | Mean | 25th percentile° | 75th percentile° | Mean | 25th percentile° | 75th percentile° |
| Australia** | 530 | 460 | 600 | 545 | 475 | 619 |
| Austria** | 539 | 474 | 608 | 558 | 499 | 623 |
| Denmark** | 502 | 443 | 561 | 478 | 423 | 541 |
| Germany** | 509 | 448 | 572 | 531 | 463 | 602 |
| Netherlands** | 541 | 477 | 604 | 560 | 505 | 619 |
| Norway | 503 | 445 | 560 | 527 | 470 | 588 |
| Sweden | 519 | 460 | 579 | 535 | 476 | 598 |
| Switzerland* | 545 | 485 | 607 | 522 | 460 | 587 |
| England* | 506 | 443 | 570 | 552 | 485 | 625 |
| USA* | 500 | 435 | 563 | 534 | 465 | 608 |
| Country mean | 516 | 456 | 576 | 523 | 464 | 586 |

Source: *OECD* (1996), p. 206, 207. – ° 25 or 75 percent of students score below this point. – * Countries met TIMSS sampling requirements only partially. – ** Countries did not meet TIMSS sampling requirements.

Gender differences in Dutch student achievement were not much higher than the average of all OECD countries in both mathematics and science (Table 8) – the same holds for Austria. Only Sweden and Germany have hardly any difference in the mean mathematics achievement by gender. Also significantly below the OECD average are countries like USA, England, Norway, Australia and Switzerland. This goes to show that no particular efforts beyond the ones in other OECD countries have been made in the Netherlands and Austria to reduce gender segmentation in education. The increasing demand for workers with mathematics and science skills in a period of economic development, which is driven by technological change, implies that the career opportunities and the earnings potential of women are not going to be as good as those for men in the Netherlands and Austria.

*Table 8: Gender differences in mathematics and science*

*Mean mathematics/science achievement by gender in eighth grade (1995)*

| | Mean mathematics | | | Mean science | | |
|---|---|---|---|---|---|---|
| | Boys | Girls | Difference in means° | Boys | Girls | Difference in means° |
| Australia** | 528 | 533 | *5g* | 551 | 541 | *9b* |
| Austria** | 544 | 536 | *8b* | 566 | 549 | *18b* |
| Denmark** | 512 | 495 | *17b* | 495 | 464 | *31b* |
| Germany** | 512 | 509 | *3b* | 542 | 524 | *18b* |
| Netherlands** | 545 | 537 | *8b* | 570 | 550 | *21b* |
| Norway | 505 | 501 | *4b* | 534 | 521 | *13b* |
| Switzerland* | 548 | 544 | *5b* | 529 | 515 | *15b* |
| Sweden | 520 | 518 | *2b* | 543 | 528 | *15b* |
| England* | 509 | 505 | *4b* | 563 | 543 | *20b* |
| USA* | 502 | 498 | *4b* | 539 | 530 | *9b* |
| Country mean | 519 | 513 | *7b* | 532 | 515 | *18b* |

Source: *OECD* (1996), p. 216, 217. – ° b means boys score higher, g means girls score higher. – * Countries met TIMSS sampling requirements only partially. – ** Countries did not meet TIMSS sampling requirements.

## Expenditure on education and funding structure

The Dutch government has considerable influence upon the education system, even though it is to a limited extent the provider of education. The influence is on the one hand derived from the determination of rules and regulations, which govern the education system and from supervision of educational institutions, on the other from the fact that the major part of all types of education is either fully or partly subsidised by the government.

The OECD average total public expenditure on all institutions of education amounted to 5.1 percent of GDP in 1997 (OECD, country mean), compared to 4.8 percent 1990 (*OECD,* 2000A, p. 54). The Netherlands spent with 4.3 percent of GDP somewhat less than the OECD average and clearly less than Austria (6 percent, 1990: 5.2 percent). If private expenditure devoted to educational institutions is included, the OECD average goes up to 5.8 percent of GDP in 1997 (country mean, *OECD,* 2000A) and 4.7 percent in the case of the Netherlands. The differential between the Netherlands and Austria increases then even slightly from 1.7 to 1.8 percentage points indicating somewhat larger relative contributions of private resources in Austria.

If one includes direct public financial support of students (grants and loans) and private households to public expenditure on education, the OECD public and private average expenditure on education rises to 6.1 percent of GDP (country mean). In the Netherlands public financial support of households and students is relatively limited such that total expenditure of the public and private sector to education reaches only 5.1 percent of GDP, a rate similar to the United Kingdom and one of the lowest in the EU. Only Luxembourg, Italy and Greece have somewhat lower rates. The differential between Holland and Austria declines, however, to 1.6 percentage points, indicating

that Austria offers even less financial support to households or students to cover expenses linked with education (student grants) than the Netherlands.

*Table 9: Educational expenditure as a percentage of GDP for all levels of education by source of funds (1997 and 1990) in OECD countries*

| | 1997 | | | 1990 | |
|---|---|---|---|---|---|
| | Direct public expenditure for educational institutions | Total expenditure (public and private) for educational institutions | Total expenditure (public, private and internat. sources) for education institutions plus public subsidies to households | Direct public expenditure for educational institutions | Total expenditure (public and private) for educational institutions |
| Australia | 4.3 | 5.6 | 6.1 | 4.3 | 4.9 |
| Austria | 6.0 | 6.5 | 6.7 | 5.2 | – |
| Denmark | 6.5 | 6.8 | 8.2 | 6.2 | 6.4 |
| Finland | 6.3 | 6.3 | 6.9 | 6.4 | 6.4 |
| Germany | 4.5 | 5.7 | 5.9 | – | – |
| Netherlands | 4.3 | 4.7 | 5.1 | – | – |
| Sweden | 6.8 | 6.9 | 8.5 | – | – |
| Switzerland | 5.4 | 6.0 | 6.1 | 5.0 | – |
| United Kingdom | 4.6 | | | 4.3 | – |
| USA | 5.2 | 6.9 | 7.1 | – | – |
| Country mean | 5.1 | 5.8 | 6.1 | 4.8 | 5.2 |
| OECD total | 4.8 | 6.1 | 6.5 | 4.4 | 5.0 |

Source: *OECD* (2000A), p. 54.

Public expenditure on primary and lower secondary education makes up almost half of all the expenditure on educational institutions , public and private taken together, i.e., 2.3 percent of GDP – the OECD average was 39 percent in 1997, i.e., 2.4 percent of GDP. Pre-primary school expenditure amounts to 0.4 percent of GDP, the same as the average of OECD countries. It is necessary to add up nursery and compulsory school expenditure when making international comparisons, since there are differences in the entry age to compulsory education as well as the private/public financial contribution mix.

In the case of Holland, 57 percent of all expenses on education accrue to the 3 to 15 year olds; this is the same proportion as in Denmark but considerably more than in the OECD on average (46 percent) and also more than in Austria (49 percent). This results partly from demographic structures of the student population, partly from the funding system of education and the employment structure and system (employee status of teachers and other personnel – the public-private sector mix) in the education system.

Expenditure on upper secondary education amounted to 0.8 percent of GDP in 1997 (OECD average 1.2 percent, Austria 1.5 percent), i.e., 17 percent of total expenditure. Also tertiary education costs are very similar to the OECD average with 1.2 percent of GDP, the same as in Denmark. Austria spends somewhat more in relative terms on tertiary education (1.5 percent of GDP) even though the enrolment rate of 20 year olds is 10 percentage points lower in Austria than in Holland. This raises the question of cost-effectiveness of the Austrian tertiary education

institutions. In order to better judge the efficiency of the system, one has to take account of the different composition of tertiary education, however. Some study fields are more expensive than others due to more sophisticated technical equipment like computer facilities or laboratory work.

*Table 10: Educational expenditure from public and private sources for educational institutions as a percentage of GDP by level of education (1997) in OECD countries*

| | Pre-primary education | Primary and lower secondary education | Upper secondary education | Post-secondary non-tertiary education | Tertiary education | All levels of education |
|---|---|---|---|---|---|---|
| Australia | 0.1 | 2.8 | 1.0 | 0.1 | 1.7 | 5.6 |
| Austria | 0.5 | 2.7 | 1.5 | – | 1.5 | 6.5 |
| Denmark | 1.0 | 2.8 | 1.5 | – | 1.2 | 6.8 |
| Finland | 0.7 | 2.6 | 1.2 | – | 1.7 | 6.3 |
| Germany | 0.5 | 2.2 | 1.3 | 0.3 | 1.1 | 5.7 |
| Netherlands | 0.4 | 2.3 | 0.8 | – | 1.2 | 4.7 |
| Switzerland | 0.2 | 2.9 | 1.6 | 0.1 | 1.1 | 6.0 |
| United Kingdom | 0.4 | – | – | – | 1.0 | |
| USA* | 0.4 | – | – | – | 2.6 | 6.9 |
| Country mean | 0.4 | 2.5 | 1.3 | 0.1 | 1.3 | 5.8 |
| OECD total | 0.4 | 2.4 | 1.2 | 0.1 | 1.7 | 6.1 |

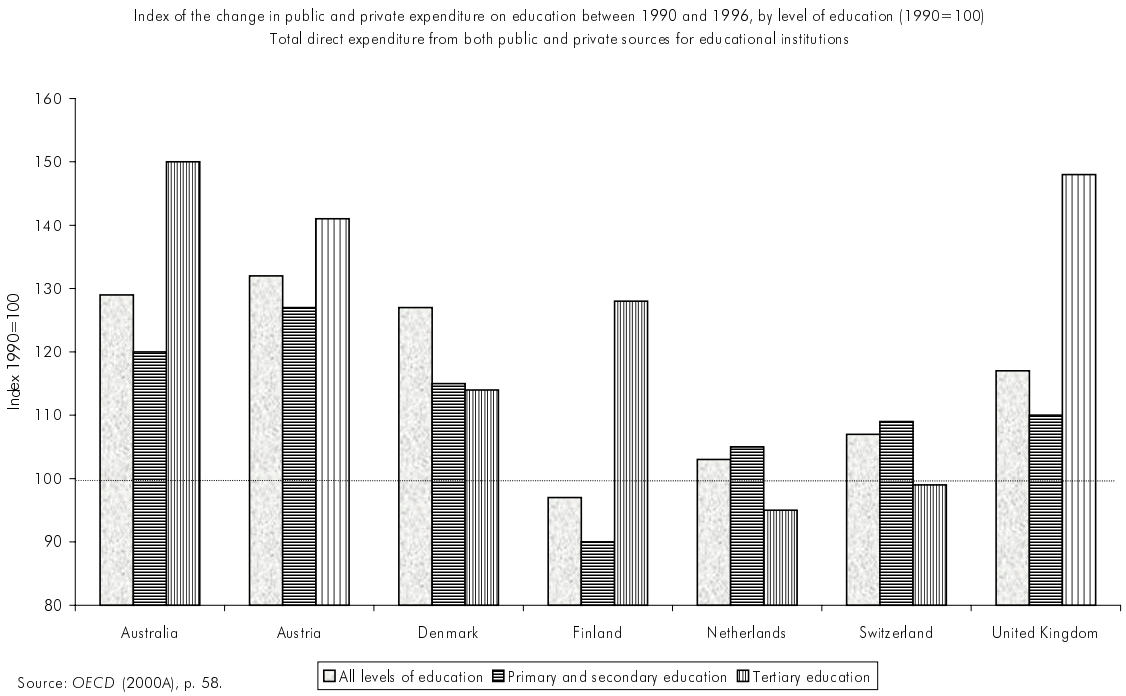
Source: *OECD* (2000A), p. 57. – *Post-secondary non-tertiary data included in tertiary education.

In the course of the 1990s public and private expenditure on all levels of educational institutions has remained fairly stable in the Netherlands. The overall cost development does not reveal, however, that this was not a universal trend but much rather the result of diverging cost trends in the different educational levels. While expenditure on primary and secondary educational institutions has increased between 1990 and 1996 by 5 percent, expenditure on tertiary educational institutions has fallen by 5 percent. This is very different to Austria. In Austria public and private expenditure on all major educational institutions has risen. The average increase amounted to 32 percent; the rise was particularly pronounced in the case of the university system (+41 percent), but still considerable – with +27 percent – in the primary and secondary education system. Different demographic dynamics, institutional factors as well as genuine educational policy differences account for the differences.

Another public cost component of education are grants and loans to students. This cost element adds another 0.4 percentage point of GDP to the educational bill. This is twice as much as in Austria measured in relative terms, i.e., a difference of 0.2 percent of GDP. This discrepancy arises from the free provision of education to pupils and university students in Austria, i.e., no fees are charged. In contrast, parents in the Netherlands pay fees for children over 16 years of age who are enrolled in secondary schools or in senior secondary education courses (1997-98: annual school fees per student were set at NLG 1,507). Up to the age of 16, education is free of charge in Holland, though some schools ask for voluntary parental contributions for extra-curricular activities.

Students at higher professional institutions (HBO) and universities pay tuition fees (annual tuition fees per student were set at NLG 2,575 for 1997/98 and at NLG 2,750 the year thereafter[9]).

*Graph 4: Change in public and private expenditure by level of education, in selected OECD countries (1990-1996)*




Source: OECD (2000A), p. 58.

On the basis of family income levels, the government grants subsidies to students and households; the subsidy may not only cover school fees but offer an additional allowance towards other costs of study in order to provide equal opportunity of education to disadvantaged and low income children. In addition, parents receive child benefit for children up to the age of 18[10], thereafter the same amount is paid out to the student. For those who continue with further education after the age of 18, the state pays an additional study cost allowance to the student on a monthly basis, the amount depending on the parents' income. The basic and supplementary grants to students are performance related. Student loans must be repaid within 15 years of the end of study for those who can afford it.

[9] For more details on fees and study costs see Netherlands Ministry of Education, Culture and Science, www.minocw.nl/english/edusyst/edn107.htm.

[10] Also Austria pays child benefits to parents as long as children attend school. In case of further education students receive child benefits until the age of 26, if they prove progress in their studies.

To sum up, one may say that the Dutch education system is efficient by the test of performance and cost. The performance of children in mathematics and science is good on the basis of international comparisons, and the cost of education is relatively low (measured in educational expenditure as a percentage of GDP). International comparisons can, however, only provide a limited insight into the costs to the state and the individual, since the funding system has to be seen in the context of the social security and tax system.

Expenditure per schoolchild or per student in higher education is below the OECD average. In primary and secondary education, this is largely explained by the high pupil-teacher ratios in Dutch schools. In primary schools the student/teacher ratio is not significantly above the OECD average (1998: 17.8 compared to 17.1 in the OECD) but clearly higher than in Austria (1998: 12.7), in secondary schools, however, the student/teacher ratio in the Netherlands was significantly higher than on average in the OECD (1998: 18.5 compared to 15.2). Austria has with 9.5 students per teacher in secondary education the lowest ratio of any OECD country. This may be taken as one factor of high quality standards of the Austrian educational system.

The international differences in the student/teacher ratios may derive from differing demographic pressures in different stages in the education system and the asymmetry in adjustment speeds, they may result, however, also from genuinely different educational policies. In Austria, the low student/teacher ratio in 1998 is not only the result of educational policy but also of more pronounced structural demographic change than in most other OECD countries[11], i.e., a larger and concentrated babyboom followed by a pronounced babyslump, and a rigid public sector employment system based on tenure which does not offer the employment flexibility of the private sector. This is one reason for the relatively high cost of secondary education in Austria.

*Table 11: Ratio of students to teaching staff by level of education, calculations (based on full-time equivalents) 1998*

| | Early childhood education | Primary education | Lower secondary education | Upper secondary education | All secondary education | All tertiary education |
|---|---|---|---|---|---|---|
| Australia | m | 17.9 | 14.7 | 16.8 | 15.5 | m |
| Austria | 18.6 | 12.7 | 9.3 | 9.7 | 9.5 | m |
| Finland | 11.9 | 17.7 | 11.0 | m | m | m |
| Germany | 23.2 | 21.6 | 16.3 | 13.6 | 15.5 | 12.4 |
| Netherlands | x | 17.8 | m | m | 18.5 | 18.7 |
| Sweden | m | 13.4 | 13.2 | 17.0 | 15.3 | 9.0 |
| Switzerland* | 18.7 | 16.3 | 12.1 | 17.6 | 14.0 | m |
| United Kingdom | 21.5 | 22.0 | 16.7 | 16.7 | 16.7 | 17.7 |
| United States | 18.0 | 16.5 | 17.1 | 14.7 | 15.9 | 14.6 |
| Country mean | 15.5 | 17.1 | 14.9 | 15.1 | 15.2 | 14.6 |

Source: *OECD* (2000A), p. 119. – * Public institutions only.

[11] The Netherlands and Nordic countries have had a much smoother demographic development, in particular less fluctuation in fertility, than Austria.

The Netherlands have quite consistently in every level of education an above average student/teacher ratio, also in tertiary education. This feature leads one to suspect that it is genuine educational policy. In 1998, the ratio in tertiary education amounted to 18.7 students per teaching staff compared to 14.6 in the OECD (country mean). This is the only educational level in which Austria has an above average student/teacher ratio. The ratio of 15.7 is, however, still lower than in the Netherlands. This may be the result of a different composition of tertiary education by study field than in other OECD countries, it may also be an indicator of different quality standards.

## Overview of the labour market of youth and young adults

While the total unemployment rate amounted to 4 percent in 1998 (*EC,* 2000) youth unemployment (15-24 year olds) amounted to 8.8 percent. This unemployment differential does not appear to be high, a closer look at the composition reveals major labour market problems of 15-19 year olds, however. They had an unemployment rate of 11.8 percent, whereby the group with the lowest educational attainment level, i.e., youth with no upper secondary education, has the highest unemployment rates (12.9 percent), while 15-19 year olds with upper secondary education only had an unemployment rate of 7.3 percent.

Austria, Germany and Denmark were the only OECD countries with lower unemployment rates of 15-19 year olds than the Netherlands. But in Austria and in Denmark the unemployment rate of youth with upper secondary education was higher than in the Dutch case, indicating that Dutch youth with nothing more than compulsory education has a much harder time to enter the labour market than equally nonskilled youth in Austrian and Denmark[12].

The attempts of the Dutch authorities to reduce unemployment of unskilled youth, in particular of drop outs, has to be seen in the context of relatively small differences between unemployment and welfare benefits on the one hand and the statutory minimum wage on the other. The low skilled workers are falling into a trap, a so-called productivity trap; they become and remain unemployed when the minimum wage is higher than the productivity of their work. At the same time, the high welfare payments offered to the unemployed or non-participants in relation to the disposable income from a job acts as an incentive to remain or become unemployed. The unskilled workers may thus fall into the so-called unemployment trap. In principle there are three ways to reduce the unemployment rate of the least educated:

- by reducing the replacement ratios in the benefit system,
- by reducing the wages at the lower end of the wage distribution,
- by increasing the educational attainment and skill level of the least educated.

[12] For a differentiated account of youth unemployment in the OECD, see *Marchand* (1999).

*Table 12: Youth unemployment rates by level of educational attainment and age group (1998)*

| | Below upper secondary education | | | Upper secondary and post-secondary non-tertiary education | | | Tertiary-type B | | Tertiary-type A and advanced research programmes | | All levels of education | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ISCED 0/1/2 | | | ISCED 3/4 | | | ISCED 5B | | ISCED 5A/6 | | | | |
| | 15-19 | 20-24 | 25-29 | 15-19 | 20-24 | 25-29 | 20-24 | 25-29 | 20-24 | 25-29 | 15-19 | 20-24 | 25-29 |
| Australia | 23.6 | 20.8 | 12.7 | 12.0 | 10.8 | 6.8 | 6.9 | 5.4 | 5.2 | 2.7 | 19.4 | 12.0 | 7.4 |
| Austria* | 8.4 | 7.6 | 10.9 | 8.8 | 4.3 | 3.2 | 4.1 | 3.8 | m | 4.2 | 8.6 | 4.7 | 4.4 |
| Denmark | 8.3 | 9.2 | 10.4 | 12.1 | 4.8 | 5.9 | 9.5 | 4.7 | m | 9.5 | 8.6 | 6.1 | 6.4 |
| Finland* | 34.5 | 29.1 | 23.5 | 31.8 | 20.7 | 15.4 | 15.9 | 12.2 | 13.5 | 8.5 | 33.6 | 21.3 | 14.8 |
| France | 23.8 | 37.2 | 26.7 | 26.5 | 22.8 | 15.4 | 14.7 | 10.5 | 18.4 | 11.1 | 24.4 | 25.6 | 16.1 |
| Germany | 6.9 | 16.3 | 20.4 | 7.3 | 8.2 | 7.7 | m | 4.8 | m | 4.9 | 7.6 | 9.9 | 8.7 |
| Ireland** | 16.9 | 22.3 | 15.1 | 10.8 | 7.4 | 4.6 | 5.4 | 3.5 | 5.4 | 3.1 | 14.3 | 10.3 | 6.9 |
| The Nether-lands*** | 12.9 | 6.8 | 5.9 | 7.3 | 4.3 | 1.9 | x(5A/6) | x(5A/6) | 4.8 | 1.5 | 11.8 | 5.6 | 3.6 |
| Norway* | 26.0 | 13.2 | 9.1 | 13.1 | 8.0 | 5.0 | 5.9 | 3.1 | 8.7 | 5.3 | 16.0 | 8.6 | 5.6 |
| Spain | 40.9 | 29.4 | 24.6 | 42.5 | 32.2 | 21.9 | 31.7 | 19.5 | 43.6 | 28.6 | 41.2 | 31.9 | 24.3 |
| Sweden*** | 18.4 | 26.7 | 21.2 | 29.1 | 14.8 | 10.2 | 7.1 | 6.7 | 1.2 | 3.4 | 20.4 | 15.4 | 10.1 |
| U.K. | 29.6 | 24.5 | 19.8 | 13.1 | 9.9 | 7.3 | 6.1 | 2.5 | 6.8 | 2.9 | 15.5 | 10.1 | 7.0 |
| USA | 18.3 | 17.8 | 12.1 | 9.9 | 8.5 | 6.3 | 1.9 | 3.2 | 2.3 | 1.9 | 15.2 | 8.4 | 5.3 |
| Country mean | 22.1 | 18.9 | 15.2 | 20.9 | 13.6 | 9.0 | 10.8 | 7.1 | 13.8 | 7.7 | 20.2 | 13.8 | 9.2 |

Source: *OECD* (2000A), p. 271. – * Year of reference 1997. – ** ISCED 5B includes some ISCED 4. – *** ISCED 4 is included in ISCED 5B.

The first two options increase income inequality. The Netherlands have chosen a combination of all 3 instruments.

- The replacement rate of unemployment benefits has been reduced from 80 percent in the 1980s to 70 percent in the 1990s, the duration of unemployment benefit payments has been curbed in the 1990s. Eligibility criteria for social benefits have been made more restrictive and welfare recipients were obliged to take up work since 1996 (mutual obligation)[13].
- The linkage of the minimum wage to the development of average wages has been discontinued, which meant that the minimum wage dropped from 80 percent of the average wage in 1983 to 70 percent in the second half of the 1990s. Since welfare payments and the minimum unemployment benefit are linked to the minimum wage level, this meant automatically a fall in the relative income situation of the least skilled population (*Hemerijk – Kersbergen,* 1997).
- The third instrument was the creation of regional education centres (ROCs) since 1996 to upgrade the skills of workers to ensure labour productivity differentials which conform more closely to the wage differentials[14]. Upgrading of skills is one objective of active labour market

[13] For more detail see *OECD* (2000B), Eligibility Criteria for Unemployment Benefits, pp. 129-153.

[14] More about this rationale in general in the *OECD* (1999B) Jobs Strategy.

policies, another is to reduce marginalisation of certain groups of people in the society (inclusion strategy). It has been linked with an obligation on the part of the unemployed to either take up work or to undertake education and training measures.

## The value of education: Cost-benefit analyses

For practical purposes the most relevant economic indicator of the benefits of education spending to society is the marginal rate of return on the incremental resources allocated to education. The higher earnings which result from increases in human capital (measured by increasing expenditure in education and training) are the return on this investment and the premium for better skills and thus presumably higher productivity. Thus one may differentiate between economic rates of return to investment in human capital for the individual, the labour market in terms of productivity impact and for society, i.e., social rates of return to education.

Differences of wages may result from differences in investment in human capital. A normal rate of return on this investment lets one to expect to show up in a higher wage for higher education, i.e., the wage differences are compensating for foregone earnings during the time of education and direct cost of education beyond compulsory education. If rates of return to higher education are more pronounced than warranted by normal interest rates, this can be taken as an indicator of under-schooling in a society.

### *Individual rates of return*

Several studies on individual rates of return to education have been undertaken in the Netherlands (*Cörvers,* 1996; *Koning,* 1998; *Groot,* 1997; *Hartog,* 2000; *Hartog – Jonker,* 1998; *Hartog – Oosterbeek,* 1993; *Odink – Kunnen,* 1998). The unit of observation is the individual and the theoretical approach is an augmented specification of the standard human capital earnings function as proposed by *Mincer* (1974). The focus of research may differ. It may be centred around wage differentials due to education, experience and occupation, to differentials between the private and the public sector or between different industries; another focus is on the returns to enterprise related training.

An overview of relative earnings from employment by educational level in OECD countries (*OECD,* 2000A, p. 297), shows that there is a considerable difference in individual rates of return to education between countries.

The shortfall in earnings due to less than upper secondary education, i.e., of a skill level below ISCED 3/4, amounted to 16 percent in the case of the Netherlands in 1997 for the population 25 to 64 years of age. This is more than in Finland (3 percent), and Sweden (10 percent), it is fairly similar to Norway, France and Denmark, somewhat lower than in Germany (19 percent) and Australia (21 percent), but substantially lower than in countries like Switzerland (26 percent), the United States (30 percent) or the United Kingdom (36 percent).

The premium for tertiary education skills of ISCED 5 or 6 compared to upper secondary education skills was 37 percent, a much higher premium than the medium skills have relative to the unskilled workers. This return to higher education is fairly similar to Australia, Denmark and Norway, but higher than in Sweden. The returns to higher education are much more pronounced in Finland (86 percent), the U.K. and France (both around 68 percent), Germany (63 percent), and Switzerland (62 percent), however.

The wide international differences in the returns to higher education (mean annual average earnings before tax) reflect a number of factors:

- skill demands in the work force,
- the supply of workers at the various levels of educational attainment,
- minimum wage legislation – may cause the actual wage difference to be smaller than in a labour market with free mobility of wages, implying smaller differences in wages than in labour productivity,
- the coverage of collective bargaining agreements and the strength of unions,
- the range of work experience of workers with high and low educational attainment,
- the relative incidence of part-time work at different educational attainment levels.

The earnings differentials by education do not tell us the exact return to education. Neither are the net costs of higher education easy to calculate nor the net benefits of higher education. Costs of education are not entirely borne by the individual, just as the higher productivity of work is not only due to higher educational attainment of the individual.

In addition, individuals who have greater ability, tend to proceed with further education and training to a greater extent than less able ones (lower learning costs); and they may also get higher wages than the less able ones with the same educational background (*Griliches,* 1977). Besides, the cost of education includes not only direct costs but also opportunity cost such as foregone earnings[15].

Another aspect, the expected duration of employment over the working life cycle, introduces a measure of uncertainty through the choice of an adequate discount factor (subjective rate of interest) of expected lifetime earnings (wage return to education and experience). Clearly, standard regression techniques cannot incorporate all information and allow inferences about all parameters.

[15] Foregone earnings are not only an important part of individual or private costs but also of social costs in terms of foregone taxes and social security benefits. The progressivity of the tax system has to be taken into account, in order to calculate the net individual and social returns to investment in education and training over the life cycle.

*Table 13: Relative earnings of 25 to 64 and 30 to 44 year olds from employment by level of educational attainment and gender 1997*

*(ISCED 3/4 = 100)*

| | | Below upper secondary education ISCED 0/1/2 | | Tertiary-type B education ISCED 5B | | Tertiary-type A and advanced research programmes ISCED 5A/6 | |
|---|---|---|---|---|---|---|---|
| | | Ages 25-64 | Ages 30-44 | Ages 25-64 | Ages 30-44 | Ages 25-64 | Ages 30-44 |
| Australia | Men | 87 | 83 | 120 | 116 | 144 | 138 |
| | Women | 85 | 84 | 113 | 112 | 154 | 154 |
| | M + W | 79 | 75 | 103 | 101 | 136 | 131 |
| Denmark | Men | 86 | 86 | 124 | 121 | 139 | 139 |
| | Women | 88 | 88 | 119 | 115 | 136 | 144 |
| | M + W | 85 | 85 | 115 | 110 | 140 | 142 |
| Finland* | Men | 95 | 92 | 129 | 125 | 189 | 174 |
| | Women | 101 | 99 | 123 | 122 | 179 | 172 |
| | M + W | 97 | 96 | 121 | 117 | 186 | 173 |
| France** | Men | 88 | 88 | 130 | 137 | 176 | 175 |
| | Women | 80 | 81 | 132 | 138 | 161 | 168 |
| | M + W | 84 | 85 | 126 | 132 | 169 | 171 |
| Germany | Men | 88 | 87 | 106 | 108 | 156 | 144 |
| | Women | 87 | 84 | 111 | 110 | 156 | 159 |
| | M + W | 81 | 82 | 108 | 106 | 163 | 153 |
| Italy*** | Men | 73 | 77 | x(5A/6) | x(5A/6) | 173 | 161 |
| | Women | 76 | 77 | x(5A/6) | x(5A/6) | 129 | 133 |
| | M + W | 76 | 80 | x(5A/6) | x(5A/6) | 156 | 148 |
| Netherlands* | Men | 87 | 86 | x(5A/6) | x(5A/6) | 136 | 129 |
| | Women | 75 | 74 | x(5A/6) | x(5A/6) | 141 | 145 |
| | M + W | 84 | 84 | x(5A/6) | x(5A/6) | 137 | 132 |
| Norway | Men | 85 | 85 | x(5A/6) | x(5A/6) | 138 | 140 |
| | Women | 84 | 90 | x(5A/6) | x(5A/6) | 140 | 143 |
| | M + W | 85 | 87 | x(5A/6) | x(5A/6) | 138 | 138 |
| Sweden | Men | 88 | 88 | x(5A/6) | x(5A/6) | 135 | 135 |
| | Women | 89 | 87 | x(5A/6) | x(5A/6) | 125 | 121 |
| | M + W | 90 | 89 | x(5A/6) | x(5A/6) | 129 | 128 |
| Switzerland** | Men | 81 | 82 | 119 | 122 | 145 | 139 |
| | Women | 74 | 82 | 123 | 122 | 157 | 164 |
| | M + W | 74 | 79 | 137 | 140 | 162 | 156 |
| United Kingdom** | Men | 73 | 70 | 125 | 124 | 157 | 157 |
| | Women | 64 | 61 | 135 | 133 | 188 | 192 |
| | M + W | 64 | 63 | 125 | 125 | 168 | 172 |
| USA ** | Men | 69 | 67 | 113 | 114 | 183 | 182 |
| | Women | 62 | 60 | 127 | 130 | 180 | 191 |
| | M + W | 70 | 68 | 116 | 116 | 184 | 184 |

Source: *OECD* (2000A), p. 297. – * 1996. – ** 1998. – *** 1995.

Further, factors which affect the net rate of return to education are

1. the tax system – in the Netherlands taxes are highly progressive;
2. longer actual duration of education than the norm – this is relatively rare in the Netherlands; it results in the main from switching between educational paths;
3. contributions to pension schemes.

The first two factors diminish the rate of return to education, the third factor enlarges the return. All that said, the individual rate of return may actually be lower than the social rate of return, particularly in countries with solidaristic wage agreements and high welfare standards. Differences between micro and macro-economic rates of return should not get too large, however. A large positive discrepancy between individual and social rates of return may result in a higher rate of educational participation of individuals than is warranted in terms of total prosperity of the population, and a large negative discrepancy may reduce the incentive of the individual to continue with higher education thus hampering total productivity and economic growth.

Also, a differentiation of the rates of return by type of education is warranted in order to provide guidance for educational choices to individuals and to governments in formulating their educational policy.

The estimated rates of return which follow should be understood with these qualifications in mind.

Due to the flexibility of the school system and the frequent detours from educational paths developed by educational planners it is not easy to calculate returns to an additional year of education for the Netherlands. Therefore research in the Netherlands (*Koning,* 1998, *Odink – Kunnen,* 1998) tends to differentiate economic returns to an additional year of schooling by different educational paths, e.g., lower general secondary education (comparable to the AHS in Austria) to higher general secondary education (HAVO, VWO, comparable to the AHS in Austria) or to intermediate vocational education (MBO, comparable to BMS and BHS in Austria), or else from lower vocational secondary education (in Austria Hauptschule) to intermediate vocational education. The transition from upper secondary to tertiary education may also follow different trajectories, e.g., from higher general secondary education (VWO/HAVO, i.e., AHS in Austria) to university (WO) or higher professional education (HBO, Fachhochschule) or from intermediate vocational education (MBO) to higher professional education (HBO, Fachhochschule).

The calculations by Koning, Odink and Kunnen show that certain paths have substantial returns to education, in particular those in upper secondary general education streams, who continue with higher vocational/professional education (HBO). Transferred to the Austrian system it would mean that graduates from AHS and BHS, who continue with Fachhochschule, have the highest rate of return to education, i.e., 10 percent to 12 percent more than the group with nothing but compulsory education. The calculations are based on cross-sectional data for the year 1990.

Persons who follow less demanding educational streams, but who still take the 'fast' route, i.e., no detours in other types of education than the ones originally planned for intermediate achievement levels, do also fairly well in relation to compulsory school leavers. They received on average a rate of return on education of 3 to 5 percent.

No positive return to education beyond compulsory education was found in case of medium vocational education and training. These results are similar to Austria (mittlere Fachschule und Lehre).

Since the real long-term capital market interest rate in Holland amounted to some 2 percent in the 1980s, one may argue that further education was cost-effective.

*Table 14: Rates of return to education by educational trajectory, 1990*

*Some rate of return calculations in the Netherlands*

| Study | *de Boer – van Ingen* (1980) | *Odink – van Breemen* (1983) | *Koss-Fiszer* (1989) | *NEI* (1994) | |
|---|---|---|---|---|---|
| Year of reference | 1972 | 1979 | 1985 | 1990 | 1990 |
| Income difference fully attributed to education | Yes* | No** | Yes* | Yes* | No** |
| | | | Rates of return to education in percent | | |
| Return to upper secondary education – higher vocational education path | 7 to 9 | 3 to 4 | 9 | 5 | 2 |
| Return to upper secondary education – university education path | 11 to 13 | 6 to 7 | 13 | 5 | 3 |
| Lower vocational education followed by intermediate vocational education | | | 8 | 7 | 4 |
| Lower general secondary education followed by intermediate vocational education | | | 8 | 1 | 0 |

Source: *Koning* (1998), p. 65. – * Based on the assumption that the income differences between individuals are solely the result of education (100 percent). – ** Based on the assumption that only 60% of the income differences between individuals are the result of education.

According to *Groot* (1992), rates of return to higher education relative to compulsory educational attainment levels were stable in the period 1965-1985. Calculations by *Odink – Kunnen* (1998) show that the rates of return to university education fell from about 12 percent in the early to mid 1980s to 8 percent in the early 1990s, the turning point having been in 1989. Returns to HBO education (Fachhochschule), have declined over the same time span from originally 9 percent to 4 percent.

This is not unusual as *Psacharopoulos* (1985) points out. A decrease in the returns to higher education from 11 percent to 5 percent could be observed in the USA between 1940 and 1976; in the 1980s a lower turning point has been hit, however, and returns to higher education have picked up again reaching more than 12 percent in 1995. Compositional effects of university education may account for some of these developments.

*Hartog* (2000) points out that the mismatch between educational skills supplied and demanded may account for diverging trends. The argument is that at any point in time the realised matches between jobs and the skill requirements of these jobs and the actual skills supplied by the employee may differ to a certain extent. Even when allowing scope for substitution of different levels and types of education, there may be increasing mismatch over time between job requirements and skills acquired from schools, i.e., distributions of skills supplied by schools, which may depreciate over time as a result of demographic and technological ageing, and required by enterprises. A certain amount of overeducation and of undereducation may arise, overeducation occuring when actual schooling is higher than required, and undereducation when the contrary holds. The terms of overeducation and undereducation are referring to education as an input in the economic production process and thus take a productivity/efficiency point of view; the social or consumption aspect of education is not taken into account.

According to *Hartog* (2000) returns to overeducation are positive but smaller than to required education; returns to undereducation are negative, i.e., there is a penalty to pay for undereducation. It tends to be lower than the returns to overeducation, however, maybe a result of minimum wage legislation.

There is convincing evidence that the incidence of overeducation and undereducation fall with increasing age and experience. This may come about because an overeducated person may change jobs until the required and actual skills match; on the other hand the undereducated employee will get enterprise specific training until the match is satisfactory for both sides (wage maximising mobility behaviour). Thus one would expect that wages are related to educational attainment only in the case of labour force entrants, the further one moves away from the external labour markets the less can be expected that wages correlate with educational attainment and more with experience. Phases of unemployment will likewise complicate the picture of returns to education.

Thus changes in the distribution of skills on the supply side of the labour market and of skill requirements on the demand side may account for a falling or rising trend in returns to education in the different countries concerned. To quote *Hartog* (2000, p. 141): "The returns to education depend on the job, and hence, the earnings difference between individuals with different education is not constant." One should therefore not only look at mean levels of returns to education but also at dispersions.

### *Public and private sector rates of return to education*

In most economies there is a debate about differences in rates of return to education between the public and private sector. The same holds for the Netherlands. Under the assumption that costs of education do not differ for persons employed in the public or private sector in the Netherlands, one

may argue that public-private sector wage differences by educational attainment level provide insight into the differences of rates of return to education in the two sectors.

Until 1982 the index of growth of private sector wages was directly applied to public sector wages. After lifting the linkage, public sector wages fell relative to private sector wages, particularly at higher skill levels[16]. *Hartog – Oosterbeek* (1993) point out that this does not indicate that public sector employees are at a disadvantage to private sector employees, however. What is generally ignored in regression analyses which want to prove discrimination is that to work in the public sector is a choice variable (endogenous) and thus not comparable to being a member of a racial group (exogenous), which has to expect discrimination. Analyses in the United States (*Venti,* 1987) came up with a private/public sector wage differential of 4 percent for men. But only if the differential reached a treshold of 16 percent would men be enticed to switch to the private sector. Thus wages in the public sector could slip some ways before a scarcity of public sector labour supply would occur.

In order to test these findings in the case of Holland Hartog and Oosterbeek undertook differentiated surveys of public and private sector employees and found out that public sector employees have characteristics, which would not allow them to earn as much in the private sector as in the public sector and vice versa – private sector employees perform better in the private sector than they would in the public sector. Thus, every party would be worse off if they switched into the other sector. These results are correcting some less sophisticated earlier studies, which came to the conclusion that returns to the human capital variables, education and on the job training, are more favourable in the private sector than in the public sector (*Schippers,* 1986)[17].

### *Contribution of the educational system to labour productivity*

The expected benefit to society of post-compulsory education, is a higher level of productivity. It is not a simple matter to make comparisons of labour productivity over time and across countries (*Biffl,* 2001). Differences between GDP per capita, an indicator of the living standards of a country, and per working hour, an indicator of the competitiveness of the economy, arise, apart from the socio-economic development level of the economy, the technology and product-mix, the differences in the skill level of the work force, from differences in:

- annual working hours per worker,

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[16] Austria did not have any such automatic linkages; wages in the public sector, in particular at lower skill levels, had started to grow faster than those in the private sector from the mid 1970s onwards. As job instability in the private sector gained momentum in the second half of the 1980s, relatively small public – private sector wage differentials, if any, and public sector job security became a topic of public debate (*Biffl,* 1996).

[17] *Van Schaaijk* (1982, 1986) showed that there were considerable gender differences in average public and private sector wages: women earned more in the public sector in all age and educational groups, while men earned more in the public sector at lower educational attainment levels and less at higher educational levels. The situation is not dissimilar to Austria (*Biffl,* 1996, *Mitter,* 1994).

- the proportion of employed persons in the labour force,
- the activity rate and
- the proportion of the population of working age in total population.

If we look at the differences of GDP per capita, the Netherlands had, with an output (valued at current market prices using PPPs) of 22,887 USD in 1998, almost the same level of productivity, i.e., standard of living, as Austria with 23,073 USD. The Netherlands and Austria are in the middle of a ranking of OECD countries by GDP/capita. The countries with the highest GDP/capita are, apart from the special case of Luxembourg, the United States (30,394 USD, +25 percent versus Netherlands), Germany (27,569 USD, +17 percent) and Denmark (26,297 USD, +13 percent).

*Table 15: Employment, productivity and per capita output (GDP), 1998*

*Output valued at current market prices using PPPs, USD*

| | Output per employed person | Output per capita |
|---|---|---|
| Luxembourg | 64,742 | 34,701 |
| United States | 62,214 | 30,394 |
| Germany | 55,002 | 27,569 |
| Norway | 49,117 | 26,611 |
| Switzerland | 52,426 | 26,297 |
| Denmark | 48,682 | 26,297 |
| Canada | 47,112 | 24,106 |
| Japan | 65,053 | 24,103 |
| Belgium | 52,562 | 24,003 |
| Austria | 48,781 | 23,073 |
| Netherlands | 52,563 | 22,887 |
| Australia | 49,848 | 22,697 |
| Ireland | 55,585 | 22,429 |
| France | 57,440 | 22,089 |
| Italy | 62,187 | 21,999 |
| Finland | 50,474 | 21,677 |
| United Kingdom | 47,186 | 21,218 |
| Sweden | 47,029 | 21,162 |
| New Zealand | 40,193 | 17,801 |
| Spain | 50,129 | 16,743 |
| Portugal | 31,475 | 15,242 |
| Greece | 38,728 | 14,411 |

Source: *OECD* (2000B), p. 17.

GDP per employed person, however, is somewhat higher in the Netherlands than in Austria (+7 percent), equal to Switzerland and somewhat lower than in Germany (–4 percent), but quite a bit lower than in the United States (–15.5 percent). The differences in productivity arise, apart from technological and economic development levels and human and physical capital endowment, from a different age structure of the population, from different activity and employment rates. Differences in hourly labour productivity do not seem to be great. Even though the actual working hours per worker are known only with a high degree of uncertainty, evidence suggests that Austria

lags behind the United States by some 6 percent to 10 percent, is fairly even with Denmark, the Netherlands and Japan and surpasses the EU average by some 15 percent.

One has to bear in mind that a direct linkage of an individual's income or wage with a particular productivity level is difficult and conceptionally problematic. In any complex work relationship the output is the result of a division of labour, whereby every individual is allocated to those tasks which he or she is trained to do most effectively. The output is then more than the sum of all individual inputs and can thus not be attributed to a single unit but rather to the aggregate. As a result one may distinguish productivity levels at the micro-level for enterprises, at the meso-level for industries and at the macro-level as done in Table 15.

Analyses of enterprise data in the Netherlands by Gelderblom and de Koning (*Koning,* 1998, p. 72) show that the average wage level in companies rises with rising proportions of employees with higher education; the correlation with productivity is not that obvious though. A clear linkage can be established, however, between productivity increases at enterprise level and intracompany training, while not having much effect on wages[18].

Analyses at industry level (in *de Koning,* 1998, quoting Gelderblom's research) shows that productivity tends to rise most in case of an increasing number of employees with higher education (university or Fachhochschule, HBO). The productivity increases linked to intermediate education are lower and have been declining between the 1970s and mid 1980s and stabilised then. This is not dissimilar to the Austrian experience, where the differential between incomes for compulsory school leavers and medium vocational educational school leavers has dwindled.

### *Social rates of return*

The individual rates of return may differ considerably from the social rates of return.

*Koning* (1998) calculates social rates of return of post-compulsory education for the Netherlands in three steps of cost-benefit analyses.

1. Net income from employment for persons with more than compulsory education are calculated, i.e., direct costs (no opportunity costs) of higher education are deduced, and compared with employment income of unskilled workers.
2. The cost of higher education to society is calculated and added to the individual cost (assumption that the individual pays for all education beyond compulsory education).

[18] For a more detailed account see the contribution by Isaac on Australia, chapter on enterprise-based training: productivity and wage effects.

3. Social rates of return are then defined as: returns based on gross incomes minus the total cost of education. It shows the benefit of educating an additional person with average characteristics in a particular type of post-compulsory education, assuming average costs.

*Table 16: Individual and social rates of return of various education paths*

| Education path | | | | |
|---|---|---|---|---|
| Type of lower secondary education | Type of upper secondary education and beyond | Individual rates of return in percent | Individual rates of return if the individuals were responsible for the public expenses related to education and study financing in percent | Social rates of return in percent |
| LGSE | HGSE | 5 | 3 | 5 |
| LGSE | IVE | 0 | – 2 | 0 |
| LGSE | HGSE-HVE(t) | 4 | 1 | 3 |
| LGSE | HGSE-HVE(e) | 6 | 2 | 5 |
| LGSE | HGSE-HVC( c ) | 3 | 0 | 1 |
| LVE | IVE | 4 | 1 | 4 |
| LVE(t) | IVE-HVE(t) | 6 | 2 | 5 |
| LVE(e) | IVE-HVE(e) | 8 | 4 | 6 |
| LVE( c ) | IVE-HVE ( c ) | 6 | 2 | 4 |
| HGSE | HVE(e) | 7 | 3 | 5 |
| HGSE | HVE(t) | 4 | 0 | 2 |
| HGSE | HVE( c ) | 1 | – 2 | – 1 |
| HGSE | IVE-HVE(t) | 0 | – 2 | – 1 |
| HGSE | IVE-HVE(e) | 2 | – 1 | – 1 |
| HGSE | IVE-HVE( c ) | -3 | – 5 | – 4 |
| HGSE | PUE-UE | 4 | 1 | 3 |
| PUE | UE | 3 | 0 | 2 |
| IVE(t) | HVE(t) | 5 | 1 | 3 |
| IVE( c ) | HVE ( c ) | 2 | – 1 | 1 |
| HVE | UE | 5 | 1 | 3 |

Source: *Koning* (1998), p. 68.

HGSE = higher general secondary education
HVE = higher vocational education
IVE = intermediate vocational education
LGSE = lower general secondary education
LVE = lower vocational education
PUE = pre-university education (VWO)
UE = university education (WO)
(t) = technical
(e) = economic/commercial
(c) = community services (tourism)

Table 16 provides an overview of the results. The results indicate that the social rates of return are in general positive except in those cases, where lateral education trajectories are taken (Koning calls them 'side-steps') and not the vertical higher education and training path. General upper secondary education and afterwards higher professional education (HBO) score best, unless higher vocational education is in the field of social and hospitality services, both from the point of an individual as well as social rate of return. Very high individual and social returns can be reaped, if pupils with a lower vocational education stream in lower secondary education continue directly with intermediate vocational education (MBO) – independent of the choice of technical, commercial and social services streams.

An interesting conclusion can be drawn from the calculation of rates of return to education to the individual, given the public sector subsidy to covering the cost of education on the one hand, and, on the other, rates of return in a situation where the individual would have to bear the total cost of education. In the latter case private returns to education are so small that they would not provide any incentive to pursue higher education. This result implies that a major shift away from the current government finance of higher education to private finance, would have the undesirable result of undereducation of the population.

A methodological caveat ought to be stated, however, namely the problem of using cross-sectional data, i.e., data at a particular point in time, and calculating rates of return to educational trajectories, educational programmes or types of school, assuming that the pattern of income by type of school does not change over time, whereas in reality the employment opportunities and wage expectations may change over time for the different educational levels. Many aspects of working life change either as a result of short-term demand and supply fluctuations, e.g., cyclical fluctuations, or as a result of longer term structural supply and demand changes. This time aspect cannot be captured in cross-sectional data, of course. It is a matter of empirical research to find out if and to what extent entry into the labour market as an unemployed in a period of economic decline, with high and rising unemployment, has an impact on the rest of the working career. Longer term structural change is also important, e.g., changes in the structure of education, the relative costs of education, but also a change in the demand structure for different types of education, e.g., due to technological change.

## The concept of lifelong learning

There is growing recognition across OECD countries of the importance of investment in human capital through lifelong learning. Adaptation of the knowledge and skills of society can only partially be achieved by the adaptation of curricula of initial education. Continuing education and training is necessary to adapt the skills of adults to the changing needs of an economy in progress and to repair or complement previously received education and training (second chance).

The concept of lifelong learning is not new. An *OECD* (1973) publication proposed lifelong learning (recurrent education) "to provide better opportunity for individual development, greater education and social equality, and better interplay between the education and other social sectors, including a better contribution to the potential for necessary economic growth" (*Recurrent Education Strategy for Lifelong Learning*, p. 48). But the context, in which the Netherlands and other OECD countries are discussing lifelong learning now is new (see *Hake et al.,* 1999, *Baaijens et al.,* 1998). It is an element of EU policy, which strives to adapt the socio-economic structures of the member countries to the needs of a global economy and of an information society.

The Netherlands have participated in the International Adult Literacy Survey (IALS), which provides relatively recent internationally comparable information on the incidence, duration and nature of

continuing adult education (*OECD,* 1998, pp. 204-220). According to this survey 36 percent of all persons between 25 and 64 participated in the 12 months preceding the survey in some form of education or training (1994-95). This participation rate was equal to the one in Australia. It was, however, somewhat lower than in Switzerland, the United States and the United Kingdom, which had participation rates ranging from 42 percent to 45 percent. The OECD country with the highest participation in education and training was Sweden with 54 percent. The major part of education and training tends to be job-related.

Participation in education and training is declining with age. While 46 percent of the 25-34 year olds participated in some education and/or training measure in the Netherlands, only 16 percent of the 55-64 year olds undertook such activities. This pattern is fairly universal as international comparison shows.

The pattern by gender is not so clear, however. While Dutch women participate to a lesser extent in education and training than men (34 percent versus 38 percent), similarly in the United Kingdom (44 percent versus 46 percent), Switzerland (40 percent versus 44 percent), and Australia (34 percent versus 37 percent), the opposite is true in the case of Sweden (56 percent versus 53 percent). In contrast, no gender difference was recorded in the United States.

The mean number of hours of education and training per adult is higher in the Netherlands than in the other countries.

*Table 17: Participation rate in education and training of the 25-64 year olds by gender and age group 1994-95*

| | | Age 25-34 | Age 35-44 | Age 45-54 | Age 55-64 | All |
|---|---|---|---|---|---|---|
| Australia | M + W | 42 | 40 | 32 | 20 | 36 |
| | Men | 46 | 40 | 33 | 20 | 37 |
| | Women | 38 | 41 | 32 | 20 | 34 |
| Netherlands | M + W | 46 | 41 | 32 | 16 | 36 |
| | Men | 51 | 42 | 36 | 13 | 38 |
| | Women | 42 | 40 | 29 | 20 | 34 |
| Sweden | M + W | 56 | 61 | 58 | 38 | 54 |
| | Men | 57 | 58 | 54 | 37 | 53 |
| | Women | 54 | 64 | 62 | 40 | 56 |
| Switzerland | M + W | 52 | 45 | 39 | 25 | 42 |
| | Men | 55 | 43 | 39 | 29 | 44 |
| | Women | 47 | 46 | 40 | 22 | 40 |
| United Kingdom | M + W | 54 | 54 | 42 | 23 | 45 |
| | Men | 57 | 52 | 44 | 23 | 46 |
| | Women | 51 | 55 | 40 | 24 | 44 |
| United States | M + W | 46 | 46 | 44 | 28 | 42 |
| | Men | 45 | 49 | 45 | 23 | 42 |
| | Women | 46 | 44 | 43 | 32 | 42 |

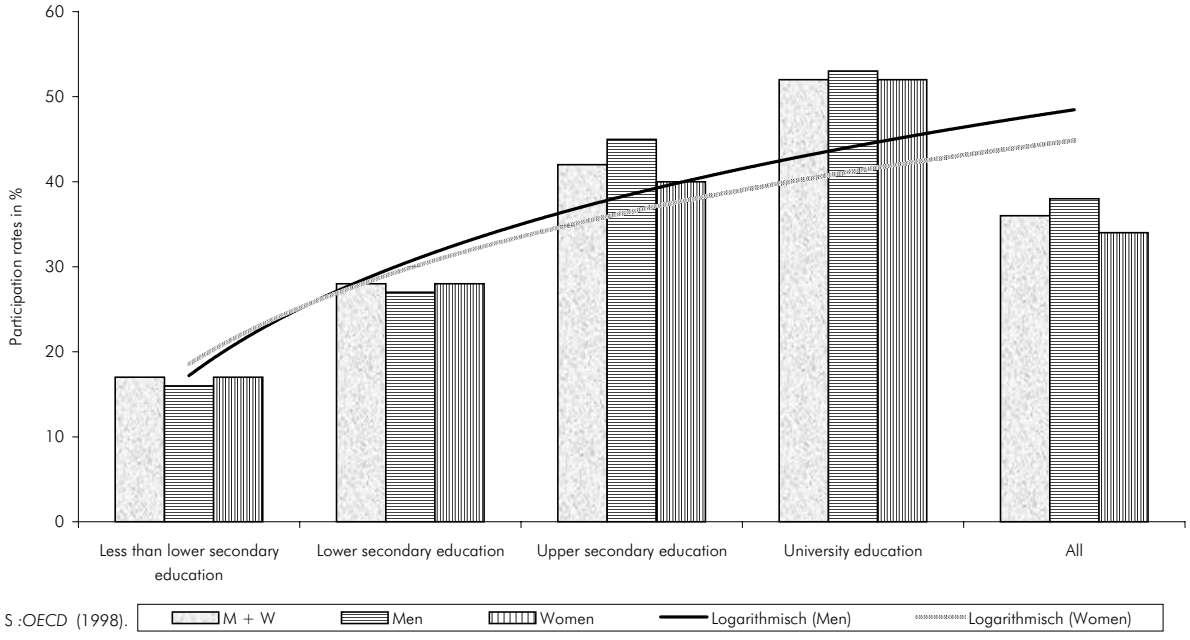
Source: *OECD* (1998), p. 214.

The proportion of the population between 25 and 64, which engaged in continuing education and training (CET)[19] during the year before the survey was higher for employed than for unemployed (43 percent compared to 39 percent).

Research shows that initial education has an important role to play in lifelong learning. People who have completed general upper secondary education take part in enterprise training to a larger extent than people with vocational upper secondary education or apprenticeship training. This is one reason for the high returns to the general initial education stream over the working life cycle compared to other educational paths.

The IALS survey indicates a clear positive correlation between continuous education and training and the educational attainment level of the population. While only 17 percent of all 25-64 year olds with less than lower secondary education undertook some education and training in the 12 months preceding the survey, 28 percent of those with compulsory education did so, 42 percent of those with upper secondary education and 52 percent of university graduates.

*Graph 5: Percentage of 25-64 year olds participating in education and training by highest level of educational attainment and gender (1994-95)*




S :*OECD* (1998).

[19] CET refers to all kinds of job related education and training, organised, financed or sponsored by authorities, provided by employers or self-financed.

The motives for public funding of lifelong adult education are the same as for initial education, in particular, upskilling of the work force to increase productivity of labour and to counter marginalisation of certain groups of workers. In the 1990s, the awareness of an increasing mismatch of labour demand and supply of skills as a result of technological change on the one hand, and the ageing of the work force on the other, has given new impetus to the further development of adult education and innovations in the processes of lifelong learning. The reform of adult education (WEB) is an integral part of the labour market reforms of the 1990s. The major objective of the reform is to reduce the differential of unemployment rates by educational level, to include persons with lower educational attainment in the labour market and to raise the retirement age.

## Conclusion

The Netherlands have adopted a number of mutually reinforcing policies to draw the country out of the economic malaise of the 1980s and to face the competitive globalised world of the 1990s. The result has been a remarkable recovery in economic growth and employment, accompanied by a substantial increase in labour market participation, especially of women, while rampant inflation has been replaced by price stability.

The main policy changes to bring about these results have been in the application of fiscal, welfare and labour market measures. The changes in education and training policy have been few and minor, reliance being placed on the existing system to provide the necessary support for the other policy changes noted.

A characteristic feature of the Dutch education system is the emphasis on vocational education manifest by the provision of general and vocational streams early in the life of students. At the lower secondary education stage, there are four streams, two in general education and two in vocational education, the two levels in each being differentiated by an upper and lower standard of performance. These streams continue into upper secondary education, after which only two streams proceed through into tertiary education. However, the system is sufficiently flexible to allow students to cross streams, although such cross-over extends the transition from education to work and adds to the private and social costs of education. It is also noteworthy that although compulsory full-time education ends at 15-16, part-time compulsory education applies until the age of 18.

The main changes which have been made in recent years are in lowering the age of compulsory education to 5; extending the opportunity for adult education and training; and creating regional education centres to facilitate the upgrading of skills. Further, there has been little increase in overall expenditure on education, in contrast to other OECD countries (Graph 4); and the proportion of total expenditure on education in GDP is below that of other countries (Table 9).

Greater skill obviously improves productivity to which the education system is designed to contribute, at least in part. But the statistical measures of productivity are a function of a number of factors other than the skill of employees. In short, a larger supply of skill may not be a sufficient condition for increasing productivity.

The pay differentials for skill, which appear to be roughly in line with those of a number of countries, show that there is an immediate advantage to employees with skills. However, because both costs and returns need to be considered, a better long term economic test of the worthwhileness of education at a particular level or occupation, is in the rates of return from such education or for any extension to further education. Generally, the estimated rates of return, both private and social, are positive, suggesting that both individuals and the community may expect to derive economic gains from more education and training.

However, there is evidence of over and under-education in certain occupations – the former results in lower but positive rates of return, while the latter results in negative rates of return. Further, certain educational paths allow greater returns than others. Thus, those in upper secondary general education streams who proceed to higher vocational/professional education, do much better than those who only have compulsory education.

The statistics also show that, in line with the experience of certain countries including the United States in an earlier period, rates of return to university education have fallen in the 1990s.

The Dutch system may be said to be efficient in the limited sense that a smaller proportion of GDP is devoted to education expenditure while on international tests of competence in mathematics and science, Dutch school children perform reasonably well. However, this can only be regarded as a superficial method of evaluating efficiency. Nevertheless, for the present, there are apparently no clear signs of inadequacies in the system's capacity to deliver a larger output of skills. Further, given its geographical position, the Netherlands also has the option of drawing skills from adjacent countries.

The more immediate challenge of the education system is to ensure that not only the unduly large supply of unskilled labour but also the high proportion of part-time workers, especially women, are willing and able to acquire the skills needed for their absorption into full-time employment and better wages.

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# Chapter 4

# COST BENEFIT ANALYSES OF THE EDUCATIONAL SYSTEM

# UNITED KINGDOM

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## Introduction

The U.K. emerged from a period of economic instability of the 1970s and 1980s to one of solid economic growth, falling unemployment, bringing the rate of unemployment below the European average, and low inflation in the 1990s (Graph and Table 1). As with most other countries, growth slowed down at the end of the decade. In the past, economic upturns were constrained by emerging skill shortages, wage inflation and external factors. To address these weaknesses, the government introduced wide ranging reforms in the education and training systems, starting in the 1980s, targeted at raising low rates of transition from compulsory education to upper secondary education to increase the vocational skill base of youth.

There is a perceived shortage of skills, particularly intermediate vocational ones, in addition to important skill gaps in certain localities and sectors, especially in IT, engineering and construction. A Skills Task Force was appointed in 1998 to review skills shortages and to advise how education and training can assist to alleviate such shortages.

The shift in the structure of industry from manufacturing to service industries, has had an important impact on the nature of the demand for labour, with consequential effects on older workers but also on those entering the labour market. Young people who, by their education and training or lack of education and training, have not adapted sufficiently to the change in demand, have had difficulty finding work or are relegated to areas of insecure, low skilled and low paid jobs. While the average unemployment rate has declined from 7.1 percent in 1990 to 6.1 percent 1999, the unemployment rate of youth 15-24 has increased from 10.1 percent to 12.3 percent over that time span. In the face of an ageing population, increasing labour market problems of youth appear paradoxical.

The Labour Government was returned to power in 1997 with a strong commitment to an expansion of education and training – in the words of the Prime Minister: 'Education is the best economic policy we have.' But it has coupled the economic case for such expansion with the need for greater social inclusion and cohesion by reducing unemployment, especially among young

people, and reversing the trend towards greater inequality in income distribution. One of its first actions on the education front was to publish a Green Paper in 1998 setting out its vision of what it called 'The Learning Age' (DfEE 1998). The flavour of what it said is evident in its opening paragraphs:

> We are in a new age – the age of information and of global competition. Familiar certainties and old ways of doing things are disappearing. The types of jobs we do have changed as have the industries in which we work and the skills they need. At the same time, new opportunities are opening up as we see the potential of new technologies to change our lives for the better. We have no choice but to prepare for this new age in which the key to success will be the continuous education and development of the human mind and imagination . . . .
>
> Our single greatest challenge is to equip ourselves in this new age with new and better skills, with knowledge and with understanding.
>
> Our vision of the Learning Age is about more than employment. The development of a culture of learning will help to build a united society, assist in the creation of personal independence, and encourage our creativity and innovation.

An earlier Government White Paper, *Excellence in Schools* (DfEE July 1997), which complements the Green Paper, had admitted that

> The problem with our education system is easily stated. Excellence at the top is not matched by high standards for the majority of children. We have some first class schools and our best students compare with the best in the world. But by comparison with other industrialised countries, achievement by the average student is not good enough.

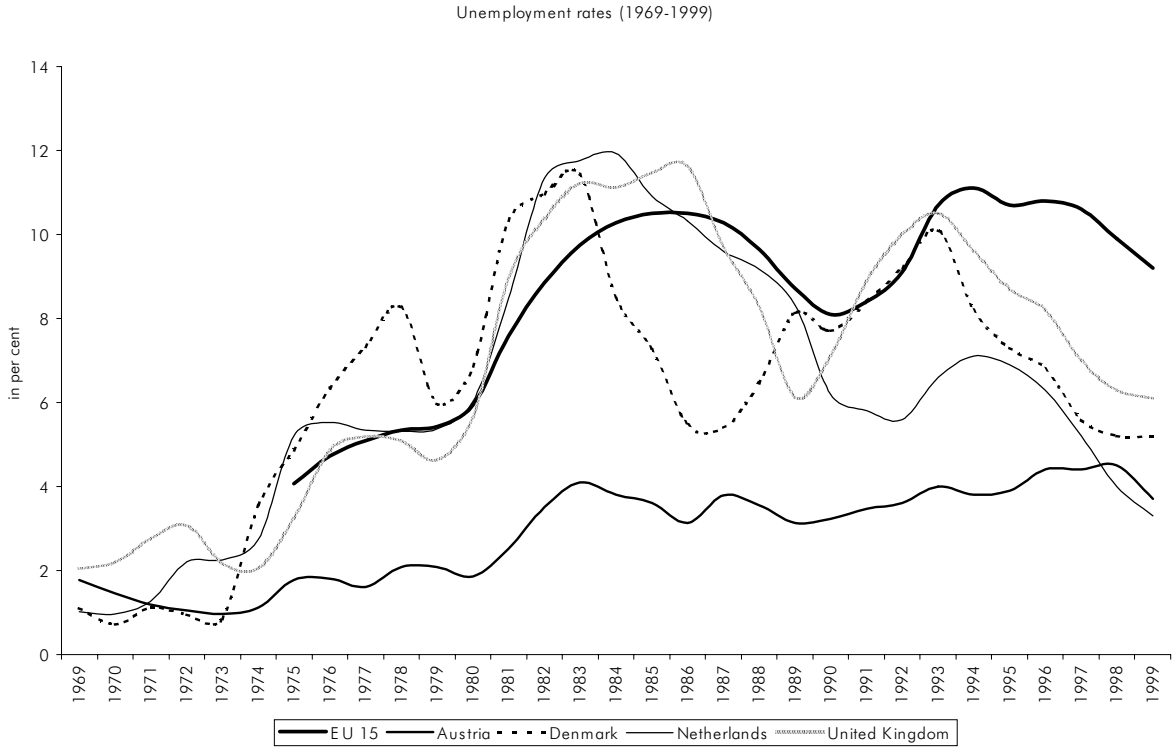
*Table 1: Macroeconomic indicators: output, employment, productivity and labour costs*

*Annual average percentage change*

| | 1975-1985 | 1985-1990 | 1990-1999 | 1994-1999 | 1975-1985 | 1985-1990 | 1990-1999 | 1994-1999 |
|---|---|---|---|---|---|---|---|---|
| | European Union | | | | United Kingdom | | | |
| GDP growth | 2.3 | 3.2 | 1.8 | 2.3 | 1.9 | 3.3 | 2 | 2.6 |
| Number employed | 0.1 | 1.4 | 0.2 | 0.9 | – 0.2 | 1.8 | 0.2 | 1.4 |
| Average hours worked | – | –0.4 | – 0.3 | – 0.3 | – | 0.2 | – 0.4 | – 0.2 |
| GDP/number employed | 2.2 | 1.7 | 1.6 | 1.3 | 2.2 | 1.5 | 1.8 | 1.2 |
| GDP/total hours worked | – | 2.1 | 1.9 | 1.6 | – | 1.2 | 2.2 | 1.5 |
| Consumer prices | 10.3 | 4.4 | 3 | 2.1 | 10.7 | 5.9 | 3.1 | 2.8 |
| Average earnings | 11.6 | 6.4 | 4.1 | 3 | 11.8 | 8.4 | 4.8 | 4.2 |
| Average real earnings | 1.2 | 1.9 | 1.1 | 0.8 | 0.9 | 2.4 | 1.7 | 1.4 |
| Average real labour costs | 1.5 | 1.4 | 1.1 | 0.8 | 0.9 | 2.4 | 1.4 | 1.2 |
| Real unit labour costs | – 1.1 | – 0.8 | – 0.7 | – 0.7 | – | – | – | – |

Source: *European Commission* (2000), p. 101, 103.

*Graph 1: Unemployment development in international comparison*




The educational attainment level of the adult population of working age is an indicator for the stock of human capital. It highlights the education policy of the past and is a point of reference for more recent education policy. Some indication of where the U.K. stood in the international league in educational attainment in 1998 is in labour force participation rates by level of educational attainment (Table 2). For all levels of education and also for upper secondary and post-secondary non-tertiary education, puts the U.K. slightly higher than Austria and the OECD country average for men, but a great deal higher for women. However, for those with less than upper secondary education, the country positions are reversed for men, but for women, the figures for Austria and the OECD average are slightly lower than in the U.K.

Another view and one more telling on the skill output of education, is shown in Table 3. It shows that, in 1998, for the 25-64 age population group, as compared with the U.K., the proportion of those with at least upper secondary education, is substantially higher for both men and women in Austria and a little less so for the OECD average. This is also true for the various age sub-groups. However, the reverse holds for those with at least tertiary type A[1] attainment. These figures suggest

[1] Type A (ISCED 5A) programmes are largely theory based and are designed to provide minimum qualifications for entry to advanced research programmes and professions with high skill requirements.

that there is a greater concentration of vocational skills in Austria and other OECD countries than exists in the U.K., a fact which the present U.K. policy seeks to correct by its education and training policy. The distribution of educational attainment levels of the population is more polarised in the U.K. than in Austria or Denmark, with an above average share of unskilled on the bottom end of the distribution and an above average share of persons with university education on the top of the distribution. This is starkly shown in Table 4 (taken from *OECD,* 1995, p. 53). Although the figures relate to 1990, it illustrates dramatically the comparatively low proportion of those with craft skills and the high proportion of those with no skills in the U.K.

*Table 2: Labour force participation rates by level of educational attainment and gender 1998 (for 25-64 year olds)*

| | | Below upper secondary education ISCED 0/1/2 | Upper secondary and post-secondary non-tertiary education ISCED 3/4 | Tertiary-type B ISCED 5B | Tertiary-type A and advanced research programmes ISCED 5A/6 | All levels of education |
|---|---|---|---|---|---|---|
| Australia | Men | 81 | 89 | 92 | 94 | 87 |
| | Women | 55 | 66 | 78 | 82 | 64 |
| Austria* | Men | 72 | 86 | 89 | 93 | 84 |
| | Women | 48 | 68 | 81 | 85 | 63 |
| Denmark | Men | 77 | 86 | 92 | 95 | 86 |
| | Women | 56 | 79 | 87 | 96 | 76 |
| Finland* | Men | 69 | 86 | 88 | 92 | 81 |
| | Women | 60 | 78 | 85 | 89 | 75 |
| France | Men | 77 | 89 | 93 | 91 | 85 |
| | Women | 57 | 76 | 83 | 83 | 69 |
| Germany | Men | 77 | 84 | 93 | 88 | 85 |
| | Women | 46 | 69 | 81 | 83 | 66 |
| Netherlands** | Men | 78 | 88 | x(5A/6) | 91 | 86 |
| | Women | 44 | 70 | x(5A/6) | 82 | 62 |
| Norway* | Men | 79 | 91 | 96 | 93 | 90 |
| | Women | 61 | 81 | 93 | 90 | 80 |
| Sweden** | Men | 80 | 89 | 88 | 93 | 87 |
| | Women | 67 | 83 | 86 | 92 | 81 |
| Switzerland | Men | 90 | 94 | 97 | 96 | 94 |
| | Women | 65 | 75 | 85 | 84 | 74 |
| United Kingdom | Men | 68 | 88 | 91 | 93 | 86 |
| | Women | 52 | 76 | 85 | 87 | 73 |
| United States | Men | 75 | 88 | 92 | 94 | 88 |
| | Women | 50 | 73 | 82 | 82 | 73 |
| Country mean | Men | 78 | 89 | 93 | 93 | 87 |
| | Women | 51 | 69 | 80 | 83 | 64 |

Source: *OECD* (2000A), p. 269. – * Year of reference 1997. – ** ISCED 4 is included in ISCED 5B.

*Table 3: Percentage of the population that has attained a specific level of education, by age and gender 1998*

| | | At least upper secondary education[1] | | | | | At least tertiary-type A[2] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 25-64 | 25-34 | 35-44 | 45-54 | 55-64 | 25-64 | 25-34 | 35-44 | 45-54 | 55-64 |
| Australia | Men | 63 | 69 | 66 | 61 | 54 | 17 | 17 | 19 | 17 | 11 |
| | Women | 49 | 60 | 50 | 43 | 35 | 17 | 21 | 18 | 14 | 9 |
| Austria[3] | Men | 80 | 87 | 84 | 76 | 68 | 8 | 8 | 9 | 8 | 7 |
| | Women | 66 | 80 | 71 | 60 | 46 | 5 | 6 | 6 | 3 | 2 |
| Denmark | Men | 81 | 85 | 80 | 83 | 73 | 6 | 8 | 6 | 7 | 5 |
| | Women | 76 | 86 | 79 | 72 | 60 | 4 | 6 | 5 | 4 | 2 |
| Finland[3] | Men | 67 | 82 | 76 | 61 | 43 | 14 | 15 | 16 | 14 | 10 |
| | Women | 69 | 86 | 80 | 63 | 40 | 12 | 14 | 14 | 11 | 7 |
| Germany | Men | 89 | 89 | 90 | 89 | 86 | 17 | 15 | 19 | 20 | 15 |
| | Women | 79 | 86 | 84 | 78 | 66 | 11 | 13 | 14 | 11 | 5 |
| Netherlands | Men | 69 | 73 | 70 | 68 | 61 | 27 | 28 | 29 | 29 | 22 |
| | Women | 60 | 75 | 65 | 51 | 39 | 21 | 27 | 23 | 18 | 12 |
| Sweden | Men | 74 | 87 | 77 | 70 | 59 | 13 | 9 | 14 | 15 | 12 |
| | Women | 78 | 88 | 83 | 76 | 61 | 13 | 11 | 13 | 15 | 11 |
| Switzerland | Men | 87 | 92 | 86 | 87 | 83 | 19 | 20 | 19 | 20 | 18 |
| | Women | 76 | 85 | 79 | 72 | 60 | 9 | 11 | 11 | 7 | 4 |
| U.K. | Men | 70 | 68 | 72 | 72 | 64 | 17 | 18 | 18 | 17 | 12 |
| | Women | 50 | 55 | 51 | 47 | 39 | 14 | 16 | 15 | 13 | 9 |
| United States | Men | 86 | 87 | 87 | 87 | 80 | 28 | 26 | 27 | 32 | 26 |
| | Women | 87 | 89 | 89 | 88 | 79 | 25 | 29 | 26 | 26 | 18 |
| Country mean | Men | 64 | 72 | 67 | 61 | 50 | 15 | 16 | 17 | 16 | 12 |
| | Women | 58 | 72 | 63 | 52 | 38 | 12 | 16 | 13 | 10 | 6 |

Source: *OECD* (2000A), p. 37. – [1] Excluding ISCED 3C Short programmes. – [2] The category "at least tertiary-type A" includes tertiary-type A and advanced research programmes. – [3] Year of reference 1997.

*Table 4: Vocational qualifications in various European economies, around 1990*

*Percentage of economically active persons of working age*

| | Britain 1989 | France 1988 | Germany 1988 | The Netherlands 1989 | Switzerland 1991 |
|---|---|---|---|---|---|
| Degree | 11 | 7 | 11 | 8 | 11 |
| Technician | 7 | 7 | 7 | 19 | 9 |
| Craft | 18 | 33 | 56 | 38 | 57 |
| None | 64 | 53 | 26 | 35 | 23 |

Source: *OECD* (1995), p. 53.

## The education system

As noted above, the object of the present U.K. Government's education policy is not only to provide the skill base for sustained economic growth but also to ensure greater social inclusion of those who are disadvantaged by lack of adequate skill to enjoy greater job security and higher wages. However, this report considers mainly economic costs and benefits of education and training, in particular the relationship between investment in human capital and labour market

performance. The analysis is based upon a review of the relevant literature and interviews of planners of educational policy and researchers of educational outcomes in government departments and universities. The starting point of the analysis is a presentation of the educational system.

## Major building blocks of the education system of today

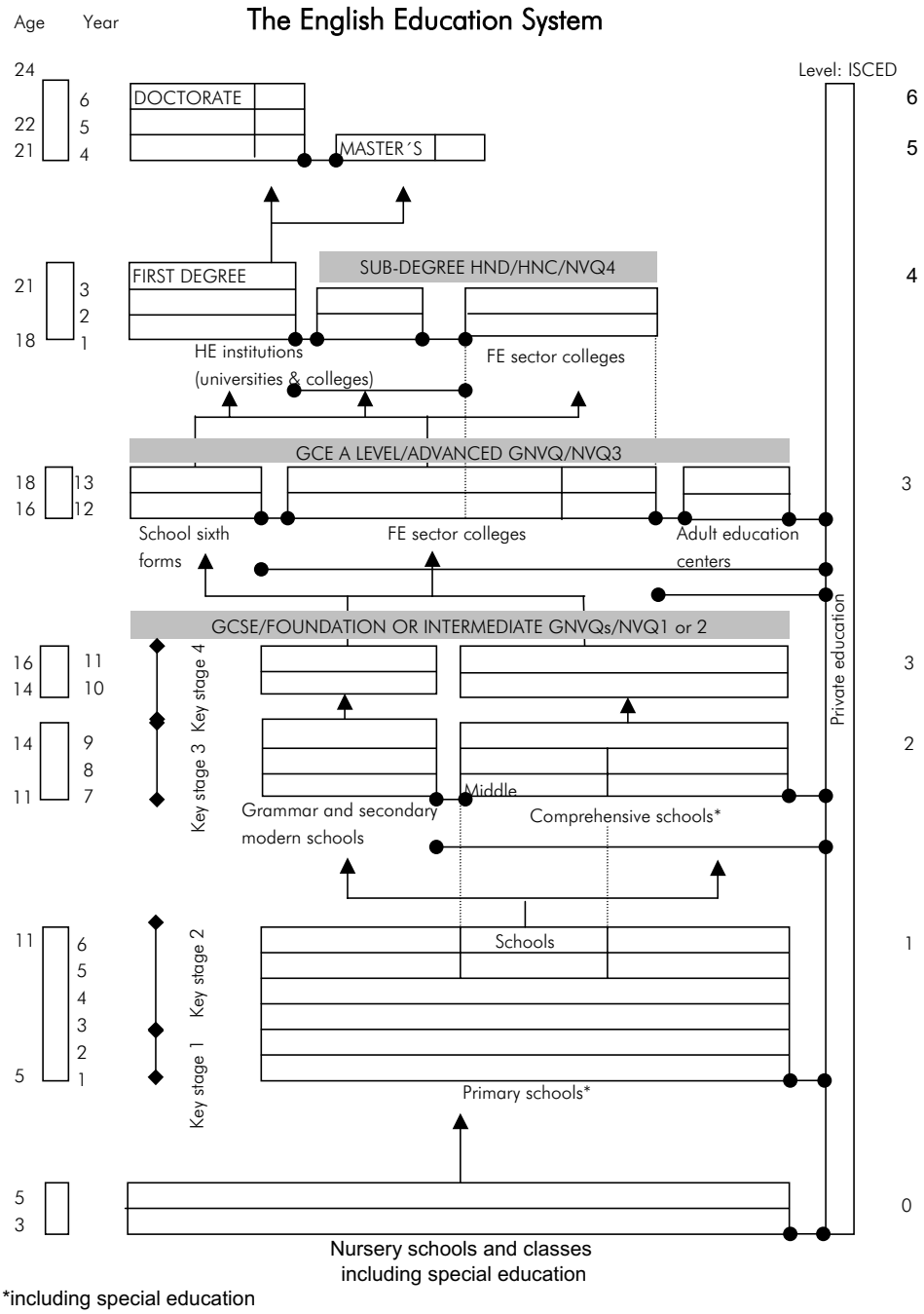
Education is compulsory from the age of 5 to 16, effectively until the end of upper secondary education, although a proportion of those who leave school at the age of 16 will not have obtained the upper secondary qualification. Apart from minor differences between England, Wales and Scotland, the structure of the education system of the U.K. is shown in the following four levels:

1. Six years of primary education, usually up to the age of 11, equivalent to ISCED 1
2. Secondary education, which is in two stages:
   - the first three years cover lower secondary education, rated approximately ISCED 2;
   - the next two years cover upper secondary education, rated approximately ISCED 3.

There are three types of schools. (1) The majority are known as 'comprehensive' schools. These generally provide academic courses although, partly as a result of the Government's greater emphasis on vocational education, vocational subjects have in recent years been added to the curriculum to cater for the 14 to 16 year olds who are disinterested in or do not have the capacity for academic subjects. (2) The Grammar schools teach exclusively academic subjects and generally take in those with higher ability. (3) Secondary Modern schools, on the other hand, cater for those with lower ability.

All pupils of compulsory school age in Government schools are required to follow a National Curriculum. At the lower secondary level the prescribed subjects are english, mathematics, science, technology, history, geography, art, music and physical education. At the upper secondary level, although there is flexibility in the range of courses available to be taken, the minimum requirement is english, mathematics, science, physical education, information technology, design and technology and a modern foreign language.

*Graph 2: Organisation chart of the education system*




Source: *OECD* (1996), p. 337.

The U.K. education system is credential or qualifications oriented. Those who pass the requisite academic subjects at the end of upper secondary education are awarded the General Certificate of Secondary Education (GCSE), while those who pass the requisite vocational subjects are awarded Foundation or Intermediate General National Vocational Qualification (GNVQ).

Most pupils attend government schools which do not charge tuition fees but some 7 percent attend fee-charging private schools.

3. Post-compulsory education and training consists of many pathways which are flexible and allow students to move sideways at certain stages of their course:

   - Those intent on the academic route with university education in mind, continue in sixth form in school for two years and obtain the General Certificate of Education (GCE) A Level Qualification.
   - Those with a general education interest who may or may not proceed to university or may have a vocational education in sight, can go to a Further Education (FE) College with the opportunity of obtaining the following alternative qualifications – GCE A Level, first year equivalents of university education, the General National Vocational Qualification (GNVQ), a broad-based vocational qualification emphasising 'core'[2] skills, or a more job-specific National Vocational Qualification (NVQ). The latter may be linked to apprenticeships. Full-time courses last 1-2 years. There are some 500 FE Colleges in the U.K. most of which offer diverse forms of full-time, part-time and distance education.
   - Work-based occupational training offer diverse training pathways:
     – Modern Apprenticeship (MA). This is a revival of a traditional but neglected area of training and is now being promoted as an 'elite' work-based pathway. Since 1995, it has been revamped, lifted in status and made more flexible, and is offered in a number of sectors of business, industry and commerce, leading to NVQ at ISCED 3 and above. It is designed for training 16-25 year olds (although it is also open to older persons) which includes the development of core skills. The normal duration of training is 3 years. For each sector, the training framework is designed by employers in conjunction with the relevant National Training Organisation[3] and the Department for Education and Employment, emphasising the partnership between the Government, employers and training providers. The fact that MAs are partly employer funded, adds to the logic of employer involvement in designing training frameworks.

[2] This has been defined as including the following skills: communication, application of number, information technology, working with others, problem solving, and improving own learning and performance. (*OECD,* 1998B, p. 64)

[3] A network of employer led bodies responsible for addressing the education and training needs of employers and employees in key industry groups co-ordinating and developing national strategy at sector level.

- National Traineeships for those school-leavers aged 16 and above who would find MAs too demanding. This route provides a similar training framework as MAs but at a lower level, namely, NVQ2, which is between ISCED 2 and 3. Many frameworks have been developed ranging from animal care to plumbing to telecommunications; and many more are in the course of development. For a number of those who embark on this course, it may be a progression route to MAs.
- New Start Strategy. This provides an individually tailored training programme below NVQ2 for disadvantaged or disaffected 14-17 year olds who are in danger of dropping out of education and training or who have already done so.
- The Young Person's Guarantee. All 16 and 17 year olds who are not in employment or full-time education and who are desirous of being trained are guaranteed the offer of a suitable training place. The offer may be extended to 18-24 year olds whose training has been delayed or disrupted.
- Right to Time Off for Study or Training. This scheme targets 16 and 17 year old employees who desire reasonable paid time-off to pursue study or training in the workplace, at college or with a training provider, to get them to NVQ2 level or its equivalent.
- The New Deal Programme initiated by the Labour Party in 1998 to help 18-24 year old unemployed people who have been unemployed for more than 6 months. They are offered financial support and advice and training and job options. This is part of the principle of 'mutual obligations', with penalties on their unemployment benefits entitlement for those who refuse to take up a reasonable option.
- Work-based Training for Adults is aimed at 25-63 year olds who have been out of work for 6 months or more. Individual support is given to get them back to work including working towards a recognised qualification.

4. Higher education – the University and College pathway. This is entered by a large proportion of those who complete GCE A Level and GNVQ in quest of a degree. 33 percent of young people entered higher education in the U.K. in 1996-97; the proportion was close to 50 percent for Scotland. Participation in this level of education has more than doubled since the mid-1980s. It is interesting to note that while there is increased emphasis on vocational education because of its neglect in the past and the popular tendency to favour general education, there is no official suggestion that this development should be at the expense of further development of higher education. Official policy is that a 'learning society' should seek to develop both routes, both accessible to larger numbers.

*Table 5: The U.K. qualification system*

| Level | Academic Qualifications | General Vocational Qualifications | Occupational Competence Qualifications |
|---|---|---|---|
| 5 | Postgraduate degrees | | NVQ 5: Professional, Senior Management |
| 4 | Higher Education first degrees (bachelor . . .) | | NVQ 4: Higher technician, Management |
| 3 | GCEs: 2 A levels or equivalent | Advanced | NVQ 3: Advanced craft, Technician, Supervisor |
| 2 | GCSEs: 5 passes at higher (A-C) grades | Intermediate | NVQ 2: Basic craft |
| 1 | GCSEs: 4 passes at lower (D-G) grades | Foundation | NVQ 1: Foundation |

Source: *Thematic Review* (1999), p. 7.
GCE = General Certificate of Education
GCSE = General Certificate of Secondary Education
NVQ = National Vocational Qualification

## Overview of secondary and further education and training

It is too soon to test the extent to which the vision of the Government recited above is being realised. It is evident that it has set in motion various initiatives designed to increase the opportunities open to young people to acquire skills. The success already achieved in primary education has reinforced the political will to bring about a transformation in secondary and further education. The object of primary education has been to increase substantially the standards of literacy and numeracy in order to provide a more solid foundation for secondary and further education. The success in this connection is shown by the fact that 75 percent and 72 percent of children leaving primary school had achieved the standards of literacy and numeracy respectively for their age in 2000, compared to 57 percent and 54 percent in 1996. (DfEE 2001).

Recent research findings on the MAs and the National Traineeships show a generally favourable development (see *Kodz et al,* 2000). How effective the various training routes have been is still a matter for investigation but comparing figures of post compulsory education and training in England in 1991 and 1998, (*Hillage et al,* 2000) show that for 18 year olds, those in:

- Full-time education and government supported training and employer funded and other training, rose from 45 percent to 61 percent.
- Full-time and part-time education in publicly funded institutions and government supported training, rose from 40 percent to 54 percent.

The last four programmes under work-based occupational training shown above are designed to assist particularly young people, who are in danger of falling by the wayside or have already done so. Among 18 year olds, 20 percent are neither in education or training nor in employment. The

same situation applies to 8 percent of the 16 and 17 year olds. This group is vulnerable to the risk of protracted social exclusion by work at low wages interrupted by frequent bouts of unemployment.

The first two or three years after compulsory education are critical for the future employment prospects of young people. Hence the focus of the various programmes on this age group. The first two pathways, namely, the sixth form and FE College full-time education routes, are taken by about 70 percent of 16 year olds. Another 20 percent are in apprenticeship or other forms of work based training. But a number drop out of education and training in time, adding to the 10 percent of 16 year olds who are not in education or training.

The system is, of course, not free of faults and certain corrective measures will no doubt evolve. But there is a long road ahead before the U.K. may be said to have caught up with other EU countries.

The providers of work-based vocational education include, in addition to FE Colleges mentioned above, a large number of private providers some of whom are part of business enterprises providing training for their own employees and, in some cases, for the workers of other enterprises. Most teaching is on a modular basis to provide flexibility in the choice of skills. Training providers compete for clients, a fact which has drawn criticism relating to the reliability of their certification of the qualification of the trainees, especially as certification is completely internal to the workplace. To deal with this problem, a programme of inspections has been set in motion.

The narrowness of NVQ training, specific to a particular set of tasks, has also been a matter of concern because such training does not facilitate the development of new skills and adaptation to changes in technology. It is worth mentioning in passing that such narrow specialisation is also a feature of GCE A Level, lacking the broad disciplinary spectrum of the baccalaureate typical for Austria or Germany.

Another weakness of the system is that, because funding is output-related, private providers tend to be reluctant to take on persons from more disadvantaged backgrounds who may take longer to reach the required standard. The very people of concern to the Government may be neglected by the training system.

A more serious concern is the high rate of drop-outs from courses. In 1993, between 30 percent and 40 percent starting a course did not complete it. Non-completion rates tended to be higher in the vocational courses.

In summing up the strengths and weaknesses of the U.K. education and training system, an OECD study (1998B, p. 75) concluded:

The strengths include:

- the diversity and flexibility of education and training,
- a large and relatively successful higher education system,
- a culture of responsiveness and access among many providers, especially FE,
- a tradition of local process-based innovation,
- a culture of early transition to adult statuses in the family, household and labour market, and
- a flexible and relatively buoyant labour market.

Many of the weaknesses mirror these strengths:

- problems in maintaining consistent standards and quality across a diverse and flexible system,
- a relatively high proportion of under-achieving young people, compared with other OECD countries,
- a relatively weak vocational ethos,
- a culture of early leaving from education among a significant minority of young people,
- a history of rapid policy turnover and a lack of transparency in education and training, and
- a polarised labour market with a long tail of insecure, low-skilled and low-paid.

## Special education needs (SEN)

All OECD countries have implemented special education systems for children and adults who need extra support for efficient learning. Students may have disabilities, learning deficiencies or come from disadvantaged backgrounds and need additional support to make educational progress. The different degrees of integration of children with special needs into mainstream education, makes international comparisons difficult. But a new tri-partite international taxonomy classifies special programmes in an internationally consistent way. Category A needs arise from impairing conditions; category B needs refer to learning difficulties and category C refers to disadvantage. There is a substantial overlap between these categories. If one takes all three elements together, the proportion of children with special needs in compulsory education was 2.6 percent in the United Kingdom in 1996. This was the lowest share of any country participating in the survey, closely followed by Germany (4.3 percent) and Switzerland (5.8 percent).

Although the U.K. policy has for some time been in favour of including disabled students into mainstream schools, in practice it appears from a sample survey (see *OECD,* 1998B, p. 48) that a very small proportion had been educated in such schools; the majority attended special schools or

special units within mainstream schools. It also appears that although people with disabilities were as likely to be in education as able bodied people, they have greater difficulty in making the transition from school to work. There is also concern that the competitive nature of schools on the basis of student performance, may divert resources away from the disabled students.

*Table 6: Number of students receiving additional resources as a percentage of all students in compulsory education receiving additional resources*

*Categories A, B and C, 1996 (based on head counts)*

| | Total percent of all students | Cross-national category A | Cross-national category B | Corss-national category C |
|---|---|---|---|---|
| Austria | m | 1.33 | 2.01 | m |
| Finland[2] | 16.00 | 1.04 | 13.26 | 1.70 |
| France[1 2 3] | 18.07 | 2.53 | 2.14 | 13.40 |
| Germany | 4.31 | 1.45 | 2.86 | x |
| The Netherlands[1 2 3] | 33.53 | 1.77 | 3.49 | 28.27 |
| Switzerland[2] | 5.80 | 1.62 | 3.76 | 0.42 |
| United Kingdom | 2.56 | x | x | x |
| United States | 35.50 | 5.62 | 8.43 | 21.40 |

Source: OECD (2000A), p. 192. – [1] Coverage different for primary and lower secondary education. – [2] Year of reference different from 1996. – [3] Some figures are estimated.

## Enrolment and transition rates between elements of the education system and the labour market

The average age of individuals leaving school at the end of study programmes with GCSE-qualifications is 16, with A levels 18, with a degree 21[4]. The proportion of young people staying on in full-time education for at least another year after the end of compulsory education has risen from 47.8 percent in 1983/84 to 72.5 percent in 1993/94. It continued to rise, as can be seen from Table 7, such that in 1998, the retention rate of 16 year olds in secondary education was 81 percent. This is lower than in Austria (88 percent) and the OECD country average ((88 percent). The education gap is maintained at the age of 17 while, in addition, 11 percent of Austrian students were in post-secondary non-tertiary education and none in the U.K.. The enrolment of 18, 19 and 20 year old Austrian students for post-secondary non-tertiary education is in contrast to that of U.K. students for tertiary education. The proportion of U.K.-youth entering tertiary education has risen from 14 percent in 1987 to 33 percent 1996. This again confirms the preference of higher education to vocational education among U.K. students.

[4] Those that leave at a later stage may be low motivation drop-outs or low ability failures.

*Table 7: Transition characteristics at each year of age from 15 to 20: net enrolment rates by level of education*

*Based on head counts (1998) in percent*

| | Age 15 | Age 16 | | Age 17 | | | Age 18 | | | Age 19 | | | Age 20 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Second. education | Second. education | Second. education | Post-second. non-tertiary | Tertiary education | Second. education | Post-second. non-tertiary | Tertiary education | Second. education | Post-second. non-tertiary | Tertiary education | Second. education | Post-second. non-tertiary | Tertiary education |
| Australia | 99 | 97 | 81 | 1 | 5 | 34 | 3 | 30 | 20 | 3 | 35 | 17 | 2 | 32 |
| Austria | 94 | 88 | 75 | 11 | | 43 | 19 | 6 | 15 | 11 | 15 | 5 | 4 | 20 |
| Denmark | 98 | 93 | 82 | | | 74 | | | 54 | | 3 | 30 | | 10 |
| Finland | 100 | 89 | 93 | | | 82 | | 3 | 24 | | 19 | 14 | | 31 |
| Germany | 98 | 96 | 91 | | 1 | 83 | | 3 | 40 | 18 | 8 | 18 | 15 | 15 |
| Netherlands | 99 | 96 | 85 | 1 | 3 | 62 | 1 | 15 | 39 | 1 | 25 | 26 | 1 | 30 |
| Switzerland | 98 | 90 | 85 | | | 78 | 1 | 1 | 54 | 3 | 6 | 23 | 3 | 13 |
| U.K. | 101 | 81 | 66 | | 2 | 25 | | 24 | 14 | | 33 | 10 | | 33 |
| USA | 99 | 84 | 74 | | 3 | 23 | 3 | 37 | 4 | 3 | 39 | 1 | 3 | 40 |
| Country mean | 93 | 88 | 78 | 1 | 1 | 48 | 4 | 16 | 23 | 4 | 25 | 12 | 3 | 28 |

Source: *OECD* (2000A), p. 136.

## The role of the state in the U.K. education system

The formulation of education and training policy in the U.K. is split between the Department for Education and Employment (DfEE)[5] for England and its counterpart in Wales and Scotland. The DfEE, however, retains responsibility for employment matters throughout the U.K.. It is also the case that the DfEE is the leader in education policy initiatives for the whole country.

There is generally considerable uniformity between the different regions on most educational issues. This ensures not only that overall policy is consistent between the regions but also that the various curriculum and qualifications authorities work together. The need for compatibility if not uniformity in qualifications standards, is to ensure labour mobility and the transfer of students nation-wide.

Most schools are administered by local authorities, of which there are nearly 500 in the U.K., and education expenditure, funded by the central government, account for the bulk of local authority budgets. However, on such matters as curriculum, the power rests with the central government. FE Colleges receive their funds directly from the regional government.

[5] Effectively the Minister in charge of this Department.

## Adult education and training

Adult education and training comes within the Government's concept of Lifelong Learning. A recent skill audit in England (*Hillage at al,* 2000) revealed that, apart from deficits in core skills, one in five adults has low levels of literacy and almost half have low levels of numeracy. It is no wonder that the Government has placed great emphasis on basic skills training for adults. Local Education Authorities, which are part of local government, are responsible for local adult education. There were over one million enrolments in 1998. A recently formed Learning and Skills Council is responsible for all education and training of young people and adults, including the funding of Local Education Authorities. The Workers' Educational Associations have a long history of involvement in adult education and continue to do so. It is not a lack of funds or institutions to provide adult education on a continuing basis. It is rather a matter of a sufficient number of those who need further education and training being prepared to find the time and effort to take advantage of the facilities.

A recent Labour Force Survey (*Hillage et al,* 2000) found that although learning activity among adults is rising, it seems to be concentrated mainly among younger people, those with high levels of initial education, and those in work (especially in high level occupations). It seems that those with poor educational backgrounds, stay away from prospects of improving their position. The barriers facing many such persons include financial, time, negative attitudes to education and training, and lack of confidence. One of the main challenges to adult education is how to draw those who need it most but are least interested in it.

The U.K. White Paper referred to earlier, while arguing for greater and wider participation in universities and FE Colleges, draws special attention to the serious deficiency in basic skills (literacy and numeracy) and intermediate (vocational) skills (p. 12). It is in this area of serious deficiency that gives rise to long-term and/or frequent unemployment and low incomes. To remedy this deficiency, it is proposed to double, by 2002, the number of people having the opportunity to improve their basic skills. The White Paper sets its primary focus on literacy and numeracy "because they are fundamental to all future learning".

Of particular interest is the establishment recently of a novel institution, the University for Industry (UfI) to act as a one-stop-shop network for advice about the courses which are available and which would suit the learner's particular needs. The UfI is accessible through the various electronic media as well as by personal call in a variety of places. Extensive advertising will make this facility widely known and could be expected to stimulate the demand for learning. Its immediate priority targets will be basic skills, information technology skills, the management of SMEs, and the skill needs in specific industries and services.

In addition, the 'National Skills Task Force', established to assess the economy's future skill needs, to which reference was made above, will disseminate such information to the UfI and other relevant institutions in order to overcome skill shortages.

However, in respect of the UfI, a number of difficulties may be expected in applying the concept. The results of pilot programmes are particularly instructive in appreciating the challenging problems which need to be resolved before the scheme can be expected to work satisfactorily. These include a great deal more thought on the organisational, resources, expertise and funding requirements of the UfI, and also on the need for a significant cultural change in the inclination of individuals towards learning, and in the commitment of employers, particularly SMEs, to the concept. As might be expected, the challenge is greatest in relation to those in greatest need of further learning because of their motivational deficiencies and their lack of competence to access electronically-based material.

However, the scheme has only come into operation late in 2000. UfI has been incorporated as an independent company in its own right. It has undertaken research on the needs of the market (skill gaps, trends in employment, attitudes towards learning and the quality of existing programmes) and potential customers. Its range of advisory activity is still limited. It is early days yet for the scheme and time must be allowed to pass before it can be judged.

## Economic impact of the education system

The U.K. faces four challenges:

1. To ensure that skill levels rise sufficiently to prevent the re-emergence of skill shortages, which contributed to the deterioration in productivity growth and inflation at the end of the 1980s.
2. To ensure that improvements in education and training contribute to a high quality workforce, in order to reduce the productivity gap between the U.K. and other leading economies.
3. To ensure that popular attitudes to vocational education and training, and business values change to allow the U.K. to break out of a low skills equilibrium.
4. To deal with the fact that some 10 percent of 16 year olds are neither in education nor in the labour market; and the 40 percent of 19-24 year olds who have not reached ISCED 2 level or its equivalent (see *OECD,* 1999 U.K. Country Note, p. 2).

### The level of education and employment

The U.K. Government's commitment to an expansion of education and training and making it accessible to larger proportions of the population, especially the younger ones, is to increase their employability. Its assessment of the 'foundational level of employability' is the attainment of at least level 2 (equivalent to between ISCED 2 and 3). At present, about 70 percent of young people have attained this level. It is the aim of the Government to raise the figure to 100 percent in order to ensure a higher level of employability of young people.

*Table 8: Unemployment rates by level of educational attainment and gender for populations 25 to 64 and 30 to 44 years of age (1998)*

| | | Ages 25-64 | | | | | Ages 30-44 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Below upper secondary education ISCED 0/1/2 | Upper secondary and post-secondary non-tertiary education ISCED 3/4 | Tertiary-type B ISCED 5B | Tertiary-type A and advanced research programmes ISCED 5A/6 | All levels of education | Below upper secondary education ISCED 0/1/2 | Upper secondary and post-secondary non-tertiary education ISCED 3/4 | Tertiary-type B ISCED 5B | Tertiary-type A and advanced research programmes ISCED 5A/6 | All levels of education |
| Australia | Men | 10.4 | 5.8 | 3.5 | 2.8 | 6.6 | 11.0 | 5.2 | 3.2 | 2.6 | 6.4 |
| | Women | 7.5 | 5.9 | 4.7 | 3.0 | 5.8 | 8.7 | 6.3 | 5.0 | 3.6 | 6.6 |
| Austria* | Men | 7.0 | 3.3 | 2.5 | 2.2 | 3.8 | 7.4 | 2.8 | 2.2 | 2.3 | 3.4 |
| | Women | 6.5 | 3.6 | 2.5 | 3.3 | 4.2 | 6.4 | 3.4 | 2.1 | 4.0 | 4.1 |
| Denmark | Men | 4.2 | 3.3 | 2.6 | 3.9 | 3.4 | 2.8 | 2.8 | 1.8 | 4.9 | 2.8 |
| | Women | 9.6 | 6.3 | 2.8 | 7.4 | 6.0 | 11.6 | 5.1 | 2.6 | 7.6 | 5.7 |
| Finland* | Men | 14.5 | 11.8 | 7.4 | 4.6 | 10.7 | 14.3 | 10.5 | 6.3 | 3.9 | 9.6 |
| | Women | 17.0 | 12.2 | 8.6 | 4.5 | 11.5 | 18.1 | 11.2 | 8.6 | 4.0 | 10.5 |
| France | Men | 13.5 | 7.7 | 6.5 | 5.3 | 9.2 | 14.5 | 6.7 | 5.4 | 4.3 | 8.7 |
| | Women | 16.5 | 12.2 | 6.9 | 8.0 | 12.5 | 19.1 | 12.0 | 5.8 | 8.2 | 12.9 |
| Germany | Men | 17.6 | 9.7 | 5.2 | 4.8 | 9.2 | 16.0 | 8.4 | 3.1 | 4.1 | 7.7 |
| | Women | 14.7 | 11.1 | 8.0 | 5.9 | 10.7 | 15.0 | 10.2 | 6.2 | 5.7 | 9.7 |
| Ireland** | Men | 11.7 | 4.2 | 2.5 | 2.9 | 7.4 | 13.0 | 3.5 | 2.1 | 2.3 | 7.3 |
| | Women | 11.4 | 4.8 | 3.0 | 3.9 | 6.5 | 12.2 | 5.0 | 2.4 | 4.3 | 6.5 |
| Nether-lands*** | Men | 4.6 | 2.1 | x(5A/6) | 1.9 | 2.8 | 5.0 | 2.0 | x(5A/6) | 1.9 | 2.6 |
| | Women | 7.7 | 4.2 | x(5A/6) | 2.7 | 4.8 | 8.5 | 5.0 | x(5A/6) | 3.0 | 5.1 |
| Norway* | Men | 4.2 | 2.9 | 1.7 | 1.8 | 2.8 | 6.4 | 2.9 | 1.8 | 1.4 | 3.1 |
| | Women | 3.8 | 3.4 | 1.6 | 1.6 | 2.9 | 4.2 | 3.7 | 2.2 | 1.0 | 3.2 |
| Spain | Men | 12.6 | 9.9 | 8.4 | 8.6 | 11.3 | 13.6 | 8.6 | 6.3 | 6.2 | 10.9 |
| | Women | 25.6 | 22.7 | 23.9 | 17.0 | 23.0 | 29.5 | 22.7 | 22.9 | 14.2 | 23.8 |
| Swe-den*** | Men | 9.8 | 8.2 | 6.0 | 4.2 | 7.7 | 11.3 | 8.5 | 5.6 | 4.7 | 8.1 |
| | Women | 11.1 | 7.5 | 4.2 | 3.0 | 6.9 | 15.8 | 7.9 | 4.3 | 3.8 | 7.6 |
| Switzer-land | Men | 6.2 | 2.9 | m | m | 3.0 | m | 2.8 | m | m | 2.6 |
| | Women | 5.3 | 2.7 | m | m | 3.6 | m | 3.1 | m | m | 3.7 |
| U.K. | Men | 13.7 | 5.3 | 3.5 | 2.3 | 5.6 | 15.7 | 4.8 | 3.4 | 1.8 | 5.1 |
| | Women | 7.3 | 4.5 | 1.7 | 3.0 | 4.4 | 10.3 | 4.9 | 1.9 | 3.1 | 4.9 |
| USA | Men | 8.0 | 4.6 | 3.2 | 1.7 | 4.1 | 9.2 | 4.5 | 2.7 | 1.3 | 4.0 |
| | Women | 9.3 | 4.2 | 3.0 | 1.9 | 3.8 | 12.8 | 4.8 | 3.4 | 1.8 | 4.4 |
| Country mean | Men | 8.9 | 5.3 | 4.3 | 3.3 | 5.7 | 9.8 | 4.9 | 3.9 | 2.7 | 5.5 |
| | Women | 10.0 | 7.6 | 5.2 | 4.6 | 7.2 | 12.2 | 7.6 | 5.3 | 4.1 | 7.6 |

Source: *OECD* (2000A), p. 270. – * Year of reference 1997. – ** ISCED 5B includes some ISCED 4. – *** ISCED 4 is included in ISCED 5B.

That there is a sound empirical basis for this objective is reflected in Table 8. It will be seen that not only for the U.K. but also for other OECD countries, unemployment rates fall with higher qualifications. There is no consistent pattern as between men and women, especially in relation to the highest qualification. Comparing the U.K. with Austria, it will be seen that moving up the level of attainment, the unemployment rate of men declines progressively. While this also applies to women, the unemployment rate is lower for women in the U.K. except for the highest qualification when the unemployment rate rises and exceeds that of men both in the U.K. and Austria. The lower

unemployment rate of women relative to men in the U.K. in all educational attainment levels except tertiary education type A reflects the high share of female part-time employment - partly a result of tax incentives to employers for part-time work - which broadens the employment base and reduces the potential of the unemployed. In Austria the rise in unemployment of university graduates of type A compared to tertiary type B is a reflection of the employment opportunities in the public sector, the major provider of jobs for this type of education. The average OECD figure does not follow this pattern.

## Performance of the education system

International comparisons of student achievement have become an essential tool in assessing the performance of education systems, by measuring achievement in mathematics, science and reading. Mathematical skills are increasingly important in a globalised economy in which the adaptation to technological change is a key variable of competitiveness. Data from the Third International Mathematics and Science Study (TIMSS) show that Switzerland, the Netherlands and Austria are the three countries with the highest mean mathematics achievement of their 14 year olds for the year 1995 (Table 9). The United Kingdom on the other hand has a comparatively low mean achievement level, not much higher than Denmark and Norway and only insignificantly higher than the United States. The United Kingdom did not only have a mean score below the OECD average but also one of the lowest in the lowest and top quartile of mathematics and science achievement levels.

*Table 9: Student differences in mathematics and science achievement*

*Distribution of mathematics/science achievement scores, eighth grade (1995)*

| | Mathematics | | | Science | | |
|---|---|---|---|---|---|---|
| | Mean | 25th percentile° | 75th percentile° | Mean | 25th percentile° | 75th percentile° |
| Australia** | 530 | 460 | 600 | 545 | 475 | 619 |
| Austria** | 539 | 474 | 608 | 558 | 499 | 623 |
| Denmark** | 502 | 443 | 561 | 478 | 423 | 541 |
| Germany** | 509 | 448 | 572 | 531 | 463 | 602 |
| Netherlands** | 541 | 477 | 604 | 560 | 505 | 619 |
| Norway | 503 | 445 | 560 | 527 | 470 | 588 |
| Sweden | 519 | 460 | 579 | 535 | 476 | 598 |
| Switzerland* | 545 | 485 | 607 | 522 | 460 | 587 |
| England* | 506 | 443 | 570 | 552 | 485 | 625 |
| USA* | 500 | 435 | 563 | 534 | 465 | 608 |
| Country mean | 516 | 456 | 576 | 523 | 464 | 586 |

Source: *OECD* (1996), p. 206, 207. – ° 25 or 75 per cent of students score below this point. – * Countries met TIMSS sampling requirements only partially. – ** Countries did not meet TIMSS sampling requirements.

There is, however, a very positive development in the U.K. educational outcome: Gender differences in mathematics are lower than on average in the OECD countries (Table 10) – only Sweden and Germany have smaller differences in the mean mathematics achievement by gender.

Also significantly below the OECD average, are countries like USA, Norway, Australia and Switzerland. It is not clear whether this is the result of deliberate policy or simply due to social and cultural factors. The increasing demand for workers with mathematics and science skills in a period of economic development, which is driven by technological change, implies that the career opportunities and the earnings potential of women are not going to be worse than those for men.

*Table 10: Gender differences in mathematics and science*

*Mean mathematics/science achievement by gender in eighth grade (1995)*

| | Mean mathematics | | | Mean science | | |
|---|---|---|---|---|---|---|
| | Boys | Girls | Difference in means° | Boys | Girls | Difference in means° |
| Australia** | 528 | 533 | *5g* | 551 | 541 | *9b* |
| Austria** | 544 | 536 | *8b* | 566 | 549 | *18b* |
| Denmark** | 512 | 495 | *17b* | 495 | 464 | *31b* |
| Germany** | 512 | 509 | *3b* | 542 | 524 | *18b* |
| Netherlands** | 545 | 537 | *8b* | 570 | 550 | *21b* |
| Norway | 505 | 501 | *4b* | 534 | 521 | *13b* |
| Switzerland* | 548 | 544 | *5b* | 529 | 515 | *15b* |
| Sweden | 520 | 518 | *2b* | 543 | 528 | *15b* |
| England* | 509 | 505 | *4b* | 563 | 543 | *20b* |
| USA* | 502 | 498 | *4b* | 539 | 530 | *9b* |
| Country mean | 519 | 513 | *7b* | 532 | 515 | *18b* |

Source: *OECD* (1996), p. 216, 217. – ° b means boys score higher, g means girls score higher. – * Countries met TIMSS sampling requirements only partially. – ** Countries did not meet TIMSS sampling requirements.

## Expenditure on education and funding structure

The U.K. lagged behind many other advanced economies on certain major indicators of education and training performance, be they input or output oriented, in the late 1980s and early 1990s. This was, for example, the case with the input measure of spending on education, or the participation rate in education discussed above.

The OECD average total public expenditure on all institutions of education amounted to 5.1 percent of GDP in 1997 (OECD, country mean), compared to 4.8 percent in 1990 (*OECD,* 2000A, p. 54). The United Kingdom spent with 4.6 percent of GDP, somewhat less than the OECD average and clearly less than Austria (6 percent, 1990: 5.2 percent). Unfortunately no data on educational spending of private institutions is available for the United Kingdom. If one adds grants and subsidies, U.K. public expenditure on education rises to 5.3 percent of GDP in 1991 (*OECD,* 1995, p. 51). This was a somewhat lower level than in the Netherlands at that time (5.6 percent of GDP) but higher than in Australia (4.9 percent of GDP).

In view of recent U.K. Government commitments and initiatives, these figures cannot be regarded as reflecting the present scale of U.K. funding. The Prime Minister has recently promised that funding as a proportion of GDP will be increased. The plans for 2001-2004 include an increase in

real spending of 700 pounds per pupil in schools compared to 1997-98; a 7.8 billion pounds in capital programme; and 570 million pounds of direct grants to schools (DfEE 2001).

An interesting funding concept advanced by the Green Paper is the development of Individual Learning Accounts (ILAs) to encourage people to save and invest in their own learning. ILAs appear to be a sensible mechanism for accumulating private funds to finance lifelong learning – in particular, to widen access and participation in lifelong learning without imposing unduly on the taxpayer. Eligibility to the scheme is to be confined initially to those likely to need it most, in particular the young and those on low and middle incomes. And although the concept is market oriented in the sense that it imposes a substantial part of the cost of paying for learning on the individuals concerned, there are fiscal incentives in the form of taxation and other subsidies. While anyone will be able to open an account, the scheme is aimed particularly at those in full or part-time employment. Such account holders will qualify for a government grant of 150 pounds. There is also a substantial discount for certain courses, such as computer literacy, to encourage people to take them.

In principle, such subsidies can readily be justified on the basis of the collective benefits of learning. As always in such matters, the question is how much of such expenditure is consumption and how much is investment; and as to the latter, what proportion of the return accrues to society. Thus the extent of the subsidy is a debatable issue; and only experience will tell whether the subsidy is large enough to provide the necessary incentive for a sufficient number of participants to justify the administrative cost of the scheme.

The problems of the ILAs as revealed by the pilot studies, presented at an EU Peer review of successful labour market policies in Sheffield (1999), will call for more time and fine-tuning before a proper assessment of the concept's viability can be made. But the question may be raised whether there is a case for a more generous public input into the accounts, and a portion returned to the government on some sort of an income contingent basis. This is likely to be particularly relevant for those who need training most and might be deterred from participating in the scheme. Although the scheme is in its infancy, there are no signs so far of a rush on the setting up of ILAs.

A further funding initiative is the Career Development Loans Scheme, accessible to those who are 18 and over and are seeking financial help to pay for vocational education or training. This is a deferred repayment bank loan, amounting up to 800 pounds to pay for 80 percent of course fees, books and related expenses. The limit may be extended to 100 percent for those who have been unemployed for 3 months or longer at the time of application. No repayments are required to be made during the period of study, and the Government pays the interest on the loan.

*Table 11: Educational expenditure as a percentage of GDP for all levels of education by source of funds (1997 and 1990) in OECD countries*

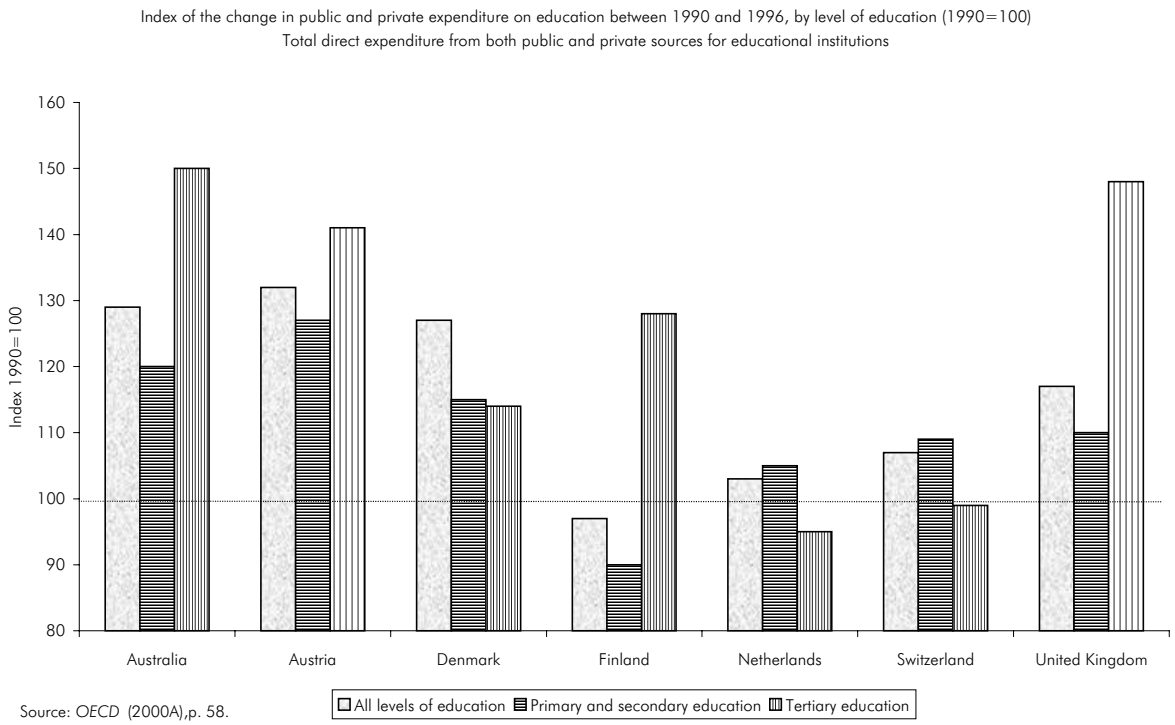
| | 1997 | | | 1990 | |
|---|---|---|---|---|---|
| | Direct public expenditure for educational institutions | Total expenditure (public and private) for educational institutions | Total expenditure (public, private and internat. sources) for educational institutions plus public subsidies to households | Direct public expenditure for educational institutions | Total expenditure (public and private) for educational institutions |
| Australia | 4.3 | 5.6 | 6.1 | 4.3 | 4.9 |
| Austria | 6.0 | 6.5 | 6.7 | 5.2 | – |
| Denmark | 6.5 | 6.8 | 8.2 | 6.2 | 6.4 |
| Finland | 6.3 | 6.3 | 6.9 | 6.4 | 6.4 |
| Germany | 4.5 | 5.7 | 5.9 | – | – |
| The Netherlands | 4.3 | 4.7 | 5.1 | – | – |
| Sweden | 6.8 | 6.9 | 8.5 | – | – |
| Switzerland | 5.4 | 6.0 | 6.1 | 5.0 | – |
| United Kingdom | 4.6 | | | 4.3 | 5.3* |
| USA | 5.2 | 6.9 | 7.1 | – | – |
| Country mean | 5.1 | 5.8 | 6.1 | 4.8 | 5.2 |
| OECD total | 4.8 | 6.1 | 6.5 | 4.4 | 5.0 |

Source: *OECD* (2000A), p. 54. – * Total public expenditure on education 1991.

In the course of the 1990s, public and private expenditure on all levels of educational institutions increased in the U.K. by 17 percent. But there was considerable variation as between the different educational levels. While expenditure on primary and secondary educational institutions increased between 1990 and 1996 by 10 percent, expenditure on tertiary educational institutions rose by 48 percent. In Austria, on the other hand, public and private expenditure on all major educational institutions rose significantly, tertiary education taking a slight lead. However, the difference in growth rates by type of education was less pronounced than in the U.K. The average increase amounted to 32 percent; the rise in expenditure on universities was a little smaller than in the U.K. (+41 percent), but considerably higher (+27 percent) in the primary and secondary education system. Different demographic dynamics, institutional factors as well as genuine educational policy differences account for the differences.

Public expenditure on education does not provide an adequate picture of the human capital of the country, however. The U.K. does not differ much from Germany in terms of public expenditure on education in relation to GDP and yet the productivity of the German work force is higher. One reason may be the large investment of enterprises in education and training of youth through the apprenticeship system. The employers' expenditure on training is not available on an internationally comparable basis, however, to make any firm statements as to the relative position of the U.K. compared to Germany.

*Graph 3: Change in public and private expenditure by level of education in selected OECD countries (1990-1996)*




Source: *OECD* (2000A),p. 58.

The U.K. student/teacher ratios are consistently above the OECD average for every level of education. In primary schools, the student/teacher ratio was 22 compared to 17.1 in the OECD and 12.7 in Austria; in secondary schools the student/teacher ratio was lower than in primary schools and the differential to the OECD average declined (1998: 16.7 compared to 15.2 in the OECD). With 9.5 students per teacher in secondary education, Austria has the lowest ratio of any OECD country. This may be taken as one factor of high quality standard of the Austrian educational system.

The international differences in the student/teacher ratios may derive from differing demographic pressures in different stages in the education system and the asymmetry in adjustment speeds. However, they may result also from genuinely different educational policies. In Austria, the low student/teacher ratio in 1998 is not only the result of educational policy but also of more pronounced structural demographic change than in most other OECD countries, i.e., a larger and concentrated babyboom followed by a pronounced babyslump, and a rigid public sector employment system based on tenure which does not offer the employment flexibility of the private sector. This is one reason for the relatively high cost of secondary education in Austria.

The consistency of above average student/teacher ratios in every level of education, also in tertiary education, leads one to suspect that it is genuine educational policy. In 1998, the ratio in tertiary

education was 17.7 students per teaching staff compared to 14.6 in the OECD (country mean). This is the only educational level in which Austria has an above average student/teacher ratio. The ratio of 15.7 is, however, still lower than in the Netherlands. This may be the result of a different composition of tertiary education by study field than in other OECD countries, it may also be an indicator of different quality standards.

*Table 12: Ratio of students to teaching staff by level of education, calculations (based on full-time equivalents) 1998*

| | Early childhood education | Primary education | Lower secondary education | Upper secondary education | All secondary education | All tertiary education |
|---|---|---|---|---|---|---|
| Australia | m | 17.9 | 14.7 | 16.8 | 15.5 | 9.9 |
| Austria | 18.6 | 12.7 | 9.3 | 9.7 | 9.5 | 15.7 |
| Finland | 11.9 | 17.7 | 11.0 | m | m | m |
| Germany | 23.2 | 21.6 | 16.3 | 13.6 | 15.5 | 12.4 |
| The Netherlands | x | 17.8 | m | m | 18.5 | 18.7 |
| Sweden | m | 13.4 | 13.2 | 17.0 | 15.3 | 9.0 |
| Switzerland* | 18.7 | 16.3 | 12.1 | 17.6 | 14.0 | m |
| United Kingdom | 21.5 | 22.0 | 16.7 | 16.7 | 16.7 | 17.7 |
| United States | 18.0 | 16.5 | 17.1 | 14.7 | 15.9 | 14.6 |
| Country mean | 15.5 | 17.1 | 14.9 | 15.1 | 15.2 | 14.6 |

Source: *OECD* (2000A), p. 119. – * Public institutions only.

## Overview of the labour market of youth and young adults

While the total unemployment rate was 6.3 percent in the U.K. in 1998 (*OECD,* 2000B) youth unemployment (16-24 year olds) was 12.3 percent, i.e., double the average rate. A closer look at the composition reveals particularly high labour market problems of 15-19 year olds (Table 13). They had an unemployment rate of 15.5 percent, in which the group with the lowest educational attainment level, i.e., youth with no upper secondary education, had the highest unemployment rates (29.6 percent), while 15-19 year olds with upper secondary education had an unemployment rate of 13.1 percent. The unemployment differential between youth and adults is a matter of concern; the declining proportion of youth in the population of working age suggests that the problem of youth unemployment does not result from supply factors. A combination of demography and increased participation in education and training have reduced the number of young people available for work by almost one third in the 1990s compared to the 1980s. In spite of that, labour market opportunities of youth in terms of wages and employment opportunities, have not been overwhelming. There is a general acceptance that this is the result of demand developments, i.e., the traditional entry ports of youth into the labour market, craft and related manufacturing jobs, clerical work, sales, catering and hairdressing have become scarce, while jobs requiring higher skills levels in managerial, technical and administrative jobs have risen in demand. At the same time the segment of low wage service sector jobs, where youth is disproportionately employed, is increasing, with the result that unskilled youth has worse labour market prospects now than a decade ago (see *Blanchflower – Freeman,* 1996).

Youth unemployment rates in the U.K. are lower than on average in the EU (12.3 percent in 1999 versus 17.2 percent, *OECD,* 2000B, p. 234). Only Austria, Germany, the Netherlands and Denmark had significantly lower unemployment rates of 15-19 year olds than the United Kingdom[6].

*Table 13: Youth unemployment rates by level of educational attainment and age group (1998)*

| | Below upper secondary education | | | Upper secondary and post-secondary non-tertiary education | | | Tertiary-type B | | Tertiary-type A and advanced research programmes | | All levels of education | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ISCED 0/1/2 | | | ISCED 3/4 | | | ISCED 5B | | ISCED 5A/6 | | | | |
| | 15-19 | 20-24 | 25-29 | 15-19 | 20-24 | 25-29 | 20-24 | 25-29 | 20-24 | 25-29 | 15-19 | 20-24 | 25-29 |
| Australia | 23.6 | 20.8 | 12.7 | 12.0 | 10.8 | 6.8 | 6.9 | 5.4 | 5.2 | 2.7 | 19.4 | 12.0 | 7.4 |
| Austria* | 8.4 | 7.6 | 10.9 | 8.8 | 4.3 | 3.2 | 4.1 | 3.8 | m | 4.2 | 8.6 | 4.7 | 4.4 |
| Denmark | 8.3 | 9.2 | 10.4 | 12.1 | 4.8 | 5.9 | 9.5 | 4.7 | m | 9.5 | 8.6 | 6.1 | 6.4 |
| Finland* | 34.5 | 29.1 | 23.5 | 31.8 | 20.7 | 15.4 | 15.9 | 12.2 | 13.5 | 8.5 | 33.6 | 21.3 | 14.8 |
| France | 23.8 | 37.2 | 26.7 | 26.5 | 22.8 | 15.4 | 14.7 | 10.5 | 18.4 | 11.1 | 24.4 | 25.6 | 16.1 |
| Germany | 6.9 | 16.3 | 20.4 | 7.3 | 8.2 | 7.7 | m | 4.8 | m | 4.9 | 7.6 | 9.9 | 8.7 |
| Ireland** | 16.9 | 22.3 | 15.1 | 10.8 | 7.4 | 4.6 | 5.4 | 3.5 | 5.4 | 3.1 | 14.3 | 10.3 | 6.9 |
| The Nether-lands*** | 12.9 | 6.8 | 5.9 | 7.3 | 4.3 | 1.9 | x(5A/6) | x(5A/6) | 4.8 | 1.5 | 11.8 | 5.6 | 3.6 |
| Norway* | 26.0 | 13.2 | 9.1 | 13.1 | 8.0 | 5.0 | 5.9 | 3.1 | 8.7 | 5.3 | 16.0 | 8.6 | 5.6 |
| Spain | 40.9 | 29.4 | 24.6 | 42.5 | 32.2 | 21.9 | 31.7 | 19.5 | 43.6 | 28.6 | 41.2 | 31.9 | 24.3 |
| Sweden*** | 18.4 | 26.7 | 21.2 | 29.1 | 14.8 | 10.2 | 7.1 | 6.7 | 1.2 | 3.4 | 20.4 | 15.4 | 10.1 |
| U.K. | 29.6 | 24.5 | 19.8 | 13.1 | 9.9 | 7.3 | 6.1 | 2.5 | 6.8 | 2.9 | 15.5 | 10.1 | 7.0 |
| USA | 18.3 | 17.8 | 12.1 | 9.9 | 8.5 | 6.3 | 1.9 | 3.2 | 2.3 | 1.9 | 15.2 | 8.4 | 5.3 |
| Country mean | 22.1 | 18.9 | 15.2 | 20.9 | 13.6 | 9.0 | 10.8 | 7.1 | 13.8 | 7.7 | 20.2 | 13.8 | 9.2 |

Source: *OECD* (2000A), p. 271. – * Year of reference 1997. – ** ISCED 5B includes some ISCED 4. – *** ISCED 4 is included in ISCED 5B.

In principle there are three ways to reduce the unemployment rate of the least educated:

- by reducing the replacement ratios in the benefit system,
- by reducing the wages at the lower end of the wage distribution,
- by increasing the educational attainment and skill level of the least educated.

The first two options increase income inequality. The third tries to increase the labour productivity of the least skilled and through that improve the employment prospects. The U.K. has chosen a combination of all three instruments.

During the time of conservative governments increasing the flexibility of the labour market by various means was the objective. One way of achieving that was through 'activating' the unemployed by mutual obligation schemes, i.e., by linking welfare payments with active job search,

[6] For a differentiated account of youth unemployment in the OECD, see *Marchand* (1999).

and by providing more individualised, tailor made training programmes. In October 1996 the so-called Jobseeker Allowance (JSA) was introduced as a substitute for the former unemployment benefit and Income Support system. What was new with JSA was that benefit recipients had to sign a Jobseeker's Agreement to follow a proposed programme of reinsertion into the labour market. Non-compliance, i.e., refusal to take up a job offer, may be sanctioned by discontinuing benefit payments for up to 26 weeks. Another activation instrument was to provide funds to facilitate selfemployment of the unemployed – Enterprise Allowance Scheme.

The second instrument to reduce unemployment was to widen the gap between welfare payments and minimum wages in order to provide a sufficiently large financial 'incentive' to work. This was obtained by providing In-Work-Benefits to transfer payment recipients, e.g., if one member of a family with children works more than 16 hours per week, a family credit is granted. The family credit is reduced when household income rises thus not eliminating the problem of the unemployment trap but only raising the threshold.

In order to foster the opening of the wage distribution by educational attainment, the wages councils, which had originally been created to decide upon minimum wages in certain industries collectively, were abandoned 1993. In addition employment protection legislation was further reduced turning the U.K. labour market into the most un/deregulated in the EU.

Parallel to increasing deregulation a strategy of increasing the skills of the work force was pursued. In addition to the various arrangements and institutions outlined earlier, vocational education and training was also extended to the Training and Enterprise councils (TECs), which are financed by the state but run by the private sector.

As has been pointed out in the introduction, the chosen route of increasing the flexibility of the market to decrease unemployment has been successful. A quickly visible effect of labour market deregulation, is the quicker adjustment of employment to changes in output. There is, however, conflicting evidence on the growth of employment; part-time work and casual work are a significant element of employment growth. Also long-term unemployment, in particular of low skilled workers, many of them youth, remains a major problem. The Labour government made therefore the reinsertion of youth and long-term unemployed a priority in their 'new deal' policy. However, it has restored minimum wages on a regional basis.

## The value of education: cost-benefit analyses

From an economic point of view, public spending on education and training can be regarded as an investment: it is worthwhile if the net present value of its expected benefits to society exceeds the net present value of expected social costs. The benefits and costs to the individual and the employer differ from the social rate of return and may be treated separately.

For practical purposes the most relevant economic indicator of the benefits of educational spending to society is the marginal rate of return on the incremental resources allocated to education. It is difficult to obtain a definite answer to the question of the optimal public/private funding mix of education because it is difficult to quantify the full economic benefits of education and training and the division between the 'social' and 'private' net benefit.

There is little consensus both on the range of the true returns to education and on the appropriate method to measure it. The methodological difficulties arise from the fact that educational decisions are not equally distributed amongst individuals but structured in terms of educational background and social status of the parents, the educational opportunities in the region (urban versus rural) and the innate ability of the individual – to name but a few structuring mechanisms. Further, access to different types of schooling is not only unequal for all individuals, but the returns to education may also be different for individuals with the same type of education (*Card,* 1994)[7].

*Individual rates of return*

The U.K. is well endowed with datasets which allow a wide variety of issues associated with the returns to education to be addressed. Several studies on individual rates of return to education have been undertaken in the United Kingdom (*Chevalier – Walker,* 2001, *Dearden et al.,* 2000, *Denny et al.,* 2000, *Dearden,* 1998, 1999, *Dearden et al.,* 2000, *Harmon – Walker,* 1995). The unit of observation is the individual and the theoretical approach is an augmented specification of the standard human capital earnings function as proposed by *Mincer* (1974). The focus of research may differ. It may be centred around wage differentials due to education, experience and occupation, to family background and ability, race[8], differentials between the private and the public sector or between different industries; another focus is on the returns to enterprise related training.

An overview of relative earnings from employment by educational level in OECD countries (*OECD,* 2000A, p. 297), shows that there is a considerable difference in individual rates of return to education between countries.

The shortfall in earnings due to less than upper secondary education, i.e., of a skill level below ISCED 3/4, amounted to 36 percent in the case of the U.K. in 1998 for the population 25 to 64 years of age. This is one of the highest negative differentials for unskilled labour of any OECD country, only equalled by the USA. Switzerland (26 percent), Australia (21 percent) and Germany

[7] Analyses for the U.K. and Ireland show that an increasing participation in higher education of youth from the bottom of the socio-economic distribution, a result of reducing the cost of higher education to the disadvantaged, has resulted in "crowding out" of some less talented from better off backgrounds such that the premium to higher education of the better off has been reduced (*Dearden,* 1998 for the U.K., *Denny – Harmon,* 2000 for Ireland in the 1970s).

[8] Some 5 percent of the working population are non-white in the U.K..

(19 percent) follow suit. Significantly lower earnings shortfalls apply to unskilled workers in Finland (3 percent), and Sweden (10 percent).

*Table 14: Relative earnings of 25 to 64 and 30 to 44 year olds from employment by level of educational attainment and gender 1997*

*(ISCED 3/4 = 100)*

| | | Below upper secondary education ISCED 0/1/2 | | Tertiary-type B education ISCED 5B | | Tertiary-type A and advanced research programmes ISCED 5A/6 | |
|---|---|---|---|---|---|---|---|
| | | Ages 25-64 | Ages 30-44 | Ages 25-64 | Ages 30-44 | Ages 25-64 | Ages 30-44 |
| Australia | Men | 87 | 83 | 120 | 116 | 144 | 138 |
| | Women | 85 | 84 | 113 | 112 | 154 | 154 |
| | M + W | 79 | 75 | 103 | 101 | 136 | 131 |
| Denmark | Men | 86 | 86 | 124 | 121 | 139 | 139 |
| | Women | 88 | 88 | 119 | 115 | 136 | 144 |
| | M + W | 85 | 85 | 115 | 110 | 140 | 142 |
| Finland* | Men | 95 | 92 | 129 | 125 | 189 | 174 |
| | Women | 101 | 99 | 123 | 122 | 179 | 172 |
| | M + W | 97 | 96 | 121 | 117 | 186 | 173 |
| France** | Men | 88 | 88 | 130 | 137 | 176 | 175 |
| | Women | 80 | 81 | 132 | 138 | 161 | 168 |
| | M + W | 84 | 85 | 126 | 132 | 169 | 171 |
| Germany | Men | 88 | 87 | 106 | 108 | 156 | 144 |
| | Women | 87 | 84 | 111 | 110 | 156 | 159 |
| | M + W | 81 | 82 | 108 | 106 | 163 | 153 |
| Italy*** | Men | 73 | 77 | x(5A/6) | x(5A/6) | 173 | 161 |
| | Women | 76 | 77 | x(5A/6) | x(5A/6) | 129 | 133 |
| | M + W | 76 | 80 | x(5A/6) | x(5A/6) | 156 | 148 |
| The Netherlands* | Men | 87 | 86 | x(5A/6) | x(5A/6) | 136 | 129 |
| | Women | 75 | 74 | x(5A/6) | x(5A/6) | 141 | 145 |
| | M + W | 84 | 84 | x(5A/6) | x(5A/6) | 137 | 132 |
| Norway | Men | 85 | 85 | x(5A/6) | x(5A/6) | 138 | 140 |
| | Women | 84 | 90 | x(5A/6) | x(5A/6) | 140 | 143 |
| | M + W | 85 | 87 | x(5A/6) | x(5A/6) | 138 | 138 |
| Sweden | Men | 88 | 88 | x(5A/6) | x(5A/6) | 135 | 135 |
| | Women | 89 | 87 | x(5A/6) | x(5A/6) | 125 | 121 |
| | M + W | 90 | 89 | x(5A/6) | x(5A/6) | 129 | 128 |
| Switzerland** | Men | 81 | 82 | 119 | 122 | 145 | 139 |
| | Women | 74 | 82 | 123 | 122 | 157 | 164 |
| | M + W | 74 | 79 | 137 | 140 | 162 | 156 |
| U.K.** | Men | 73 | 70 | 125 | 124 | 157 | 157 |
| | Women | 64 | 61 | 135 | 133 | 188 | 192 |
| | M + W | 64 | 63 | 125 | 125 | 168 | 172 |
| USA ** | Men | 69 | 67 | 113 | 114 | 183 | 182 |
| | Women | 62 | 60 | 127 | 130 | 180 | 191 |
| | M + W | 70 | 68 | 116 | 116 | 184 | 184 |

Source: *OECD* (2000A), p. 297. – * 1996. – ** 1998. – *** 1995.

The premium for tertiary education skills of ISCED 5 or 6 compared to upper secondary education skills for the U.K. was, in contrast, one of the highest in OECD countries with 68 percent. Similarly high returns to higher education can be reaped in France (69 percent), Germany (63 percent), and Switzerland (62 percent), higher ones in Finland (86 percent).

The wide international differences in the returns to higher education (mean annual average earnings before tax) reflect a number of factors:

- skill demands in the work force (industrial structure, technology),
- the supply of workers at the various levels of educational attainment,
- minimum wage legislation – may cause the actual wage difference to be smaller than in a labour market with free mobility of wages, implying smaller differences in wages than in labour productivity,
- the coverage of collective bargaining agreements and the strength of unions,
- the range of work experience of workers with high and low educational attainment,
- the relative incidence of part-time work at different educational attainment levels.

The earnings differentials by education do not tell us the exact return to education. Neither the net costs of higher education nor the net benefits of higher education are easy to calculate. Costs of education are not entirely borne by the individual where subsidies are given; nor is higher productivity of work only due to higher educational attainment of the individual because of the technology and managerial input associated with it.

In addition, individuals with greater innate ability (lower learning costs), tend to proceed with further education and training to a greater extent than less able ones; and they may also get higher wages than the less able ones with the same educational background (*Griliches,* 1977). Besides, the cost of education includes not only direct costs but also opportunity cost such as foregone earnings[9].

Another aspect, the expected duration of employment over the working life cycle, introduces a measure of uncertainty through the choice of an adequate discount factor (subjective rate of interest) of expected lifetime earnings (wage return to education and experience). Clearly, standard regression techniques cannot incorporate all information and allow inferences about all parameters.

Further factors which affect the net rate of return to education are

1. the tax system;
2. longer actual duration of education than the norm – this is relatively rare in the U.K.;
3. contributions to pension schemes.

[9] Foregone earnings are not only an important part of individual or private costs but also of social costs in terms of foregone taxes and social security benefits. The progressivity of the tax system has to be taken into account, in order to calculate the net individual and social returns to investment in education and training over the life cycle.

The first two factors diminish the net rate of return to education, the third factor enlarges the return. The estimated rates of return which follow should be understood with these qualifications in mind.

The Department of Education (1988) estimated that the return to individuals was 20-30 percent for higher education in the early 1980s, a study by *Bennett et al.* (1992), however, suggested that the return was significantly lower and in the order of 5 percent to 8 percent at that time.

*Table 15: Estimates of private and social rates of return to schooling by level, subject area and gender in the 1980s*

| | | Private | Social[1] | Private | |
|---|---|---|---|---|---|
| | | 1981-1985 | | 1985-1988 | |
| Level | Subject | Male and female | | Male | Female |
| | | 1 | 2 | 3 | 4 |
| Secondary | A-level | n.a. | n.a. | 6.0 | 9.8 |
| | Social sciences | 32.5 | 12.0 | n.a. | n.a. |
| | Engineering | 34.0 | 7.5 | n.a. | n.a. |
| Higher education | Natural sciences | 23.5 | 6.0 | n.a. | n.a. |
| | Arts | 10.0 | 0.5 | n.a. | n.a. |
| | All | 27.5 | 8.0 | 7.1 | 5.8 |

Source: *OECD* (1995), p. 55; column 1-2: Department of education and science 1988, 3-4: *Bennett et al.,* 1992. – [1] Corrected for taxes and public subsidies only.

An estimation of rates of return to education for a cohort of individuals (*Dearden,* 1998), who have been followed from birth to the age of 33 (in 1991) showed that the individual rate of return for another year of schooling was typically between 5 percent to 7 percent for men and 8 percent to 10 percent for women. The rich data set (National Child Development Survey[10]) does not only provide information on the labour market outcome of educational trajectories but also on family background (parents' education, social class) and ability (test at age 7). According to this data:

- Men in the top quintile of the mathematics and reading ability test have on average almost a year more full-time education than those in the bottom quintile of those tests.
- The positive impact of ability on duration of education is less pronounced for women but nonetheless also significant.
- The probability of undertaking a degree, increased by 15 percentage points for pupils in the top quintile of mathematics or reading compared to the bottom quintile.

[10] The NCDS is a census of all individuals born in one week in March in 1958, who are followed through their life.

The type of school attended is also an important determinant of educational outcomes:

- Children who attend government grammar schools (selective schools) or private schools have significantly better educational outcomes than those attending comprehensive schools (non-selective).
- The estimated probability of undertaking a degree is highest if a private school has been attended, followed by grammar school attendance; it is lowest if a comprehensive school has been attended.

The educational attainment level of parents is important for the educational outcome of children.

- Children with more educated fathers and mothers have better educational outcomes than children of less educated parents.
- For women it is above all the educational attainment level of their mothers which has an impact on educational outcomes.

Family size and birth order has an impact on educational outcomes:

- A larger number of siblings has a negative effect on educational outcomes.
- Older siblings have better educational outcomes than those further down the birth order.
- Women with only brothers have better educational outcomes.

The employment status of fathers is important for educational outcomes, not, however, that of mothers. Children of unskilled fathers have significantly worse educational outcomes than children of fathers in highly skilled occupations.

The financial family situation at the time of schooling has a significant impact on the educational outcome of youth.

This analysis proves that not only ability but also the degree of educational attainment of parents, their interest in the educational results of their children and financial means of the parents have a significant impact on educational outcome.

After having established the factors which have an impact on educational outcome, Dearden applied the traditional Mincerian earnings function and corrected for some of the above variables. Then the returns to another year of full-time schooling were calculated for men and women separately, using the traditional method of estimation of rates of return as a benchmark, i.e., 8 percent for men and 12 percent for women. When one controlled for region of residence the returns to another year of full-time schooling fell to 7.2 percent in the case of men and 11.6 percent for women. Controls for ability and type of school, result in the returns to another year of full-time education to drop to 5.2 percent in the case of men and to 10 percent in the case

of women. When one also controlled for family background and work characteristics (firmsize, industry, union member), the rate of return dropped to 4.8 percent for men and to 8.3 percent for women.

*Table 16: Rates of return to another year of full-time schooling*

$ln\ W_{it} = \beta_0 + \beta_1 S_{it} + x_{it} + u_{it}$

*Birth cohort 1958 in employment 1991*

| | Specification | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | $x1$ | | $x2$ | | $x3$ | | $x4$ | |
| | Coef. | (S.E.) | Coef. | (S.E.) | Coef. | (S.E.) | Coef. | (S.E.) |
| | Males | | | | | | | |
| Constant | 1.076 | (0.044) | 1.335 | (0.057) | 1.364 | (0.060) | 1.235 | (0.133) |
| Years of Education ($S$) | 0.080 | (0.004) | 0.072 | (0.004) | 0.052 | (0.004) | 0.048 | (0.004) |
| Number of observations | 2,597 | | 2,597 | | 2,597 | | 2,597 | |
| $R^2$ | 0.1494 | | 0.2139 | | 0.2635 | | 0.2949 | |
| | Females | | | | | | | |
| Constant | 0.189 | (0.052) | 0.478 | (0.070) | 0.494 | (0.077) | 0.722 | (0.147) |
| Years of Education ($S$) | 0.122 | (0.004) | 0.116 | (0.004) | 0.100 | (0.005) | 0.083 | (0.005) |
| Number of observations | 2,363 | | 2,363 | | 2,363 | | 2,363 | |
| $R^2$ | 0.2502 | | 0.2878 | | 0.3131 | | 0.4138 | |

Source: *Dearden* (1998), p. 17, 19.
$x1$ = raw return
$x2$ = controlled for region of residence
$x3$ = controlled for region, ability and school type
$x4$ = controlled for region, ability, school type, family background and work characteristics
$S$ = years of schooling beyond basic school
$u$ = error term

A differentiation of rates of return of the birth cohort of 1958 in 1991 by the highest educational attainment level at the age of 23 showed that there were significant returns to education beyond compulsory school. The raw return to a university degree was 71 percent for men (88 percent for women) compared to individuals with no more than compulsory education. The return to A levels was 55 percent beyond that of employed persons with compulsory education as the highest attainment level (for women 56 percent). If one controlled for ability, type of school, family background and job characteristics, the return to a university degree relative to compulsory education fell to 50 percent in the case of men and to 63 percent in the case of women.

Finishing upper secondary education offered relatively high financial rewards:

- A levels, comprising on average 2½ years of full-time education beyond compulsory education, are linked to about 37 percent higher returns than compulsory education.
- The annual return to a middle vocational qualification is around 12 percent (assuming 2 years beyond compulsory education).
- The annual return for higher vocational education, assuming 3.5 years of extra full-time schooling beyond compulsory education, is also around 12 percent.

These results show that men and women with nothing but compulsory education, have very low returns for their time spent in school.

*Table 17: The returns to schooling by educational attainment level and gender*

*Earnings function:* $\ln W_{it} = \beta_0 + \beta_1 S_{it} + x_{it} + u_{it}$
*Birth cohort 1958, highest educational attainment at age 23, in employment 1991*

| | Specification | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | $x1$ | | $x2$ | | $x3$ | | $x4$ | |
| | Coef. | (S.E.) | Coef. | (S.E.) | Coef. | (S.E.) | Coef. | (S.E.) |
| | Males | | | | | | | |
| Constant | 1.685 | (0.025) | 1.880 | (0.038) | 1.790 | (0.041) | 1.656 | (0.127) |
| Highest Qualification 1981: | | | | | | | | |
| Other | 0.157 | (0.031) | 0.132 | (0.030) | 0.109 | (0.030) | 0.097 | (0.029) |
| Lower vocational | 0.284 | (0.029) | 0.270 | (0.028) | 0.216 | (0.028) | 0.194 | (0.028) |
| Middle vocational | 0.353 | (0.029) | 0.342 | (0.029) | 0.274 | (0.029) | 0.251 | (0.029) |
| A Levels | 0.552 | (0.037) | 0.506 | (0.036) | 0.405 | (0.037) | 0.376 | (0.038) |
| Higher vocational | 0.549 | (0.034) | 0.526 | (0.033) | 0.444 | (0.033) | 0.419 | (0.034) |
| Degree | 0.707 | (0.031) | 0.658 | (0.031) | 0.530 | (0.034) | 0.501 | (0.036) |
| Number of observations | 2,597 | | 2,597 | | 2,597 | | 2,597 | |
| $R^2$ | 0.2263 | | 0.2892 | | 0.3106 | | 0.3352 | |
| | Females | | | | | | | |
| Constant | 1.343 | (0.023) | 1.611 | (0.040) | 1.532 | (0.045) | 1.582 | (0.133) |
| Highest Qualification 1981: | | | | | | | | |
| Other | 0.079 | (0.030) | 0.058 | (0.030) | 0.047 | (0.030) | 0.027 | (0.028) |
| Lower vocational | 0.173 | (0.027) | 0.157 | (0.027) | 0.122 | (0.028) | 0.084 | (0.027) |
| Middle vocational | 0.374 | (0.033) | 0.356 | (0.032) | 0.302 | (0.035) | 0.229 | (0.034) |
| A Levels | 0.562 | (0.038) | 0.541 | (0.037) | 0.479 | (0.039) | 0.372 | (0.039) |
| Higher vocational | 0.671 | (0.034) | 0.655 | (0.034) | 0.606 | (0.036) | 0.452 | (0.037) |
| Degree | 0.882 | (0.032) | 0.832 | (0.032) | 0.754 | (0.037) | 0.636 | (0.040) |
| Number of observations | 2,363 | | 2,363 | | 2,363 | | 2,363 | |
| $R^2$ | 0.3333 | | 0.3702 | | 0.3788 | | 0.4447 | |

Source: *Dearden* (1998), p. 21,22.
$x1$ = raw return
$x2$ = controlled for region of residence
$x3$ = controlled for region, ability and school type
$x4$ = controlled for region, ability, school type, family background and work characteristics
$S$ = years of schooling beyond basic school
$u$ = error term

Other data sets – the Family Expenditure Survey (FES), the Family Resources Survey (FRS), and the British Household Panel Study (BHPS) – were used by *Chevalier – Walker* (2001) to answer questions associated with economic returns to education. The availability of FES and GHS, i.e., cross section data sets, over a long stretch of years allows the investigation of the stability of returns over time. A short résumé of some of the results follows:

- The rate of return to education was in the different studies between 6 percent and 9 percent for men and between 8 percent and 12 percent for women.
- Although men earn more than women, on average, for all levels of education, the relationship between education and wages is flatter for men than for women.

- There is a tendency for returns to education to rise in the late 1980s and early 1990s, in spite of significant increases in the higher education participation rate, very likely, because of widening differentials for skill.
- The returns to experience (age) are small for women but quite large for men.
- Returns to education are significantly lower for non-whites than for whites.
- The return to a university degree relative to A levels differs significantly by subject of study (*Harkness – Machin,* 1999):
  - Science/engineering degrees and social science/business degrees offer the highest return to further education.
  - Arts/humanities degrees have the lowest return to further education.
- Returns to degrees increased for women in Science (including medicine) and Engineering as well as in Arts/Humanities and decreased in law and others since the early 1980s.
- Returns to degrees for men increased for all subjects in the 1980s and decreased in the 1990s for all subjects except Arts/Humanities, where the return has never been significantly different from zero compared to A levels.

It is very difficult to disentangle sectorial differences in returns to education from occupational ones. Certain occupations are almost invariably public sector jobs, e.g. medical professions and teachers, and others private sector jobs, e.g., sales personnel. In any case, calculations for the U.K. suggest that there is no difference in the return to education for women in public sector jobs compared to the private sector and the difference for men is minimal (the public sector offering a 1 percent lower rate of return to another year of education)[11].

The analyses of rates of return for the U.K. so far, have only been in terms of gross returns to education, not taking income related taxes and transfers into account. *Chevalier – Walker* (2001) have used net earnings data from BHPS and GHS (General Household Survey) and calculated returns to education. On average net returns to education are about 20 percent lower than the corresponding gross returns. The net returns to another year of education are then 5 percent for men and 7 percent for women.

### *Contribution of the educational system to labour productivity*

The expected benefit to society of post-compulsory education, is a higher level of productivity. It is not a simple matter to make comparisons of labour productivity over time and across countries (*Biffl,* 2001). Differences between GDP per capita, an indicator of the living standards of a country, and per working hour, an indicator of the competitiveness of the economy, arise, apart from the

[11] For a differentiated account see *Disney et al.,* 1998.

socio-economic development level of the economy, the technology and product-mix, the differences in the skill level of the work force, and from differences in:

- annual working hours per worker,
- the proportion of employed persons in the labour force,
- the activity rate and
- the proportion of the population of working age in total population.

If we look at the differences of GDP per capita, the U.K. had, with an output (valued at current market prices using PPPs) of 21,218 USD in 1998, a somewhat lower standard of living than Austria with 23,073 USD and the Netherlands (22,887 USD). The Netherlands and Austria are in the middle of a ranking of OECD countries by GDP/capita. The countries with the highest GDP/capita are, apart from the special case of Luxembourg, the United States (30,394 USD, +30 percent versus the U.K.), Germany (27,569 USD, +23 percent) and Denmark (26,297 USD, +19 percent). GDP per capita in the U.K. was about 10 percent below the OECD average.

*Table 18: Employment, productivity and per capita output (GDP), 1998*

*Output valued at current market prices using PPPs, USD*

| | Output per employed person | Output per capita |
|---|---|---|
| Luxembourg | 64,742 | 34,701 |
| United States | 62,214 | 30,394 |
| Germany | 55,002 | 27,569 |
| Norway | 49,117 | 26,611 |
| Switzerland | 52,426 | 26,297 |
| Denmark | 48,682 | 26,297 |
| Canada | 47,112 | 24,106 |
| Japan | 65,053 | 24,103 |
| Belgium | 52,562 | 24,003 |
| Austria | 48,781 | 23,073 |
| The Netherlands | 52,563 | 22,887 |
| Australia | 49,848 | 22,697 |
| Ireland | 55,585 | 22,429 |
| France | 57,440 | 22,089 |
| Italy | 62,187 | 21,999 |
| Finland | 50,474 | 21,677 |
| United Kingdom | 47,186 | 21,218 |
| Sweden | 47,029 | 21,162 |
| New Zealand | 40,193 | 17,801 |
| Spain | 50,129 | 16,743 |
| Portugal | 31,475 | 15,242 |
| Greece | 38,728 | 14,411 |

*Source: OECD* (2000A), p. 17.

GDP per employed person is 3 percent lower in the U.K. than in Austria, equal to Sweden and Canada, and quite a bit lower than in the United States (–24 percent). The differences in productivity arise, apart from technological and economic development levels and human and physical capital endowment, from a different age structure of the population, from different activity

and employment rates. Differences in hourly labour productivity do not seem to be great. Even though the actual working hours per worker are known only with a high degree of uncertainty, evidence suggests that Austria lags behind the United States by some 6 percent to 10 percent, is fairly even with Denmark, the Netherlands and Japan and surpasses the EU average by some 15 percent.

One has to bear in mind that a direct linkage of an individual's income or wage with a particular productivity level, is difficult and conceptionally problematic. In any complex work relationship, the output is the result of a division of labour, in association with physical capital and a particular range of technology, in which individuals are allocated to those tasks for which they are trained to do most effectively. The output is then more than the sum of all individual inputs and can thus not be attributed to a single unit but rather to the aggregate. As a result one may distinguish productivity levels at the micro-level for enterprises, at the meso-level for industries, and at the macro-level as done in table 18.

There has been concern that the former concentration of U.K. production on heavy industry would leave certain geographical regions in a 'low skills equilibrium'[12]. Only investment in higher skills offers the chance to move into higher value added segments of the market and opportunities to raise productivity. Certain areas are facing skill gaps, not shortages, i.e., the skills of the existing work force are a constraint to the development potential of enterprises.

Another aspect, which hampers productivity growth and the competitive position of the U.K. is the lack of social cohesion; an effect of sustained high levels of unemployment in the 1980s and early 1990s and the growth of relative poverty levels and income inequality over that period.

*Social rates of return*

The Department of Education study estimated the social rate of return of higher education, which takes the cost of government funding of education into account, at 5 percent to 8 percent (Table 15). This rate appears to be relatively low, which may be due to the methodology employed. The study relates to the rates of return to previous generations of students, which may not be relevant to the present cohorts, particularly as pay differentials have widened lately for highly skilled personnel.

More recent calculations by *Chevalier – Walker* (2001) come up with somewhat higher results. They take into account that educational expansion has positive effects for government revenue by increasing labour force participation and hours of work, and thus the tax base, and by reducing government expenditure on transfer payments. The net effect of an additional year of education for

[12] The term was coined by *Finegold – Soskice* (1988) to point out that there was a general understanding on the part of social and political actors not to promote restructuring of production towards high quality and technology intensive goods and services because of a lack of the necessary skills of the work force.

overall government revenue per individual outstrips thus the present value of the additional tuition expenditure at any reasonable discount rate.

## The concept of lifelong learning

The U.K. Government seeks to develop a 'learning society' in which everyone expects to learn and upgrade skills throughout life. It sees lifelong learning as one of the keys to prosperity – for individuals, businesses and the economy – and to the promotion of active citizenship. With that objective in mind several initiatives have been taken, which have been mentioned in the section on adult education and training. In addition to the novel concepts of the University for Industry (UfI) and the Individual Learning Accounts (ILA) other tools have been developed, e.g., Investors in People – currently some 35 percent of all employees are in organisations, which are recognised as Investors in People or which are striving to achieve the National Standard of Investors in People[13]. The government has also set up Adult and Community Learning Funds to support community based activities including learning opportunities, particularly geared towards including people in education who feel excluded from mainstream education. This has to be seen in the context of the results of the International Adult Literacy Survey (IALS), in which the U.K. surfaced as a country with an above average proportion of adults with poor basic skills. Since literacy and numeracy are becoming increasingly important as changes in information and globalisation put a greater premium on information processing skills, the U.K. has put particular effort in reducing the number of people with only compulsory education as their highest educational attainment level.

As a result of increased efforts in continued education and training the U.K. had an above average share of adults in continued education in the mid 1990s, only surpassed by Sweden (Table 19).

Research shows that initial education has an important role to play in lifelong learning. People who have completed general upper secondary education take part in enterprise training to a larger extent than people with vocational upper secondary education or apprenticeship training. This is one reason for the high returns to the general initial education stream over the working life compared to other educational paths.

The IALS survey indicates a clear positive correlation between continuous education and training and the educational attainment level of the population. While only 12 percent of all 25-64 year olds with less than lower secondary education undertook some education and training in the 12 months preceding the survey, 35 percent of those with compulsory education did so, 54 percent of those with upper secondary education, 66 percent of those with non-university tertiary education did so and 75 percent of university graduates.

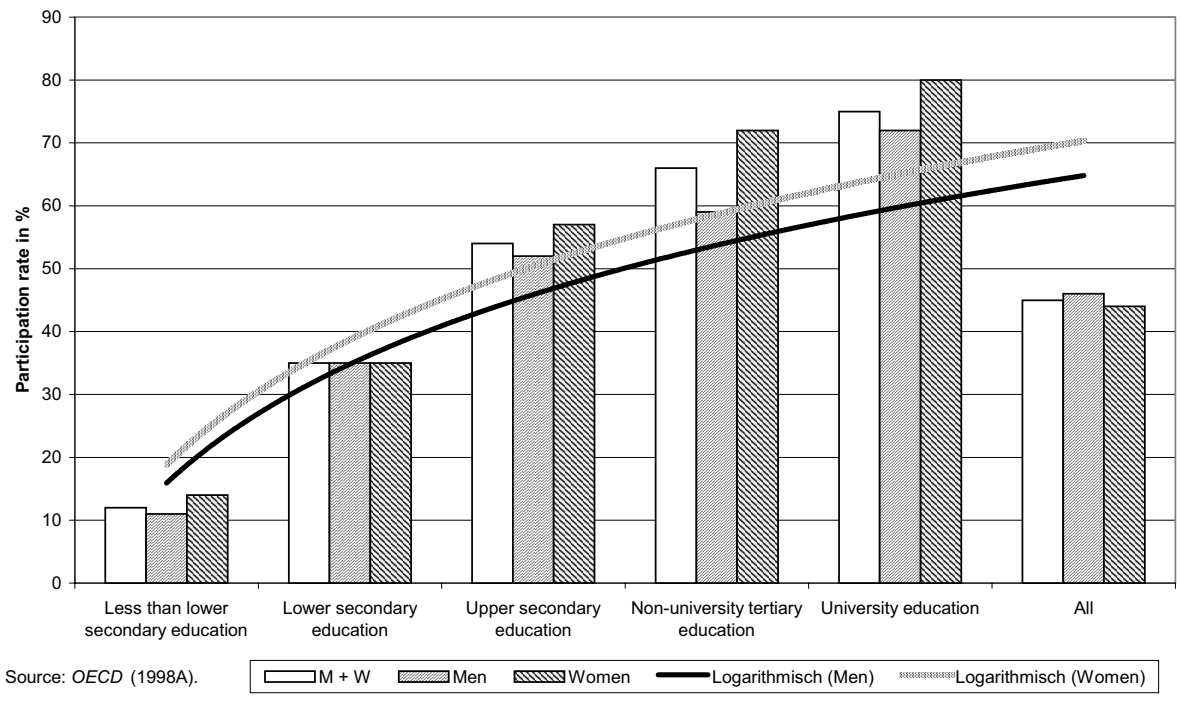
[13] To become a recognised Investor in People a certain level of investment as a percentage of payroll or of value added has to be proven and a certain number of training and development days have to be offered per employee.

*Table 19: Participation rate in education and training of the 25-64 year olds by gender and age group 1994-95*

| | | Age 25-34 | Age 35-44 | Age 45-54 | Age 55-64 | All |
|---|---|---|---|---|---|---|
| Australia | M + W | 42 | 40 | 32 | 20 | 36 |
| | Men | 46 | 40 | 33 | 20 | 37 |
| | Women | 38 | 41 | 32 | 20 | 34 |
| The Netherlands | M + W | 46 | 41 | 32 | 16 | 36 |
| | Men | 51 | 42 | 36 | 13 | 38 |
| | Women | 42 | 40 | 29 | 20 | 34 |
| Sweden | M + W | 56 | 61 | 58 | 38 | 54 |
| | Men | 57 | 58 | 54 | 37 | 53 |
| | Women | 54 | 64 | 62 | 40 | 56 |
| Switzerland | M + W | 52 | 45 | 39 | 25 | 42 |
| | Men | 55 | 43 | 39 | 29 | 44 |
| | Women | 47 | 46 | 40 | 22 | 40 |
| United Kingdom | M + W | 54 | 54 | 42 | 23 | 45 |
| | Men | 57 | 52 | 44 | 23 | 46 |
| | Women | 51 | 55 | 40 | 24 | 44 |
| United States | M + W | 46 | 46 | 44 | 28 | 42 |
| | Men | 45 | 49 | 45 | 23 | 42 |
| | Women | 46 | 44 | 43 | 32 | 42 |

Source: *OECD* (1998A), p. 214.

*Graph 4: Percentage of 25-64 year olds participating in education and training by highest level of educational attainment and gender (1994-95)*




Source: *OECD* (1998A).

## Conclusion

A major thrust of U.K. policy over the last decade has been to improve the competitiveness of the U.K. economy through narrowing the productivity gap between the U.K. and its competitors. Much of policy has been focused on the supply side to enhance the skills and productive potential of the work force through educational and training – 'learning' as it is currently referred to – in particular, vocational education and training, in which, by comparison with its EU competitors, the U.K. is still well behind. The deficit in vocational skills is compounded by a very low level of literacy and numeracy, a deficiency which carries a lasting problem for further learning.

A Labour Government came into office in 1997 pledged to give the highest priority to the promotion of learning at all levels. Its ambitious agenda for the new millennium is reflected in its statement in the 1998 Green Paper which voiced its educational vision:

> Our vision is to build a new culture of learning which will underpin national competitiveness and personal prosperity, encourage creativity and innovation and help build a cohesive society.

Its priority is reflected in its immediate commitment of 19 billion pounds of extra resources over three years.

The new education policy is designed not merely to increase productivity and employment, but also to help lift a significant proportion of young people who are marginalised for want of adequate skills or are socially disadvantaged, into regular employment with prospect of advancement through lifelong learning opportunities inherent in the Government education programme.

Success is already evident in the literacy and numeracy outcomes of primary education. The plan for secondary education is to produce a situation in which, before long, every young person will have secured at least the upper secondary qualification level 2 (equivalent to between ISCED 2 and 3). This is generally regarded as the minimum requirement for secure employability and also to provide the basis for further learning. The retention rate at the upper secondary level has risen substantially in the last decade although it is still lower than that of many EU countries.

The new approach to vocational education and determined intention to remove its popularly perceived status of 'second best', is not to be seen as downgrading higher education and reducing the traditional standing of general and academic education, but rather to advance on both fronts.

The Government is committed to substantial increases of funding for learning. In relation to higher education for which a disproportionate government expenditure per student is incurred, students will be expected to contribute more than in the past. In respect of vocational and lifelong learning, it has set up a scheme known as 'Individual Loan Accounts' to encourage those in employment to put aside into special accounts, money to be spent on education in due course. Subsidies and tax benefits have been provided for this purpose; and although the scheme is in its infancy, it is at least

doubtful if those who need to upgrade their skills most, will have sufficient incentive to avail themselves of this facility.

Apart from structural changes in the administration of the education system, there have been important changes in the system itself. At the secondary education level, while Grammar Schools will continue to cater for those destined for higher education, Comprehensive and Modern Schools have introduced vocational courses into their curriculum at the upper secondary level.

Progression from Grammar Schools is normally to universities although many from Comprehensive Schools also move in that direction. The alternative education route is to the Further Education Colleges which prepare students for a wide range of professions and occupations.

In respect of work-based occupational training, the long neglected apprenticeship system has been given a new lease of life, renamed Modern Apprenticeship, made its courses more flexible by modularisation and more focussed on core skills, and extended its scope into new sectors, including business an commerce. For those who may find Modern Apprenticeships too demanding, a lower graded course, the National Traineeship scheme is available for a wide range of training frameworks, while progression to Modern Apprenticeship from that level is possible. There are various other work-based training arrangements, some being capable of integration into active labour market policy.

A Skills Task Force has been set up to review skill shortages and to communicate with the relevant institutions their findings. As an adjunct to the concept of lifelong learning, another new body has been established, the University for Industry, to act as a one-stop-shop network of advisory centres, to advise potential students and employers about courses which are available for a wide range of purposes. The system is also accessible electronically. In all these initiatives, employers have been actively involved as partners.

The expansion of educational facilities, the intake of more students, and the raising of quality outcomes, obviously calls for more teachers at all levels. This is also a matter which has exercised the Government and has led to a review of pay and conditions of teachers.

The achievement at the institutional level is impressive and bodes well for the future. However, the outcome so far has not been altogether a bed of roses. Particularly on the various vocational learning initiatives, there have been problems. The narrowness of vocational course, teaching and assessment methods, the standards of private providers – all these and more have brought criticism and calls for improvement. Although school and further education retention rates have risen, there has also been a waste of resources from a substantial drop-out from courses.

A major programme of reform of the kind undertaken in the U.K. may be expected to have teething problems. But there are no signs of faltering in the Governments determination to continue on the 'Learning Age' road which it mapped for the country soon after it came into office. The urgency to do so is spurred by the need to remove the gap between its educational

performance, particularly in the output and quality of vocational skills, and its productivity performance and that of competing countries.

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