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The mature-aged and skill development activities

A systematic review of research

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A systematic review of research

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Publisher's note

Additional information relating to this research is available in the associated report *An aid to systematic reviews of research in vocational education and training in Australia*. It is available in print or can be accessed from NCVER's website <<http://www.ncver.edu.au>>. There is also a support document available on the NCVER website.

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Key messages

- ✧ Through a systematic review of existing research, evidence has been found that skill development activities lead to improved labour market outcomes for some mature-aged people (in terms of higher employment rates or wages), especially for those who were previously unemployed, and for women.
- ✧ Evidence has been found that labour-market-related gains are greater for the mature-aged who complete higher-level qualifications. Gaining lower-level qualifications or incomplete qualifications may have a negative effect on labour-market-related gains for some older people.
- ✧ The specifics of which skill development activities work, when, and for which groups of mature-aged are sparse in this systematic review, as the included studies mostly focused on the level of 'qualification' acquired, or simply referred to 'training' as the skill development activity.
- ✧ Three main factors emerged as barriers to skills development of mature-aged people while providing ideas for facilitating this development. The factors leading to improved attachment to the labour market or improved productivity are:
 - ◆ attitudes and behaviours of employers and employees towards older people working and to learning new skills and knowledge
 - ◆ individuals' personal circumstances and attitude to learning
 - ◆ public policy beyond vocational education and training, such as some aspects of superannuation and retirement income policies.
- ✧ Through this systematic review, the need for further research was revealed, especially to identify which skill development activities work, when, and for which groups of mature-aged. Evidence from such research would complement the large-scale data analyses already undertaken which have yielded the above results. It may also offer supporting evidence to promote lifelong education and training.
- ✧ It is proposed that this systematic review will be updated over the next 12 months.

Executive summary

This study set out to find evidence on whether participation in education and training improves older people's productivity and keeps them in paid employment for longer. We were interested in this topic because one of the implications of Australia's ageing population is a predicted skills shortage. Older workers remaining longer in the paid workforce and their participation in further education and training have often been cited as the main answer to overcoming the predicted skills shortage. While we know that many older Australians (45 years and over) are up-skilling or retraining in order to maintain gainful employment or pursue other interests, what we do not know is the extent to which education and training makes a difference in reversing the trend of early retirement and improving older worker participation in the labour market.

A systematic review of existing research was the chosen approach. For the National Centre for Vocational Education Research (NCVER), it was the first systematic review conducted in a vocational education and training (VET) context in Australia. How we did it, and what we learnt from the process is the subject of an associated report (Anlezark, Dawe & Hayman 2005). This report presents the evidence found to answer the review question.

The agreed review question was:

What evidence is there that skill development activities for the mature-aged (45 years and over) lead to:

- ✧ *improved attachment to the labour market?*
- ✧ *improved productivity?*

Implied in the review question were the issues of:

- ✧ factors that have an important bearing on these key outcomes, either as barriers or facilitators
- ✧ implications of this review for VET policy, practice and research.

All aspects of these questions were detailed in the framework developed as part of the review process (see appendix B) and, with a starting point of over 2000 references to studies, in-depth reviews were conducted on 33 studies considered to be highly relevant to our review questions. Of the 33 reviewed studies, 11 were found to be of sufficient relevance and quality to provide answers to the review question and related issues: seven studies provided evidence for improved productivity or labour market attachment, and seven for barriers or facilitators (three studies were used for both).

Improved productivity and attachment to the labour market

From the seven studies in whose findings we can have confidence, three key points emerge:

- ✧ There is evidence that education and training undertaken by older people can result in individual gains (employment or higher wages); the greater gains are for those who were previously unemployed, and for women more so than for men (the latter result possibly being because men have higher labour force participation rates to begin with).

- ✧ There is evidence that labour-market-related gains are greater for the mature-aged who complete higher-level qualifications. Gaining lower-level qualifications or incomplete qualifications may have a negative effect on labour-market-related gains for some older people who undertake skill development activities.
- ✧ The specifics of which skill development activities work, when, and for which groups of mature-aged are sparse in the review report, as the included studies mostly focused on the level of ‘qualification’ acquired, or simply referred to ‘training’ as the skill development activity.

The factors that act as barriers or facilitators

Three main factors affecting whether or not the mature-aged undertake skill development activities and achieve positive labour market outcomes were identified. These were:

- ✧ attitudes and behaviours of employers and employees towards older people working and to learning new skills and knowledge
- ✧ individuals’ circumstances (for example, health, carer responsibility, financial and socioeconomic status, access and opportunity to train) and attitude to learning
- ✧ public policy outside vocational education and training, especially in relation to eligibility for age pension or superannuation funds, as this links to the time that individuals have to realise their investment in training.

Implications for VET policy, practice and research

The review indicates that policy-makers in VET should continue to encourage skills development for the mature-aged as a means of improving their productivity and longevity in the labour market. However, they need to be mindful that skill development activities alone are not likely to be sufficient.

There needs to be a package of measures to remove the barriers that many older workers face to training and to their subsequent attachment to the labour market, including:

- ✧ changing attitudes and behaviours in our whole community to older workers
- ✧ addressing disincentives to continuing on in employment, such as some aspects of current superannuation and retirement income policies
- ✧ tailoring skill development activities for the mature-aged to suit their circumstances.

The review has also uncovered a need for more research to enable a better understanding of the particulars of which skill development activities work for which particular groups of mature-aged people, and under what circumstances.

Even before this report was completed, additional new reports were found and other research commenced. Therefore it is proposed to update this first systematic review over the following 12 months.

Introduction

A policy question to be answered through a systematic review of existing research was developed by the project steering group (whose members are listed in appendix A). This report addresses the agreed review question:

What evidence is there that skill development activities for the mature-aged (45 years and over) lead to:

- ✧ improved attachment to the labour market?
- ✧ improved productivity?

Implied in the review question, and to be reported in the research findings and final report, were the issues of:

- ✧ the factors that have an important bearing on these key outcomes, either as barriers or facilitators
- ✧ the implications of this review for vocational education and training (VET) policy, practice and research.

For the National Centre for Vocational Education Research (NCVER), this was the first systematic review conducted in a vocational education and training context in Australia. We drew on the experiences of other organisations, in particular, the United Kingdom Evidence for Policy and Practice Information and Co-ordinating Centre and the Learning and Skills Development Association. How we did it, and what we learnt from the process is the subject of an associated report (Anlezark, Dawe & Hayman 2005).

This report focuses on the evidence found in relation to the review question noted above, the barriers and facilitators to achieving these outcomes, and the implications for policy, practice and research, as directed by the project steering group. The transparency required by a systematic review is observed through the associated report and other supporting material on the NCVER website.

Background

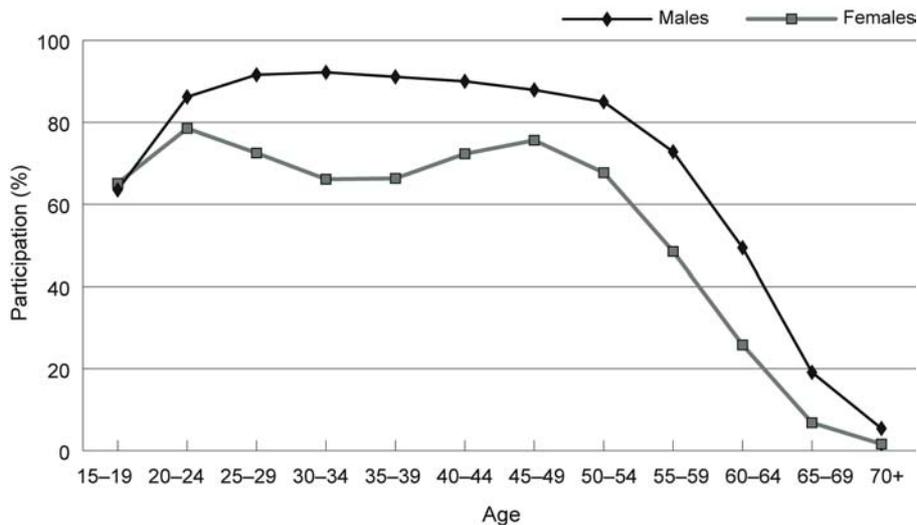
The ageing population

The ageing population has been the subject of much recent debate in Australia sparked by the Australian Government's *Intergenerational report* (Department of the Treasury 2002–03). Australia, like most developed countries, has an ageing population brought about by declining fertility rates and increasing longevity. One of the implications of the ageing of the population is a potential reduction in the future supply of labour and consequent diminished economic prospects.

The extent to which there will be a labour market crisis in Australia will be partially offset by younger workers entering the labour market with higher average education attainment levels than in the past, and with resultant higher work productivity. Furthermore, the potential crisis in the Australian labour market may be ameliorated by the increased education attainment of women which is contributing to the decline in fertility rates, but which will increase female participation in the labour market (Day & Dowrick 2004).

A more recent report into the economic implications of an ageing Australia notes that, while ageing should not be blamed for any future economic pains, it does raise major policy challenges (Productivity Commission 2004). In looking for ways to address the effects of ageing on the Australian workforce, the report notes that migration policies are not the answer, as only very large migration flows could make a difference, and there is increasing global competition for the available labour. Encouraging older workers to remain in the labour force is cited as the major means of addressing the projected overall reduced supply of Australian labour. There is room for this to occur. As illustrated in figure 1, people 50 years and over at present reduce their participation in the Australian labour market at quite a steep rate.

Figure 1: Labour force participation by age



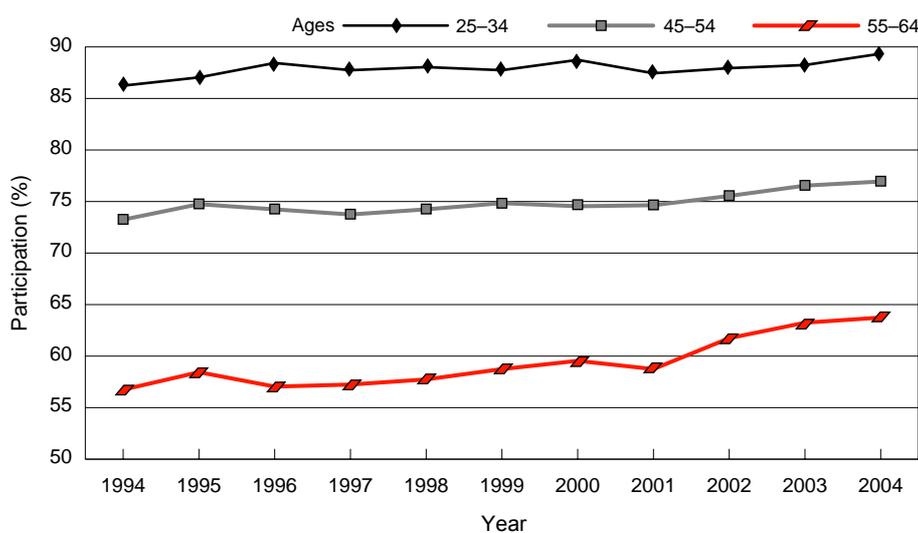
Source: ABS (2005)

The Organisation for Economic Co-operation and Development (OECD) also notes in its recent report on the topic of encouraging older workers to remain in the workforce, that the proportion of people aged 50–64 years participating in the labour market is lower in Australia (men less than 70%; women less than 50%) than on average across other OECD countries. In Australia, participation rates have been declining for some time for older men, and while they have been increasing for women in the past 25 years, there is scope to increase both female and male participation rates further (OECD 2004b). However, there already appears to be some improvement in the employment of males 55–64 years in the last four years as seen in figure 2.

Is training the answer?

We know that many older Australians are up-skilling or retraining in order to maintain gainful employment or pursue other interests. In 2002, 6.9% of people aged 45–64 years participated in the public VET system. However, training is broader than the public VET system, particularly for older workers. In assessing the bigger picture, we looked to the Australian Bureau of Statistics (ABS) 2001 Survey of Education and Training and found that 16.2% of people aged 45–65 years had completed at least one external (to the workplace) training course in the 12 months prior to the survey. We also know that some older Australians are more likely to participate in training than others. Those who undertake training later in life tend to be those still in the labour force, and those who have already completed some form of post-school education. In fact, the higher the level of prior education, the more likely the older person is to participate in further training. We also know that the nature of the work and the work culture influences older Australians' participation in training (Anlezark 2004). What we do not know, and set out to find evidence for in this project, is the extent to which education and training makes a difference in reversing the trend of early retirement and improving participation in the labour market.

Figure 2: Annual labour force participation rates for males, 1994–2000



Source: ABS (2005)

Considerations

We were mindful of several other large research studies being undertaken in the area of the older worker when we set out to undertake this first systematic review of research. The OECD was tackling the big picture, looking at ageing and employment policies across 20 countries, including Australia (OECD 2004b). The United Kingdom Learning and Skills Development Agency was commencing a study to look broadly for evidence on effective ways to widen adult participation in learning (Taylor et al. in press). The Productivity Commission was looking at the economic implications of an ageing Australia (Productivity Commission 2004). Given these broader studies, we chose a more narrow focus for this review; and one linked specifically to VET policy.

Framework development

A systematic review of research requires the development of a detailed framework covering the review question(s), definition of key words, the scope of the review, and an outline of the steps to be taken in the review process. The framework (provided in appendix B) also includes the criteria used for appraising the quality of the included research studies.

We knew that the issue of an ageing population is not unique to Australia, with many other industrialised economies facing the same issue. So in the search for answers to our policy question, we extended our search beyond Australia to see what research had been undertaken on this topic in other countries and which might be transferable to the Australian context.

Results

A first search on all key words in the framework yielded 2011 research studies. Through the application of our relevance criteria to the titles or abstracts in an iterative process, we reduced the initial studies to a final list of 34. A full copy of one study could not be obtained, resulting in 33 studies earmarked for in-depth review. The reviewers rated each of the 33 studies for both relevance and quality of findings to answer the review question (weight of evidence A and B respectively), and gave an overall weighting for each of these dimensions on a five-point scale. The matrix in table 1 shows the results. The originally assigned identity numbers are used as a reference for those studies which are included throughout this report.

Table 1: Appraisal results of the 33 included studies

		Weight of evidence B (quality)				
		High	Medium plus (+)	Medium	Medium minus (-)	Low
Weight of evidence A (relevance)	High	91		45		
	Medium plus (+)	(2), 90	85	(74)		
	Medium			(68)	4, 49, 89	18, 33*
	Medium minus (-)	78, 81	44, (57), (73*)	(17), 83, (88*)	6, 29, 36, 87	38
	Low	86		10, 14	66, 70, 77	20, 43

Notes: The numbers in the table refer to the identification number allocated to the study.

The study number in bold indicates that it contains evidence for the review question; the number in brackets indicates that it contains information on barriers and facilitators.

See appendices C and D for more detail on the studies referenced in table 1.

Seven of the 33 reviewed studies provided evidence that skill development activities undertaken by the mature-aged can lead to improved attachment to the labour market and touched on what worked, for whom and when (91, 2, 90, 85, 45, 74, 68). Three of these studies also addressed the issue of barriers and facilitators (2, 68, 74), to which we added four additional studies that also addressed this particular issue and were considered to have a satisfactory quality rating (studies 17, 57, 73, 88). The 11 studies used in this report are summarised in appendix C.

It is important to note that, in this first systematic review, all relevant studies were included, irrespective of the type of documents; that is, the 33 reviewed documents included primary and secondary research, policy and other related documents. Some of the remaining 22 studies listed in table 1 simply assumed, rather than demonstrated, that skill development activities improved attachment to the labour market or examined policies addressing the ageing workforce issue. Others were unable to make the direct link between skill development activities and labour market outcomes. Most of the 22 studies probably should not have passed the inclusion criteria for review, but as this was our first systematic review, we erred on the side of caution. Spending more time at the screening stage is one of the key lessons we have learnt (see associated report: Anlezark, Dawe & Hayman 2005). The 22 studies included in the in-depth review process but not included in the body of this report are listed in appendix D for completeness, and the transparency required by the systematic review approach.

Do skill development activities undertaken by the mature-aged improve work productivity and/or labour market attachment?

The studies

Seven studies were identified as meeting the criteria for relevance and quality of findings to answer the review question and are briefly described below.

The seven studies in whose findings we have confidence for the review question are:

91: Jenkins, A, Vignoles, A, Wolf, A & Galinda-Rueda, F 2002, *The determinants and effects of lifelong learning*, Centre for Economics of Education, London School of Economics and Political Science, United Kingdom.

A study undertaken in the United Kingdom which uses a longitudinal data set of a cohort of individuals born in 1958 from the National Child Development Study. The study models the effects that possessing a qualification have on individuals' economic outcomes, namely wages and the likelihood of being employed. It concentrates on qualification-oriented learning of individuals between the ages of 33 and 42 years.

90: Karmel, T & Woods, D 2004, *Lifelong learning and older workers*, NCVET, Adelaide.

This is an Australian study using Australian Bureau of Statistics data sets (education and training; education and work) to examine and predict the role education and training play in the participation of older persons in the labour market. Age range considered was 40–64 years.

85: Jacobson, L, La Londe, R & Sullivan, D 2003, *Should we teach old dogs new tricks? The impact of community college retraining on older displaced workers*, Federal Reserve Bank of Chicago, United States.

This study was undertaken in the state of Washington and analyses longitudinal administrative data covering workers who were displaced from jobs in the first half of the 1990s. Models for analysis were developed to allow comparisons between older and younger workers who took community college training and those who did not. Age range of older workers was 35-plus years.

68: Blondal, S, Field, S & Girouard, N 2002, *Investment in human capital through post-compulsory education and training: Selected efficiency and equity aspects*, OECD, Paris.

An OECD study of surveys and secondary data sources associated with efficiency and equity outcomes of skill acquisition by all workers. A small section of the paper is devoted to issues of the 40-plus years age group.

45: Hill, ET 2001, 'Post-school-age training among women: Training methods and labour market outcomes at older ages', *Economics of Education Review*, vol.20, no.2, United Kingdom/ United States of America.

A United States study using the Mature Women's Cohort of the National Longitudinal Survey to examine labour market effects of education and training on women at pre-retirement ages. This involved a comparison of training methods—formal education, on-the-

job training, and other training. The survey period began in 1967 when the women were from 30 to 44 years of age and concluded in 1984 when they were between 47 and 61 years.

74: Naegele, G 1999, *Active strategies for an ageing workforce: Conference report*, Office for Official Publications of the European Communities, Luxembourg.

The conference of the European Foundation for the Improvement of Living and Working Conditions, an autonomous body of the European Union, examined the development, implementation and assessment of 'active strategies'—the policies and practices to promote opportunities for an ageing workforce. These include the evaluation of different programs from many different countries, especially the Finnish Programme for Ageing Workers (1998–2000) which adopted a multifaceted approach to dealing with an ageing workforce. Other examples, especially from Spain and Italy, illustrate holistic approaches to re-integration of those disadvantaged in the labour market.

2: Wooden, M, Vanden Heuvel, A, Cully, M & Curtain, R 2001, *Barriers to training for older workers and possible policy solutions*, Department of Education, Training and Youth Affairs, Canberra.

This is an Australian study which involved analyses of Australian Bureau of Statistics and the Australian Workplace Industrial Relations Survey data as well as focus groups and case studies. The report focuses on differences in the incidence of work-related training across age groups, types of barriers faced by older workers, and the types of initiatives introduced both by governments and employers to enhance training opportunities and outcomes for older workers. Age range of older workers was 35-plus years.

Overview of the seven studies

The seven studies were completed within the last five years, although it is worth noting that the data analysis of the United States Mature Women's Cohort (45) examined training results from 20 years ago.

The methodologies of the studies have much in common. All give some attention to the existing literature and most conduct analyses of national or international databases (91, 90, 85, 68, 45, 2). The analysis of longitudinal data is a substantial component of three studies (91, 85, 45) and, given the focus on labour productivity outcomes, we also find economic models play an important part in the analyses conducted in most of the studies. Two studies (74, 2) could be described as more broadly focused, in that evidence was collected from a variety of sources, including from older people themselves.

One study (68) has a broad international focus and involves the analysis of data from OECD countries. Study 74 reports on 'active strategies' and programs in Finland and various other countries in the European Union. Two studies (90, 2) are national Australian studies. Two are based in the United States of America: one a state-based study (85) and the other national (45). The remaining study is from the United Kingdom (91).

While 45 years and over was chosen to define 'mature age' in this review, there is not a universally agreed definition for mature-aged: as mentioned in the introduction, the Taylor et al. (in press) review is using 40 years, and the OECD report is using 50 years. In this review, one of the Australian studies (90) used 40 years and over. The other Australian study (2) and one of the United States studies (85) used 35 years and over as the definition of mature-aged. The United Kingdom study on lifelong learning (91) uses a cohort aged 42 years, but looks at skill development activities when they were younger (33–42 years) than the age group targeted in the review question. However, it was seen as having potential relevance to those over 45 years. Three other studies (85, 68, 90) also deal with a lower age range (the former using 'over 35 years', while the latter two use 'over 40 years') than our target population of 45 years and over.

Also of particular note is the nature of the skill development activities covered in the seven studies. The Australian study (90) uses qualifications as the indicator of participation in education and training or 'skill development activities'. Similarly, the United Kingdom study (91), defines skill development as 'gaining a qualification' including A levels, O levels and secondary school certificates through to the professional degree-level qualifications on the academic side, and National Vocational Qualifications levels 1 to 4 on the vocational side. Only in one study, the United States study (85), was the attainment of subjects or less than a full qualification considered, while one other (45) specifically mentions on-the-job training.

As indicators of improved attachment to the labour market and improved productivity, the seven studies focus on employment rates as a measure of the former, and wages as the measure of individual productivity.

The overview of the seven studies is summarised in table 2.

Table 2: Summary of features of seven key studies

Study ID	Time period and location	Research methods	Population	Skill development activity	Labour market outcome
90	1978–2003; Australia (national data collections)	Quantitative research: data analysis and economic modelling	40 years to 64 years	Qualification level	Employment-to-population rates
2	Mid-1990s–2000; Australia (national ABS data collection)	Mixed methods: quantitative research: data analysis of secondary data; and qualitative research i.e. focus groups undertaken in 1999; three case studies of 'best practice' firms	45 years and over	Training undertaken in the last 12 months; in-house structured training; external training; on-the-job unstructured training and educational study; for those unemployed training was mostly at TAFE	Rate of voluntary turnover compared with involuntary turnover
91	1991–2000; Great Britain (national, longitudinal dataset)	Quantitative research: data analysis of national, longitudinal study	Cohort aged 42 years: qualifications acquired between 33–42 years of age	'Lifelong learning' defined as a formal qualification (academic or vocational) acquired	Probability of being in the labour market and wage benefits (employment status: full-time or part-time)
85	1987–2000; Washington State, USA; State data of unemployment claims between 1990 and 1994	Quantitative research: data analysis; cost-benefit analysis. 10 400 retrenched workers between ages of 22 and 60 years, half of whom were over 35 years of age	Compared 35 years or older and younger retrenched workers; restricted to experienced workers in labour market for 14 years and three years or more in same job before being retrenched	Re-training in community colleges —up to two years but average 6–8 months (one year of study equates to 45 college credits)	Wage increases: earnings per quarter
45	1984; USA Longitudinal Survey of Labour Market Experience of Mature-aged Women—originated in interview 1967 ages 30 to 44 years	Quantitative research: data analysis of 3422 women	Pre-retirement women 47–61 years; 1882 or 55% of women reported their training method; training methods reported by occupation	Training: on-the-job or formal classes	Wage increases and labour market participation

Study ID	Time period and location	Research methods	Population	Skill development activity	Labour market outcome
68	1991–2001; OECD with major focus on Japan, USA, Sweden, UK, Denmark, Canada, Italy, Germany, France and the Netherlands	Quantitative research: draws on the results of OECD surveys and various data sources of secondary education and training for economic analysis	Term 'older worker' is not defined but there is a suggestion that it refers to learners over 40 years (see p.43)	Distinguishes two types of skill development activities—formal education and training	Only concerned with economic costs and benefits of formal education and training to enterprises (but not the costs and benefits to individuals)
74	Pre-1999; European Union countries mostly, especially Finland's 'active strategies' for ageing workforce	Qualitative research: evaluation of integrated approaches; European Foundation conference report so peer review of papers and presentations and expert opinion summarised	Term 'older worker' is not defined; includes policies for the whole workforce	Details not specified but assumed that all types of skill development activities are included	Details not provided—refers to change in labour market participation, change of career, self-employment, re-entry to labour market, change in work attitude

The findings

The seven studies in whose findings we have confidence provide evidence for the review question (summarised in appendix E). Five of the studies provide evidence which supports the first statement, while the two highest rated studies provide evidence for the second statement. The third statement is related to the paucity of evidence in relation to specific skill development activities and labour market outcomes.

- 1 *There is evidence that education and training undertaken by older people can result in improved individual productivity (as measured by higher wages) and improved attachment to the labour market (as measured by employment rates), particularly for the unemployed and for women more so than men.*

We start with the findings of the Australian study 90 whose target population is above 40 years of age and build on to these from other studies. We note, however, that we cannot be sure of the transferability of the findings to Australia from the overseas studies in general, or whether the findings from research studies involving younger populations would be repeated for those over 45 years of age, in particular.

The Australian study 90 uses current and past levels of education, as well as future projections to determine the impact that rising levels of education is having, and will have, on employment rates now and into the future. The paper also examines the relationship between the timing of the education and training and engagement with the labour market, to examine the pay-off to undertaking training as an older worker compared with undertaking education and training earlier in life. The emphasis is on formal education and training from school, VET and higher education that leads to a recognised qualification. The measure of engagement with the labour market used is the employment-to-population ratio.

Study 90 demonstrates that, for a given age, employment rates rise with increasing education levels and this impact of education on employment rates is more pronounced for women than men. For males over 40 years, rising education levels have worked to offset the long-term trend of declining rates of labour force participation. For females, it has contributed to long-term increases in labour force participation. The study notes that the education levels of older-aged cohorts will rise over the coming decades as currently well-educated cohorts age, but that this 'education effect' will only

partially offset the impact of the ageing of the Australian population; the demographic impact of the ageing population dominates.

Looking at the issue of timing of qualifications attained, the Australian study 90 demonstrates that qualifications acquired later in life (over 40 years of age) are as good, and in some cases have a better pay-off in terms of employment-to-population ratios, for older-age groups as qualifications obtained at a younger age. On the whole, the study shows the more qualifications the better, although evidence on lower-level qualifications, below Australian Qualifications Framework certificate level III, and incomplete qualifications is mixed on improving employment rates. The findings also indicate that older persons who have on-the-job training are more likely to retain their employment status relative to their employed peers not getting training, and so training appears helpful in maintaining employment. However, as the study notes, one explanation for this is that employers invest in those they expect to retain as employees.

Overall, the Australian study 90 provides evidence to support moves to promote lifelong education and training because the mature-aged benefit in terms of employment from acquiring higher-level qualifications.

The United States Mature Women's Cohort study 45 found that on-the-job training paid off for older women and their employers. It found that older women who train remain in the labour force for longer and sustain higher productivity, as measured by wages, relative to their employed peers who are not getting training.

The United Kingdom study 91 focused on full qualifications. 'Lifelong learning' was defined as gaining a qualification ranging from secondary school certificates to university degrees and all levels of the national vocational qualifications. The study found that gaining a qualification after the age of 33 years of age was associated with an increased probability of being in the labour market in 2000 (that is, at age 42 years) for those who were not in the labour market in 1991. This result applied equally to men and women. However, only 'occupational' qualifications, that is work-related, competence-based National Vocational Qualifications (NVQs) in one of 11 occupational areas, appeared to make a difference for previously unemployed men. Also, those who gained a qualification after the age of 33 years of age were more likely to be in full-time employment; this was particularly true for women. However, gaining a qualification did not have significant effects on the probability of remaining in employment in 2000 for those who were already in employment in 1991. It did yield a wage premium however.

Study 91 also found that those already employed but without a qualification in 1991 who undertook learning leading to a qualification between 1991 and 2000 obtained higher earnings than those in employment without a qualification in 1991 who did not engage in learning. For women, taking a degree or level 4 occupational qualifications in later life (for example, nursing or teacher training) appears to have a wage premium.

The United States study 85 focuses on retrenched workers and estimates the impact that community college schooling had on their re-entry to the labour force, and subsequent earnings in particular. The analysis relies on longitudinal administrative data covering workers who were displaced from jobs in Washington State during the first half of the 1990s and who subsequently remained attached to the state's workforce. The database provided displaced workers' quarterly earnings records covering 14 years matched to the records of the state's community colleges.

The study found that quarterly earnings were significantly higher for retrenched workers who undertook training for course credits at community colleges compared with those who did not undertake training. This finding was obtained using the authors' model which controlled for a number of personal, economic and training course effects. This result was not evident when just the average earnings were compared with those who undertook training and those who did not. The gains per quarter were similar for the older previously retrenched workers (35 years and over) as for their younger counterparts. It was noted, however, that the older workers had earned substantially more prior to displacement.

The displaced workers involved in study 85 undertook a wide variety of subjects and courses, particularly at sub-degree levels. Older displaced workers were less likely to complete five or more courses (21 or more credits) than younger workers. The state's academic year consists of 45 credits. About a third of the older displaced workers who undertook training completed only one course (about five credits). The study showed that the impact of training on earnings is initially negative immediately after training, but positive soon after that and can persist over time. The authors warned not to look at short-term outcomes only.

This study also looked at the gains for government as well as for individuals. The participants' community college skill development activities were heavily subsidised by taxpayers. The study concluded that the 'society' only approximately broke even when an older displaced male worker was retrained, or netted a modest benefit when an older female was retrained.

Study 68 reviews the literature from OECD surveys and secondary data sources associated with various aspects of skill acquisition by young people and older adults. The analysis suggests that human capital investment is associated with significant labour market gains for individuals, including higher post-tax earnings and better employment prospects, which exceed the investment costs (mainly forgone earnings and tuition fees) by a significant margin. However, the net gains fall with age, mainly reflecting a shorter period to take advantage of the benefits that come with education. The authors suggest that, for labour market benefits to flow from the promotion of lifelong adult education, the incentives for older workers to invest must be increased: older workers need to be convinced that further education and training is worth their while. This may be achieved by reducing the cost of education and training for older learners and/or increasing their length of time in the paid workforce to gain the benefits from their investment.

Study 68 also highlights that the eventual return in the form of higher earnings from formal education or training at older ages may be subject to considerable uncertainty. Making use of enhanced human capital may often require switching to another employer, in which case, wage premiums due to seniority or employer-specific skills will be lost and thus cancel out part of the expected gains. However, educated workers are more likely to participate in the labour market, and their active working life is generally longer than that for those with lower educational attainment.

2 Labour-market-related gains are greater for the mature-aged who complete higher-level qualifications. Gaining lower-level qualifications or incomplete qualifications may have a negative effect on labour-market-related gains for some older people.

The Australian study 90 shows that, on the whole, the more qualifications an individual has the better, although the evidence on lower-level qualifications and incomplete qualifications improving employment-to-population rates is mixed. For example, the results suggest that acquiring qualifications at a higher level may have an impact on employment-to-population rates. However, older workers undertaking incomplete or qualifications at a lower level than their highest educational attainment levels do not necessarily have improved employment-to-population rates.

The United Kingdom study 91 also indicates that gaining lower-level qualifications may have a negative effect on earnings for some men and women. For example, level 2 occupational qualifications (such as a one-year 'apprenticeship' under National Vocational Qualifications, but not able to supervise or guide other staff) yield a negative wage premium of 11% for men and 6% for women. Also for males, only higher degrees yielded a wage premium if taken as a mature student, and only occupational qualifications appeared to make a difference in terms of getting a job for previously unemployed men. (Note however, that the authors suggest these latter results were not robust in statistical terms.)

The United States study 85 found that the choice of course seems to have an impact on the returns to training. The researchers identified two groups of training courses: those containing technical and trade subjects with a quantitative emphasis (group 1), and those that were more qualitative in nature, such as sales and services, social sciences and humanities, and basic skills (group 2). Subsequent earnings were found to be higher for the former courses than the latter ones, leading the

researchers to suggest that older displaced workers should be encouraged to take more technical subjects and courses. However, older workers were very unlikely to complete one academic year of training. About a third of the older displaced workers who undertook training completed only one course (about five credits).

3 *The specifics of what skill development activities work, when and for which groups of mature-aged are sparse, as the focus of the studies was mostly on the level of 'qualification' acquired, or simply referred to 'training' as the skill development activity.*

Only two of the seven studies (74, 2) could be described as broadly focused, in that evidence was collected from a variety of sources, including from older people themselves. Research which provided the detail of skill development activities was more likely to be qualitative, such as case studies involving small groups of older workers. For example, the Australian study 2 used mixed methodologies: quantitative analysis of national data provided evidence that the oldest cohorts of wage and salary earners were least likely to receive training, while the qualitative focus groups and case studies provided insights into the attitudes and behaviours of people.

In study 2, the case studies of three 'lighthouse' firms—defined as having policies in place to address the barriers to training of older employees—indicate that workers who had participated in training were more engaged, better skilled and more cooperative with co-workers and management. However, the authors do not attribute this solely to being an outcome of skill development activities. The authors saw the case studies as providing an insight into the use by firms of an integrated strategy that focused on upgrading workforce skills by changing workplace culture. It was the workplace culture—the context and the suite of aligned changes in management and strategy—that was ultimately responsible for the benefits in productivity, not any single program.

The study 2 case studies suggest that there are linkages between the training provided and outcomes such as job retention, change of work role, change of career, and change in employment duration. But, explicit evidence to demonstrate this actually occurred as a result of skill development activities is not provided. One study noted that labour turnover at the start of the retraining process was of the order of 60% per year, whereas at the completion it was 2%, but, as the authors note, this was not the result of skills development alone.

In study 74, the 1999 conference report of the European Foundation for the Improvement of Living and Working Conditions, we find accounts of what works, when and for which groups of mature-aged. These include evaluations of different programs from many different countries, especially the 'active' ageing integrated strategy used in Finland to promote opportunities for an ageing workforce, and other holistic approaches to re-integration of those disadvantaged in the labour market in Spain and Italy.

The Finnish Programme for Ageing Workers (1998–2002) is an example of an integrated management strategy for 'active' strategies to promote opportunities for an ageing workforce. Training was only one of a number of policy initiatives implemented between 1998 and 2002. Therefore it is difficult to quantify the impact of the skill development activities alone on the increased participation of older workers in the labour market. In addition, the authors note that a direct causal link can not be assigned, as many other factors may influence an individual's choice to undertake education and training or take early retirement.

The Finnish program adopted a multi-faceted approach and is led by four ministries (social affairs and health, labour, education and trade and industry). The interventions include: changes in labour legislation; information campaigns based on research information; education programs; change legislation to combat discrimination; and measures for labour protection and reform of the pension system. In the Finnish program, typical labour market measures for older, unemployed workers include vocational training; social support and counselling; assistance with job search; wage subsidies and other reductions of wage costs; support for start-up enterprises and self-employment; and partial pension schemes as a tool to prolong working life.

Skill development activities alone are not enough to improve productivity or attachment to the labour market of the mature-aged: integrated strategies are needed. The European Union Employment Guidelines mentioned in study 74 also stress the importance of employability and the range of public policy, workplace and community factors which contribute to its promotion. The comprehensive concept of workability rather than just employability was introduced in study 74 by J. Ilmarinen (p.31). It refers to both individual and occupational factors essential to a person's ability to cope throughout their working life. According to Ilmarinen, workability is the result of the interaction between the individual's resources, working conditions and work organisation. A person's individual resources include health, functional capacity, basic and professional education and skills. The resources are also influenced by the person's values and attitudes, motivation and job satisfaction.

Each of the case studies in study 2 also illustrates, in its own way, the importance of 'soft' skills such as teamwork, problem-solving and communication. As noted by the authors, the soft skill requirements may vary according to whether the job is 'high-level problem-solving', 'in-person service' work or 'routine production' work (Wooden et al. 2001, p.243). For example, prison officers are now required to 'promote cooperative behaviour' as well as maintain security procedures. Also, production line workers are required to develop their diagnostic problem-solving capacities by being responsive to preventive maintenance.

The three case studies also illustrate how soft skills are best acquired and applied in the context of the workplace. On-the-job learning is an essential aspect of how these skills are acquired, and this, according to the authors, suggests that 'training in the new soft skills can only be successfully delivered in a specific workplace context'. The authors also suggest that 'the particular focus of the enterprise (its market niche) is often a crucial ingredient for defining what soft skills are required and how they should be exercised' (Wooden et al. 2001, p.229). This has implications for working out how best to enable unemployed older persons to acquire soft skills.

Study 85 noted that earnings were higher for those retrenched workers who had completed courses with a quantitative or technical vocational focus. The researchers identified two groups of training courses: those containing technical and trade subjects, health-related, higher-level maths and science subjects with a quantitative emphasis, and those that were more qualitative in nature, such as sales and services, social sciences and humanities, physical education and basic language, literacy and numeracy skills.

Qualitative research may also highlight related issues. For example, study 2 case studies demonstrate an emphasis on the responsibility of individual employees for managing their own careers by upgrading their skills profile. This is shown in several ways in the case studies. Prison officers now need to demonstrate to third party assessors that they can perform all aspects of their job, despite the fact that they may have had their jobs for many years. Manufacturing workers are now selected according to their attitude to learning and evidence that they accept responsibility for managing their own careers, even beyond the workplace. Individual responsibility for health and safety is now built into how work is performed in the production line. Bank officers now have a new responsibility placed on them as individuals to continually upgrade their learning through a self-initiated development plan (Wooden et al. 2001, p.205).

In summary

From the seven studies in which we can have confidence, three key points emerge:

- 1 There is evidence that education and training undertaken by older people can result in individual gains (employment or higher wages); the greater gains are for those who were previously unemployed, and for women more so than men.

- 2 The labour-market-related gains are greater for the mature-aged who complete higher-level qualifications. Gaining lower-level qualifications or incomplete qualifications may have a negative effect on labour-market-related gains for some older people.
- 3 The specifics of what skill development activities work, when, and for which groups of mature-aged are sparse, as the focus of the included studies was mostly on the level of 'qualification' acquired, or simply referred to 'training' as the skill development activity.

Which factors act as barriers or facilitators?

Introduction

Implied in the review question, and to be reported in the research findings was the issue of the factors that have an important bearing on the outcomes in the review question, either as barriers or facilitators.

Of the seven studies in whose findings we have confidence for the main review question, three studies (2, 74, 68) also contained information to address this issue. These three studies were:

2: Wooden, M, Vanden Heuvel, A, Cully, M & Curtain, R 2001, *Barriers to training for older workers and possible policy solutions*, Department of Education, Training and Youth Affairs, Canberra.

74: Naegele, G 1999, *Active strategies for an ageing workforce: Conference report*, Office for Official Publications of the European Communities, Luxembourg.

68: Blondal, S, Field, S & Girouard, N 2002, *Investment in human capital through post-compulsory education and training: Selected efficiency and equity aspects*, OECD, Paris.

A further four studies were identified as meeting the criteria for relevance and quality of findings sufficiently to address the issue of barriers or facilitators (refer table 3 for more detail).

The four additional key studies included for their information on barriers or facilitators were:

17: Feinstein, L, Galindo-Rueda, F & Vignoles, A 2003, *The labour market impact of adult education and training: A cohort analysis*, Centre for Economics of Education, London School of Economics and Political Science, United Kingdom.

A United Kingdom longitudinal study, containing limited information on skill development activities or outcomes related to attachment to the labour market, but it did address productivity outcomes. This study uses the same data set as study 91 and so concentrates on qualification-oriented learning of individuals between the ages of 33 and 42 years.

57: Taylor, P & Urwun, P 2001, 'Age and participation in vocational education and training', *Work, Employment and Society*, vol.15, no.4, pp.763–79, United Kingdom.

Skill development activities were not considered in this study. The focus was on older workers employed in non-government companies and, in particular, employer attitudes towards the older workers. The study found that older workers were less likely to receive or be offered training than younger workers, that older male workers received less training than females, and that workers from ethnic minority groups were less likely to receive training.

73: European Foundation for the Improvement of Living and Working Conditions 1997, *Combating age barriers in employment: Research summary*, Office for the Official Publications of the European Communities, Luxembourg.

This publication summarises the major findings from a European Union study on strategies for improving employment prospects of an ageing workforce. There was little information about skill development activities. The barriers were, therefore, related to getting and keeping jobs not skill development.

This study is a thematic policy review, which, among other things, examines measures to improve the job skills of older workers in Finland. It deals with skill development in a limited way—the main focus is on policy issues.

Table 3: Summary of features of seven studies which identify barriers

Study ID	Time period and location	Research methods	Population	Skill development activity	Labour market outcome
2	Mid-1990s–2000; Australia (national ABS data collection)	Mixed methods: quantitative research: data analysis of secondary data; and qualitative research i.e. focus groups undertaken in 1999; three case studies of 'best practice' firms	45 years and over	Training undertaken in the last 12 months; in-house structured training; external training; on-the-job unstructured training and educational study; for those unemployed training was mostly at TAFE	Rate of voluntary turnover compared with involuntary turnover
74	Pre-1999; European Union countries mostly, especially Finland's 'active strategies' for ageing workforce	Qualitative research: evaluation of integrated approaches; European Foundation conference report so peer review of papers and presentations and expert opinion summarised	Term 'older worker' is not defined; includes policies for the whole workforce	Details not specified but assumed that all types of skill development activities are included	Details not provided—refers to change in labour market participation, change of career, self-employment, re-entry to labour market, change in work attitude
68	1991–2001; OECD with major focus on Japan, USA, Sweden, UK, Denmark, Canada, Italy, Germany, France and the Netherlands	Quantitative research: draws on the results of OECD surveys and various data sources of secondary education and training for economic analysis	Term 'older adult' is not defined	Distinguishes two types of skill development activities—formal education and training	Only concerned with economic costs and benefits of formal education and training to enterprises (but not the costs and benefits to individuals)
17	1991–2000; Great Britain (national, longitudinal dataset)	Quantitative research: analysis of secondary data; interviews at 41–42 years but training occurred between 33–42 years	Sample of 2191 male workers; constituting 1038 with some work-related training and 1153 no work-related training; 43.7% undertook work-related training lasting more than 3 days between 1991 and 2000	Work-related training provided by the employer that lasted for 3 days or more; to compare to acquiring formal qualifications later in life which Jenkins et al 2002 suggested has no measurable impact on individuals' wages	Wage growth over period 33–42 years; analysis necessarily focuses on males
57	1997; UK, national labour force survey	Quantitative research; analysis of secondary data N=55 085 (females 27 055, males=28 030)	Covers 50–59 and 59–64 years and compares with the following younger age groups; 16–64; 25–39; and 40–49	Received employer-provided training in the last 13 weeks; or offered training by employer but not trained in the last 13 weeks; employee never offered training by employer	Relative importance of individual preferences and employer decision-making in determining the propensity of older workers to undertake training

Study ID	Time period and location	Research methods	Population	Skill development activity	Labour market outcome
73	1994; European Council; 159 examples plus 8 from Finland and Sweden; focus on 22 detailed case studies from. Belgium, France, Germany, Greece, Italy, the Netherlands and the United Kingdom plus limited material from Finland and Sweden	Qualitative research: each research team prepared a national report consisting of four elements, one of which was best practice case studies consisting site visits and interviews; of 22 case studies, 14 were private companies, three from public sector and five from non-profit making agencies; most are work-based	Not specified but aim is for 40 years and over p.5	Not specified but workplace and non-workplace initiatives were requested in order to highlight the lessons learned from the implementation of good practice with regard to older workers	Personal attitude; employer attitude summary information only given in this report; details of case studies not seen.
88	1998–2003; OECD data for Finland and Norway 1998, other countries 1994; one of series of about 20 OECD country reports	Mixed methods: quantitative research uses secondary data for data analysis and qualitative research, for example, consultative report preparation process culminating in an expert seminar; thematic review of policies to improve labour market prospects for older workers	Mostly about Finland—all workers aged 50 years and over	No information but inferred to be formal and informal on-the-job training	Change in employment duration; change in work attitude; deferral of retirement

The key factors

From these seven studies in whose findings we can have confidence, a list was developed of all identified barriers, or facilitators, to the mature-aged undertaking skill development activities and/or to getting and keeping a job. It is clear that factors that act as barriers to skill development activities for some mature-aged individuals leading to labour market outcomes can act as facilitators for others. For example, poor health is a barrier to one group of mature-aged individuals, whereas good health is a facilitator to another group. Put another way, we found three key factors that can act as barriers to the mature-aged gaining from skill development activities and that also lead to the identification of relevant facilitators. The three factors are attitudes and behaviours of employers and workers, the individual's circumstances, and public policies outside VET.

Attitudes and behaviours

The attitudes and behaviours of employers and employees towards older people working, and to learning new skills and knowledge in general, were mentioned as barriers to the mature-aged undertaking skill development activities leading to increased attachment to the labour market or improved productivity. The attitudes and behaviours of employers and line managers, human resource managers and recruitment officers were found to be the most significant barrier. This included employers' cherry-picking employees for training, and a perceived discrimination against older workers relative to their younger counterparts.

Three studies (2, 73, 88) highlighted ways in which personal attitudes or behaviours can be barriers for the mature-aged. To begin with, there is the reluctance of many mature-aged individuals to take part in training. Those in jobs do not always believe they need to be trained, and those unemployed can be sceptical because experience has taught them that training does not get them into the labour market. Study 2 suggested that attitudes, such as stubbornness and inflexibility towards change on the part of older individuals, might also be involved. This implies a need for future research, as study 91 notes, 'further work is needed to try to explain the motivation behind individuals' decisions to undertake lifelong learning' (Jenkins et al. 2002, p.24).

The Australian study 2 noted that older workers encountered several barriers to skill development, including employers' uncertainty about the retirement intentions of older workers; employers' discrimination against older workers in favour of younger ones; employers selecting the better educated workers for training; and self-discrimination because of internalisation of the negative attitudes of employers and the general community. The authors emphasised the need to change workplace culture to facilitate training and overcome the barriers encountered by older workers. Their case studies demonstrated that it was the change in workplace culture that was both the cause and effect of skill development. It was the workplace culture—context and the suite of aligned changes in management and in the strategy—that was ultimately responsible for the benefits in productivity and worker engagement and workers' enhanced skills, not a single program (Wooden et al. 2001).

The evidence from the three case studies in study 2 shows that workers who participated in training were more engaged, better skilled and more cooperative with co-workers and management. However, the authors do not attribute this solely to being an outcome of skill development activity. The firms used an integrated strategy that focused on upgrading workforce skills by changing workplace culture. The authors noted that it was the workplace culture that was ultimately responsible for the benefits in productivity.

The influence of employers on the fate of mature-aged workers was a major focus of study 57. The authors concluded that the lower incidence of training they reported for older workers was mainly attributable to employer decisions. Study 90 suggested that this may be because employers tend to make training investments in those individuals they expect to retain as employees. Study 17 also supported this and found that workers who were selected to receive work-related training were not representative of all workers. Rather, employers were apparently able to identify those most likely to gain from further training.

The modelling used by the authors of study 17 showed that workers who received training gained substantially in wages. However, those workers who did not receive training would not have gained higher wages from the training had they done so. This evidence suggests that, to some extent, firms are able to not only pick those workers most likely to gain from training, but also to provide training that has a positive impact on their wages. An alternative explanation may be that employers choose those workers whom they want to reward with higher wages and provide them with training.

Furthermore, the authors of study 17 noted that work-related training for older workers appears to not necessarily substitute for providing workers with adequate skills during their initial education. Low-productivity workers with few skills were unlikely to gain from a policy to encourage employers to provide training. Instead, firms were likely to train those workers who were more able in the first place, thereby leaving the poorly skilled worker even further behind.

An issue for any planned government intervention in the training area will also need to take account of the type of training provided. The United Kingdom study 57 showed that training provided by firms was likely to be different from that paid for by individuals. Employers pay for firm-specific training, as they obtain benefits from the higher productivity that results and, given its firm-specific nature, they believe their workers are less likely to be poached by other employers. Study 17 showed that employers like to choose whom should be trained, so they are unlikely to welcome a government intervention which takes this decision away from them. Study 57 also reported that the United

Kingdom Government had experienced difficulty getting employers to participate in government employment programs for young people. They therefore concluded that attempts to involve older workers in such government-sponsored programs might be even more difficult.

In relation to the attitudes and behaviour of workplace trainers or training providers, study 88 points out that more attention should be devoted to the learning strategies for older workers, for example, to make better use of the experience of older workers. The authors also note that the conditions and methods used for training should take into account the importance of learning-by-doing, that older people may have a weaker mechanical memory but a stronger connective memory, and the speed of training, since both the time required for learning and understanding new terms and finding information in manuals, may take longer for older people (OECD 2004a, p.103).

The individual's circumstances

Personal circumstances of some kind were reported as barriers to training in all seven studies. These included financial circumstances (68, 2, 73), health (74), access to training and support services (74, 88), low prior education (68, 2, 17, 88) and limited ability or time for training and carer responsibilities (74, 2). Nine groups were identified as less likely to receive training; that is, older workers (compared with younger workers); older males (compared with older females); part-time and casual staff; workers in smaller companies; individuals with ethnic minority backgrounds; individuals with health concerns; individuals with financial problems; individuals from disadvantaged backgrounds; and individuals with low educational attainment levels.

Associated with cost is the perceived return on investment. Study 68 indicates that the shorter remaining length of working life for adult workers reduces the time to amortise the investment costs associated with investment in training. Therefore, a shorter remaining working life is a disincentive for skills acquisition by older workers.

The studies also suggest that adult workers will often not have the same access to public financial support as their younger counterparts. In some countries there is an age limit for entitlements to standard student grants and loans; in other countries, the means testing of such support is likely to limit the availability to adult students.

Public policy outside VET (such as taxation and retirement policies)

Public policy, especially in relation to eligibility for the aged pension or access to superannuation funds and insurance for older workers (that is, policy outside VET) is the final identified barrier to training among the mature-aged. The design of pension systems can encourage or discourage mid-career investment in human capital, depending on how retirement pension wealth is affected by the subsequent increases in earnings. If pensions and contributions are unaffected by earnings, they will have no impact on the incentives to pursue education.

Several of the studies (2, 68, 57, 73, 74, 88) identified a small number of policy and legislative barriers for mature-aged individuals, including weak anti-discrimination legislation and financial incentives that make retirement more attractive than continuing in work. The OECD study 68 suggested that changing public policy was the principal way of facilitating training for older workers. The report recommended:

- ✧ changes to the current pension systems (early access to pensions limits incentives to train)
- ✧ participation in adult education programs designed in ways that reduce the opportunity costs to older workers

- ✧ tax levies and tax incentives for employers to stimulate training activities
- ✧ legislation to grant 'workers rights' to training.

Study 74 reports that the evaluation of the Finnish National Programme for an Ageing Workforce (1998–2002) identified three main barriers to training older workers: discrimination with regard to recruitment, especially the unemployed; health problems and limited functional capacities, such as speed of working; and demands of other responsibilities (for example, caring for ageing parents). The approach advocated for addressing these barriers in Finland was action throughout working life. This included:

- ✧ the coordination of social and health interventions with employment policies
- ✧ giving more attention to job design for older workers
- ✧ more training in age awareness for employers and the community in general.

In the Australian context, study 2 noted that few of the country's industrial awards take up issues with a bearing on the ageing workforce.

In summary

From the findings of the seven studies in which we can have confidence, three main factors emerge affecting whether or not the mature-aged undertake skill development activities and achieve positive labour market outcomes. These are:

- ✧ attitudes and behaviours of employers and employees towards older people working and learning new skills and knowledge in general
- ✧ the individual's circumstances (for example, health, carer responsibility, financial and socioeconomic status, access and opportunity to train) and attitude to learning
- ✧ public policy outside vocational education and training, especially in relation to eligibility for age pension or superannuation funds as this links to the time that individuals have to amortise their investment in training.

Implications of the review for VET

This chapter outlines the implications of the systematic review for VET policy, practice and research, as recommended by the steering group.

Implications for policy

Policy-makers in VET should continue to encourage skills development for the mature-aged as a means of improving their productivity and longevity in the labour market, but they need to be mindful that skill development activities alone are unlikely to be sufficient.

The studies in this review recognise that negative attitudes to training by mature-aged individuals and their employers need to be addressed. Workplace culture plays a key role in who gets trained and in what. One study in our review (88) identified the need for new approaches to management, and company strategies to deal with attitudes to training for the mature-aged, but acknowledged that the success of any training program requires an initial commitment from the mature-aged individual involved. Study 73, involving a number of European Union countries, suggests improvements to organisational recruitment and exit policies, more flexibility in workplace operations and a change in attitudes on the part of employers, managers and employees in dealing with barriers to training for the mature-aged.

In the Finnish program (study 74), typical labour market measures for older, unemployed workers include vocational training; social support and counselling; assistance with job search, wage subsidies and other reductions of wage costs; support for start-up enterprises and self-employment; and partial pension schemes as a tool to prolonging working life.

In relation to low-skilled older workers in particular, there is some evidence that employers choose not to train them because they would not gain. Firms are likely to train those workers who are more able in the first place (with higher educational attainment levels) and for firm-specific outcomes. Employers may not be so willing to train low-skilled older individuals in more generic skills.

As demonstrated by the European ‘active’ ageing strategies and, in particular, the Finnish program (Naegele 1999), a coordinated and comprehensive package of measures is needed to change attitudes and behaviours to older workers in our whole community, for example, promoting lifelong learning and removing incentives for early retirement. Government policies relating to health, education, employment and training, workplace relations, community services, and industry sectors need to work together to address the issues of retaining mature-aged individuals in the labour market.

Implications for practice

Skill development activities need to be carefully tailored for the mature-aged to suit their circumstances

Study 57 argues that greater awareness of the relationship between ageing and training should be a prerequisite for those designing practical interventions to age-related barriers. Study 88 points out that more attention should be devoted to learning strategies for older workers, for example, to make better use of the experience of older workers and learning-by-doing. While some of the programs in

the Finnish 'active' ageing strategies (study 74) were tailored for the mature-aged, these were not identified in the other studies in our review.

The qualitative research in study 2 does show that older workers take longer to learn new skills than their younger workmates, and this needs to be taken into account. For example, the authors of study 2 suggested that 'soft skills' such as communication skills and customer service, which are considered important to ongoing employability, may be more difficult for older workers to learn.

In study 2, focus groups with the long-term unemployed offered consistent evidence that training was seen as only worthwhile if it was part of paid work (Wooden et al. 2001, p.240).

Implications for research

This study has provided some evidence that skill development activities for the mature-aged can lead to improved attachment to the labour market or improved productivity. It has also uncovered a need for more focused research.

Specifically research is needed to better understand:

- ✧ Which skill development activities work for which particular groups of mature-aged people and under what circumstances?

As this review suggests, skill development activities do not occur in a vacuum. Individuals' attitudes and values, employer attitudes, policy setting (such as taxation and retirement policies) and the state of the labour market will all impact on skill development activities.

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Appendix A: Acknowledgements

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Appendix B: Framework for systematic review—mature-aged

Final framework for the systematic review of research: Skill development activities that keep the mature-aged in paid work

The framework for the NCVER/ANTA systematic review of research includes:

- ✧ the policy question(s) to be addressed by the review
- ✧ the definitions of the terms in the question(s)
- ✧ the criteria to be used to select research for inclusion in the review
- ✧ the coding to be used for recording the findings from the included studies
- ✧ the criteria for appraising the quality of the included studies

All components of the framework must be considered in conjunction with one another when carrying out the review.

An outline of the review process is provided for reference at the end of this framework document.

The policy question

The question developed by the steering group to be addressed in this review is:

What evidence is there that skill development activities for the mature-aged lead to:

- ✧ *improved attachment to the labour market?*
- ✧ *improved productivity?*

The steering group agreed that this question needs some unpacking. Implied in the review question, and to be reported in the research findings and final report, are the issues of which skill development activities work, when and for whom. Also to be reported in the findings are the factors (such as attitude) that have an important bearing on these key outcomes, either as barriers or facilitators, and the implications for policy, practice and research from these findings (see coding of findings section).

The definitions of the terms in the questions

The terms in the question as defined by the steering group are as follows.

Mature-aged

The starting brief contained the term ‘mature-aged worker’, but after discussion by the steering group the population was defined more broadly as ‘mature-aged’.

Mature-aged refers to all people 45 years and over. It includes all those who desire work, or who might desire work if their skills were more suitable or if there were more opportunity.

Skill development activities

Skill development activities are defined as ‘deliberate’ general education or specific vocational activities undertaken to learn new skills or further develop skills related to work. ‘Deliberate’ in this context refers to the person knowingly participating in the skill development activity, for example, an activity which has a predetermined plan and format designed to develop employment-related skills and competencies.

Skill development activities thus can include a structured (formal) learning activity, such as undertaking an accredited or non-accredited course, or an informal learning activity such as self-directed learning, networking, coaching or mentoring, as long as it is predetermined or knowingly participated in.

Skill development activities may be initiated by self, employer or other (such as Job Network member).

Improved attachment to the labour market

Improved attachment to the labour market includes:

- ✧ increased labour force participation rate
- ✧ increased employment duration
- ✧ job retention or improved job security (no longer at risk of losing job)
- ✧ change of work role or new career following new interest (including self-employment) (what’s driving longer engagement with the labour market?)
- ✧ change in attitude to work, ‘early retirement’ or ‘retrenchment’, for example, looking forward to continuing participation in paid work past 55 years.

Improved productivity

Improved productivity includes:

- ✧ increased wages
- ✧ promotion
- ✧ increased efficiency in processes and work output
- ✧ reduction in accidents and injuries to workers through improved health and safety.

Outcomes do not include participation in the voluntary sector.

Research selection criteria

The search strategy will involve hand and electronic searching (databases and websites), to select studies that:

- ✧ are in English (from Australia and overseas)
- ✧ are recent (from approximately the last 10 years)
- ✧ match keywords deemed relevant to the review question.

Note, however, that research dealing with a population under 45 years will also be included where the research findings are relevant to improving attachment to the labour force for the mature-aged. Similarly, while the research is likely to cover those up to 65 years, relevant research focusing on over-65-year-olds will also be included.

All found studies will be recorded with reasons for any exclusion noted, such as because they do not answer the set question, or a study has been replaced by a primary research study on which it was based.

All included studies will undergo a further coding process as outlined below.

Coding of the findings from the included studies

As well as defining the question for the review, the steering group and others who provided feedback on drafts were concerned to ensure maximum value from the review by specifying how the findings of included research were to be recorded.

Findings from the included studies will be recorded and the studies coded by the reviewers within categories as suggested in table 4. Note that more than one code may apply, and some categories will be open-ended and more terms may be added as needed to code the studies systematically.

Table 4: Coding of the included studies

Item	Details
Bibliographic details, including: <ul style="list-style-type: none"> ✦ title ✦ author(s) ✦ publication details ✦ series ✦ url 	Title, author(s), publication date and other relevant bibliographic details
Aims of the research	Brief description of study aims, including research questions and any hypotheses
Study methodology (proposed and actual) <ul style="list-style-type: none"> ✦ textual description 	Brief textual description of the proposed methodologies for the study. Including details of the sample size, population and coverage. Any differences between the actual and proposed methods used will be noted
Geographic location <ul style="list-style-type: none"> ✦ local (Australian) ✦ state (Australian) ✦ national (Australian) ✦ international (one country, not Australia) ✦ international (more than one country) 	Location the study covers
Time period <ul style="list-style-type: none"> ✦ date range, by year 	Time period the study covers
Mature-aged population <ul style="list-style-type: none"> ✦ 45 to 65 ✦ over 65 ✦ under 45 but relevant to over 45 	Size and nature of the mature-aged population in the study. This will include the population from which the sample was drawn as well as the sample itself
<i>Other terms may be needed, arising from the studies included.</i>	
Skill development activities (the five categories here will be further subdivided, as indicated by the examples): <ul style="list-style-type: none"> ✦ provider (for example, school, TAFE, higher education, adult and community education, private training provider, enterprise training) ✦ delivery (for example, on-the-job training, off-the-job training, apprenticeship, traineeship, distance education, e-learning, in classroom, informal) ✦ field of education (Australian Standard Classification of Education categories) ✦ level of qualification (AQF and non-AQF, for example, non-award, subject only, cert I–IV, diploma, bachelor degree or higher) ✦ duration (for example, short-term, long-term) 	Description of skill development activities, to include but not be limited to: education sector, formal or informal, duration
<i>Other terms may be needed, arising from the studies included.</i>	
Outcomes (the 2 categories here will be further subdivided, as indicated by the examples): <ul style="list-style-type: none"> ✦ any changes in attachment to the labour market (for example, in labour force participation, employment duration, job retention, job security, change of work role, change of career, change in work attitude, re-entry to labour market, move to or from self-employment) ✦ any changes in productivity levels (for example, wages, promotion, demotion, efficiency, output, health and safety) 	Description of the outcomes (in relation to attachment to the labour market and/or productivity) of the skill development activity
<i>Other terms may be needed, arising from the studies included.</i>	

Item	Details
Barriers or facilitators: ✧ attitudes as barrier/facilitator ✧ other social/cultural factors as barrier/facilitator ✧ financial circumstances as barrier/facilitator ✧ health as barrier/facilitator ✧ disadvantage (equity group) as barrier/facilitator ✧ access to services (educational or other) as barrier/facilitator ✧ alternative opportunities as barrier/facilitator ✧ prior educational background as barrier/facilitator ✧ area of residence as barrier/facilitator Other terms may be needed, arising from the studies included	Description of barriers/facilitators (to include how other factors might have impacted on the effectiveness of the skill development activities such as attitudes, financial circumstances, health, availability of alternative careers, or socio-economic context)
Findings	Findings as described by the author will be recorded
Expert comment	Relevant additional comments, for example, about the context of the study, supplied by a reviewer or other external expert.

Appraisal of the included studies

To evaluate the studies, there will be two weights of evidence allocated to each study rated on a five-point Likert scale.

Weight of evidence A: Reviewers will rate the *relevance of the particular focus of the study* for addressing the review question (considering the population, intervention and outcomes, as described in this framework, compared with those described in the study).

Table 5: Assessment criteria for weight of evidence A (relevance)

	Rating				
Population i.e. mature-aged	High	Medium+	Medium	Medium-	Low
Intervention i.e. skill development activities	High	Medium+	Medium	Medium-	Low
Outcomes i.e. improved attachment to the labour market or productivity	High	Medium+	Medium	Medium-	Low
Overall weight of evidence A (relevance)	High	Medium+	Medium	Medium-	Low

Weight of evidence B: Reviewers will rate the *quality of the study* in terms of the trust that can be put in its findings against the questions posed (considering the rules of evidence criteria: validity, reliability, authenticity, sufficiency, and currency).

Table 6: Assessment criteria for weight of evidence B (quality)

In this research study:	Rating				
Is the evidence valid?	High	Medium+	Medium	Medium-	Low
Is the evidence reliable?	High	Medium+	Medium	Medium-	Low
Is the evidence authentic?	High	Medium+	Medium	Medium-	Low
Is the evidence sufficient?	High	Medium+	Medium	Medium-	Low
Is the evidence current today?	High	Medium+	Medium	Medium-	Low
Overall weight of evidence B (quality)	High	Medium+	Medium	Medium-	Low

Note: Both weighting A (relevance/focus compared with review question) and weighting B (quality/reliability of the findings of the study) will be taken into account in preparing the final synthesis report.

Reporting

Full reporting will detail:

- ✧ number of studies found in the initial search

- ✧ number of studies excluded, and reasons for exclusion
- ✧ full details of results of appraisals of included studies.

The final synthesis phase will answer the review question by detailing the evidence (and weight) for skill development activities for the mature-aged that lead to improved attachment to the labour market and/or improved productivity. It will state explicitly what skill development activities work, under what circumstances, and for which groups of the mature-aged, noting barriers and facilitators, and detailing the implications for policy, practice and research.

Background

The National Centre for Vocational Education Research received funding from the Australian National Training Authority to undertake, for the first time, a systematic review of research for Australian VET policy-makers on a question of policy salience. Systematic reviews in the field of education have been undertaken overseas since the late 1990s but this method has not previously been used in Australian education research. In the course of undertaking the review, NCVER will also be developing a framework and capabilities for similar reviews.

The outcomes of the first NCVER systematic review of research project to be achieved by the end of 2004 are:

- ✧ a report of the systematic review of research into a key policy question that ANTA has specified is to be related to mature-aged workers
- ✧ a replicable framework and infrastructure within which further systematic reviews of research can be conducted
- ✧ a report on the process of this systematic review of research.

In undertaking this review, NCVER is seeking a highly interactive relationship with Commonwealth, state and territory policy-makers, and a network of VET researchers throughout the systematic review process. Consultation will ensure that this first Australian VET systematic review of research has current relevance to policy- and decision-makers.

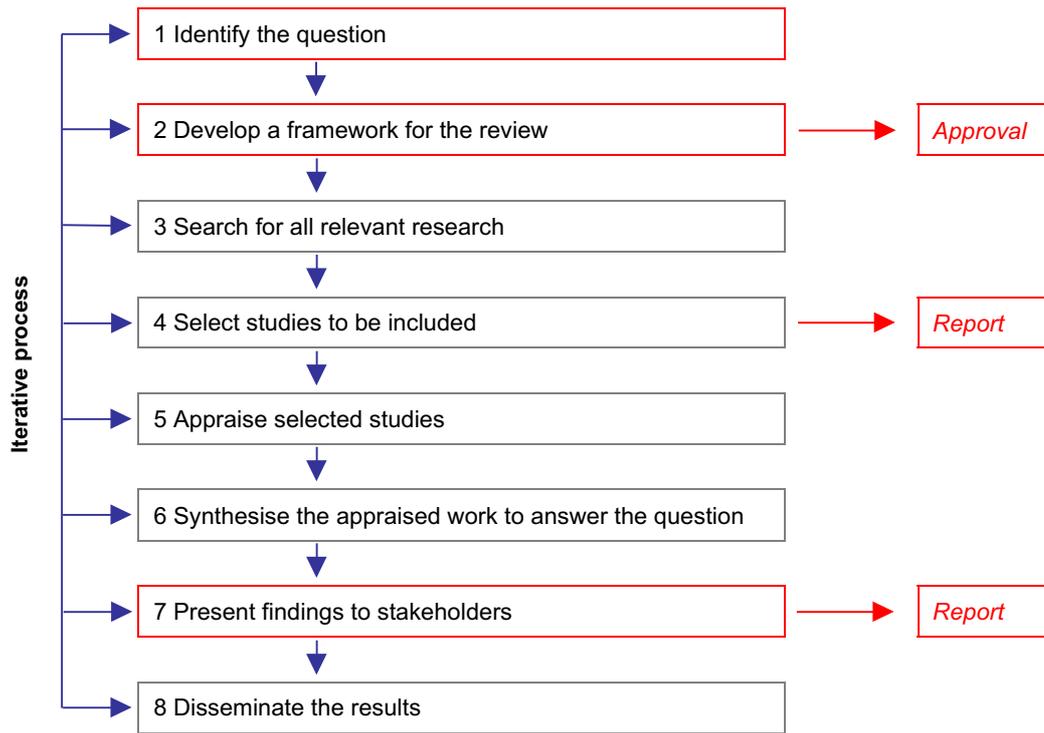
What does a systematic review of research involve?

A systematic review of research is a secondary research activity that locates all relevant existing material (published and unpublished) on a focused policy question. It evaluates this material for its information content, approach and robustness, concluding with a balanced and relevant synthesis of the findings.

A systematic review of research follows a structured framework, and is transparent in its approach, making clear the criteria and reasons why a study has or has not been included, and the basis for the judgement of its quality. Thus it provides an empirically based foundation for decision-making.

The United Kingdom-based Evidence for Policy and Practice Information and Co-ordinating Centre was established in 1993 to address the need for a systematic approach to the organisation and review of evidence-based work on social interventions. The centre-developed model of systematic reviewing has been followed and adapted by the Learning and Skills Development Agency in the United Kingdom. In this project, NCVER will adapt the centre model and other approaches to suit our purposes. The eight steps for this systematic review are outlined in the following chart.

Figure 3: Summary of the steps of a systematic review



Source: Adapted from National Health Service Centre for Reviews and Dissemination 2001

Appendix C: Summaries of 11 key studies

91: Jenkins, A, Vignoles, A, Wolf, A & Galinda-Rueda, F 2002, *The determinants and effects of lifelong learning*, Centre for Economics of Education, London School of Economics and Political Science, United Kingdom.

The study

The authors of this paper note that there is very little hard evidence from the United Kingdom on:

- ✧ the extent of lifelong learning
- ✧ who undertakes lifelong learning and why
- ✧ the benefits of lifelong learning.

Their paper addresses all three of these questions, concentrating on qualification-oriented learning of individuals between the ages of 33 and 42. Specifically, it identifies the factors that determine whether someone undertakes lifelong learning, defined very narrowly for the purposes of their research, as learning that results in a qualification. It then models the effects of the different qualifications acquired via lifelong learning on the individuals' economic outcomes, namely wages and the likelihood of being employed.

The paper uses a longitudinal data set of a cohort of individuals born in the United Kingdom in 1958, called the National Child Development Study. (This data set is also the focus of study 17.) The data arising from this cohort study enabled them to identify the effect of lifelong learning on wages and employment after allowing for a variety of factors that also affect the labour market outcomes.

The cohort was made up of 2378 males and 2004 females; it excluded self-employed persons and those with a variety of missing data, such as test results and qualifications.

The researchers sought to control for certain biases such as the possibility that only very able individuals may undertake lifelong learning in the first place. However, they do not claim to have overcome all sources of bias and suggest that it may have been a problem in their research. They therefore plan future work to focus further on this issue.

Relevance of this study to the systematic review

Relevance is an issue as the age range of 33–42 is outside the target of 45 years and over as specified for 'mature-aged' in the systematic review. However, the evidence that those who were out of the labour market at the beginning of the study were able to use lifelong learning to help them in their transition into the labour market supports the view that this could be a valuable precursor to a similar study of an older group. Nevertheless, it will be important to look for evidence that the findings do, in fact, apply equally to the mature-aged.

Nature and extent of the skill development activities undertaken

To be counted as a participant in lifelong learning for the purposes of this study, an individual needed to have acquired a recognised qualification; 31% of males and 37% of females met this requirement. Qualifications covered a wide range, from higher degrees through A levels, O levels

and secondary school certificates on the academic side, to the professional degree-level qualifications and National Vocational Qualifications levels 4 to 1 (or their equivalents) on the occupational vocational side.

Of the 2375 qualifications obtained by the cohort, by far the most popular were lower-level occupational qualifications such as National Vocational Qualifications levels 1 and 2. These made up almost 50% of all qualifications recorded.

Only a relatively small number took academic qualifications, although 201 (4%) completed a degree.

Outcomes related to attachment to the labour market

Undertaking lifelong learning was associated with increases in the probability of being in the labour market in 2000 for those who were out of the labour market in 1991. This result applied to both men and women.

Those who undertook lifelong learning between 1991 and 2000 were more likely to be in full-time employment. This was particularly true for women.

There was evidence that those who were out of the labour market in 1991 were able to use lifelong learning to help them in their transition into the labour market.

Possession of all kinds of lifelong learning, academic, vocationally related and occupational qualifications, significantly raised the probability of women returning to the labour market in 2000, while occupational qualifications obtained between 1991 and 2000 increased the probability that men would return to the labour market.

Undertaking lifelong learning did not have significant effects on the probability of remaining in employment in 2000 for those who were already in employment in 1991.

Outcomes related to productivity

An encouraging finding was that those without a qualification in 1991 who undertook lifelong learning leading to a qualification between 1991 and 2000 obtained higher earnings than those with no qualifications in 1991 who did not engage in lifelong learning.

Other evidence of positive effects of lifelong learning on wages was quite limited.

A comparison of the results obtained for men and women suggests that there are many similarities, but also some important differences. For example, level 2 occupational qualifications (for example, National Vocational Qualification level 2) yield a negative wage premium of 11% for men and 6% for women. For women, taking a degree or level 4 occupational qualifications in later life (for example, nursing, teacher training) does appear to yield a wage premium. For males, only higher degrees yielded a wage premium if taken as a mature student. (Note however, these results were not robust in statistical terms.)

90: Karmel, T & Woods, D 2004, *Lifelong learning and older workers*, NCVER, Adelaide.

The study

This paper uses a quantitative approach to examine the role that education and training plays in the participation of older persons (40 to 64 years of age) in the labour market. The paper uses current and past levels of education, as well as future projections to determine the impact that rising levels of education are having, and will have, on employment rates now and into the future. The authors examine the relationship between the timing of education and training and engagement with the labour market. They also examine the pay-off to undertaking education and training as an older person compared with undertaking education and training earlier in the life cycle.

The study uses the Australian Bureau of Statistics Survey of Education and Training Experience, 2001. This survey contains a rich set of educational data and was conducted by personal interviews. Earlier ABS surveys on Transition from Education to Work, 1993, 1998 and 2003 were used to identify changes to labour market attachment. The Survey of Education and Training Experience data were collected at a point in time and are not part of a longitudinal study.

Relevance of this study to the systematic review

The study targets the relevant population by considering education levels and how these impact on employment rates of both males and females. It relates increased levels of education in the older population to productivity issues. However, it does not provide information on specific skill development activities that lead to the achievement of a particular education level.

It shows there are increasing education levels in existing age cohorts over time and uses these to predict future higher levels of attachment to the labour market for older age groups, especially for women. However, the authors noted that this prediction carries the assumption that the labour market will change over time to demand more educated workers.

Nature and extent of the skill development activities undertaken

The paper is essentially about the relationship between education levels and the employment of older workers. The emphasis is on formal education and training from school, VET and higher education that leads to a recognised qualification. The learning activities underpinning qualifications were not part of the study.

Outcomes related to attachment to the labour market

For a given age, employment rates rise with increasing education levels and the impact of education is more pronounced for women than men.

Lifelong learning plays a role in labour market attachment. Qualifications acquired later in life have as good, and in some cases, better, pay-off in terms of employment rates for older age groups as qualifications obtained at a younger age.

Older persons who have on-the-job training are more likely to retain their employment status relative to their employed peers who are not getting training. Training appears to be helpful in maintaining employment. However, one explanation for this is that employers tend to make training investments in those individuals they expect to retain as employees.

On the whole, the more qualifications an individual has, the better, although the evidence on lower-level qualifications and incomplete qualifications improving employment rates is mixed. For example, the results suggest that it is higher-level awards (certificate III and above) that have an impact on employment. Incomplete and lower-level awards do not necessarily make much difference to groups' employment rates.

Outcomes related to productivity

The authors note that over time the increasing level of education in successive age cohorts in Australia is building up an 'education effect' in the cohorts. This 'education effect' is important when working hours patterns are taken into account because the better qualified individuals tend to work more hours (to a large extent, because more are engaged in full-time employment).

Historically, the 'education effect' has been important in explaining the current working patterns. For males, the positive 'education effect' has been against a long-term decline in labour force participation. For females, it has contributed to long-term increases.

Projections made from the data indicate that an 'education effect' will partially offset the impact of the ageing of the population, but the demographic impact of the ageing population dominates.

85: Jacobson, L, La Londe, RJ & Sullivan, D 2003, *Should we teach old dogs new tricks? The impact of community college retraining on older displaced workers*, Federal Reserve Bank of Chicago, United States.

The study

This paper estimates the returns to retraining for older displaced workers—those 35 or older—by estimating the impact that community college schooling has on their subsequent earnings. The analysis relies on longitudinal administrative data covering workers who were displaced from jobs in Washington State during the first half of the 1990s and who subsequently remained attached to the state's workforce. The database contains displaced workers' quarterly earnings records, covering 14 years matched to the records of 25 of the state's community colleges. The study covered all workers who were retrenched and who were between 22 and 60 years of age at the time of retrenchment. Models for analysis were developed to allow comparisons of the behaviour of older (35 years and over) workers with younger ones.

The sample contains over 65 000 displaced workers, 10 400 enrolled in training, and about 5200 of these were 35 years or older. There was a comparison group of 54 900 displaced workers who were not enrolled in training.

The original methodology was developed in an earlier paper by the authors and numerous references are made to it. However, in this paper, details of this methodology and its application are at times unclear. The model is estimated with four different specifications. Other methodologies used are cost–benefit analysis and internal rate of return calculations.

Relevance of this study to the systematic review

Elements of this study are relevant to the systematic review. The focus on the returns from training for older workers (with comparisons to a control group) closely aligns with the aims of the systematic review. On the negative side, all data relate to displaced workers and all skill development activities are provided by community colleges, which restricts the findings being applied to older workers in general. The definition of an older worker as 35 years and above also means the population in this study is broader than the target group of the systematic review.

Nature and extent of the skill development activities undertaken

There is limited discussion of the skill development activities provided by the community colleges. It would seem that a wide variety of formal community college courses were taken. However, the displaced workers taking courses were unlikely to complete a degree. The analyses were done using the number of course credits obtained. The state's academic year consists of 45 credits; about one-third of older displaced workers who participated in retraining completed only one course (about five credits). Older workers were less likely to complete five or more courses (21 or more credits) than younger trainees. For males and females, the differences are 6% and 7% respectively.

The researchers identified two groups of training courses taken by the displaced workers. The first of these (group 1) contained technical and trade subjects with a more quantitative emphasis. The other group (group 2) included sales and services, social sciences and humanities, and basic skills. These were more qualitative courses.

Outcomes related to attachment to the labour market

In this study the participants were initially unattached to the labour market, and their re-entry enabled a calculation of the relative rates of return to training for the older and younger retrenched worker groups. It is unclear whether undertaking skill development activities assisted the workers' re-entry to the workforce.

Outcomes related to productivity

The earnings per quarter are significantly higher for retrenched workers who undertook training compared with those who did not, when a number of personal, economic and training course effects are controlled for using the authors' model. However, this result is not evident when just the average earnings of those who undertook training and those who did not are compared.

The study suggests that the impact of training on earnings is initially negative after training, but positive soon after and can persist over time. However, because the participants' community college schooling was heavily subsidised by taxpayers, the study also notes that society only approximately broke even when an older displaced male was retrained, or netted a modest benefit when an older female was retrained.

The choice of courses seems to have a significant impact on the returns to training: those who took mainly quantitative group 1 courses experienced higher earnings per quarter than those who took the less quantitative group 2 courses. As about half of the credits completed by male displaced workers and nearly two-thirds of those completed by female displaced workers were in group 2, the authors raised the possibility that older displaced workers should be encouraged to take group 1 courses.

68: Blondal, S, Field, S & Girouard, N 2002, *Investment in human capital through post-compulsory education and training: Selected efficiency and equity aspects*, OECD, Paris.

The study

This study reviews the literature from OECD surveys and secondary data sources associated with various aspects of skill acquisition by young people and older adults. The analysis suggests that human capital investment is associated with significant labour market gains for individuals, including higher post-tax earnings and better employment prospects, which exceed the investment costs (mainly forgone earnings and tuition fees) by a significant margin. It also shows that the net benefits are strongly influenced by policy-related factors such as study length, tuition subsidies and student support. Overall, the estimates reported in the paper indicated that there are strong incentives for the average student to continue studying beyond the compulsory schooling age, and also point to the benefits of such investment in education for society as a whole. However, the net gains fall with increasing age, mainly reflecting a shorter period to take advantage of the benefits that come with education. Finally, the paper notes that young people from disadvantaged backgrounds are less likely to participate in tertiary education and thus benefit more from public subsidies than those from more affluent backgrounds.

Relevance of the study to the systematic review

The bulk of this study is directed at issues related to the efficiency and equity outcomes of post-secondary education and training experiences for all workers. Only a small section looks at issues relevant to older workers and few comparisons are made between older and younger workers. However, the paper does present some relevant findings on the impact of public pensions on human capital formation.

The term 'older worker' is not defined, although there is a suggestion that it refers to learners over 40 years of age.

Nature and extent of skill development activities undertaken

The paper deals with a wide range of formal education and training programs in the OECD countries, but has a general rather than a specific approach.

Outcomes related to attachment to the labour market

Opportunity costs of forgone earnings will be significantly higher for older adults if education requires time out of work. As earnings tend to rise with age, the rising costs act as a disincentive for adult workers to invest in additional human capital.

The eventual return in the form of higher earnings from formal education or training at older ages may be subject to considerable uncertainty. Making use of enhanced human capital may often require switching to another employer, in which case wage premiums due to seniority or employer-specific skills will be lost and thus cancel part of the expected gains.

Adult workers will often not have the same access to public financial support as their younger counterparts. In some countries there is an age limit for entitlements to standard student grants and loans; in other countries the means testing of such support is likely to limit the availability to adult students.

The shorter remaining length of working life for adult workers also implies a compression of the period to amortise the investment costs associated with such programs. A shorter remaining working life is likely to be a greater disincentive for human capital acquisition as a worker gets older.

Under prevailing policies in OECD countries, private incentives to increase human capital diminish with age. By the age of 40 the internal rate of return to tertiary education is considerably lower on average than that for young men undertaking such studies as a part of their initial education.

However, the design of pension systems can encourage or discourage mid-career investment in human capital, depending on how retirement pension wealth is affected by the subsequent increases in earnings. If higher contributions had to be paid on higher induced earnings, this would act as an implicit tax on human capital and would reduce incentives for education activity. A possible education-induced reduction in pension wealth could result, for example, in any reduction in effective working life, if pensions were dependent on years of service. If pensions and contributions are unaffected by increased earnings, they will have no impact on the incentives to pursue education.

Current pension systems in the OECD countries seem to have only limited direct effects on incentives to invest in adult learning.

Even if the direct impact of public pension systems on human capital formation by adult individuals is small, they have an important indirect effect through their influence on the age at which people retire from the labour market.

Outcomes related to productivity

The authors acknowledge that it has proved difficult to isolate the impact of training on productivity, but point to empirical studies providing some direct evidence that training activity has succeeded in raising productivity in the enterprises and sectors involved. However, this conclusion was drawn from the authors' overview of all studies, not those specific to older workers.

Nature and extent of barriers and facilitators

The barriers identified were:

- ✧ uncertainty surrounding the prospect of higher earnings from training
- ✧ the shorter length of working life compressing the period to amortise the investment cost of training
- ✧ pension systems that discourage older workers investing in training
- ✧ older workers having less access to public financial support than younger workers
- ✧ employers selecting the better educated workers for training
- ✧ employers seeing lower rates of return in the training of older workers

- ✧ public policy as the principal way of facilitating training. The recommendations included:
 - ◆ changes to the current pension systems (early access to pensions limits incentives to train)
 - ◆ participation in adult education programs designed in ways that reduce the opportunity costs to older workers
 - ◆ tax levies and tax incentives for employers to stimulate training activities
 - ◆ legislation to grant 'workers' rights' to training.

45: Hill, ET 2001, 'Post-school-age training among women: Training methods and labour market outcomes at older ages', *Economics of Education Review*, vol.20, no.2, United Kingdom/United States of America.

The study

This is a United States study using the Mature Women's Cohort of the National Longitudinal Survey to examine labour market effects of education and training on women at pre-retirement ages. This involved a comparison of training methods—formal education, on-the-job training, and other training.

The National Longitudinal Survey of Labor Market Experience for Mature Women began in 1967 and interviewed women for the first time when they ranged from 30 to 44 years of age. This study focuses on the period up to 1984 when the women had reached the ages 47 to 61 because that was the last year before this cohort began eligibility for social security retirement benefits and/or pensions, no doubt changing their labour market incentives.

The cohort contains 5083 women, but to select women for whom 1984 information was available, only women who responded to the survey that year are included, producing a sample of 3422. Wage data for many of the survey years are available so that wage changes can be measured.

Relevance of this study to the systematic review

While providing some useful information, the report is restricted in that it only considers women. Furthermore, the data on training is 20 or more years old, and since this time, both the nature and techniques of training have evolved considerably.

In the discussion of questions in the survey, the authors note that, because formal on-the-job training is implied in one of the questions used, informal on-the-job training is likely to be excluded. The authors reinforce this point by acknowledging that the questions asked of the cohort changed over the years and that questions '... which asked where respondents took the training (for example, company training school, college, vocational school) and whether the training was professional, managerial, clerical etc., proved not to provide good information for this analysis' (p.190).

Nature and extent of the skill development activities undertaken

A breakdown of the training incidents shows that 55% reported training in 1984. In about a quarter of the incidents, respondents acquired formal training; in about a third, on-the-job training, with the remainder describing 'other' training defined as neither formal nor on-the-job training. It is not possible to deduce from the report whether on-the-job training was structured or unstructured, or how 'other training' was defined.

The report indicates that, on average, more than two training methods were experienced by those women in professional and technical occupations who receive training. The average number of training incidents appears to fall, along with the skill level of the occupations.

On-the-job training was used in 30% or more of the training events for all the occupations except farmers and farm workers. Not surprisingly, managers and proprietors, likely to need more training specific to the firm than other occupations, reported a large percentage of their training as on-the-job training incidents.

In more highly skilled occupations, education and on-the-job training were typically used to train workers, while workers in less skilled occupations tended to acquire 'other training'. Although not a direct comparison, the large percentage of other training for all of the occupations tends to support previous studies observing that women acquire more off-the-job training than men.

Outcomes related to attachment to the labour market

The study found that later training is associated with greater labour force participation at older ages.

The acquisition of both on-the-job and 'other' training as adults was associated with the labour force participation by the women at older ages, while obtaining education was not.

Outcomes related to productivity

All types of training obtained at early ages (before 1967) were associated with higher 1984 wage levels.

On-the-job training pays off for both employers and older women in that the women who train remain in the labour force at older ages and sustained higher productivity as measured by wages.

74: Naegele, G 1999, *Active strategies for an ageing workforce: Conference report*, Office for Official Publications of the European Communities, Luxembourg.

The study

The European Foundation for the Improvement of Living and Working Conditions is an autonomous body of the European Union, created to assist the formulation of future policy on social and work-related matters. The Turku Conference (12–13 August 1999) examined the development, implementation and assessment of 'active' strategies—policies and practices to promote participation in employment and productivity of the ageing workforce. These included the evaluation of different programs from many countries, especially the Finnish program as an example an 'active' ageing integrated strategy to promote opportunities for the ageing workforce. Other examples, especially from Spain and Italy, illustrated holistic approaches to reintegration of the very disadvantaged in the labour market.

The Finnish National Programme for Ageing Workers (FNPAW) was a multi-faceted program which ran between 1998 and 2002. The program consisted of 40 'actions' which were set down by government resolution.

These actions comprised:

- ✧ an extensive information and training program for various target groups (occupational health care staff, regional occupational safety authorities and labour administration staff, workplace communities, individuals) with the aim of encouraging workplace health promotion to maintain the working capacity of ageing workers, and of increasing awareness about issues related to ageing
- ✧ studies on certain legislative topics (the position of ageing workers in relation to redundancy or termination of employment, the form of financial support systems for adult education, the question of the insured's own risk in disability and unemployment pensions, graduation of employment pension contributions according to age, and the removal of social security contributions unconnected with work).

The program generated substantial interest among European Union countries and was the subject of at least two international conferences. An external evaluation was carried out in 2002; this has been incorporated into this review. The overall conclusion of the evaluation is that the outcomes are positive, but they point out the difficulties of establishing causal links. The authors make the point that, in the absence of any serious counter-evidence, they can be confident of the positive contributions from the program.

Relevance of this study to the systematic review

The Finnish approach involved all workers with special effort directed at the older group—55 years and over—as these individuals had low education levels and low training participation rates. However, as training was only of a number of policy initiatives implemented between 1998–2002 and only a small component of the overall program, the relevance of this study to the systematic review is not high. Furthermore, although the program was much admired by representatives from the other European Union countries, some doubts were expressed about its transferability.

Most of the countries saw problems of a social and cultural nature that would need to be resolved before such a program could be initiated. However, it has been included because it represents a radically different approach to dealing with older workers, one that requires cooperation between a wide range of public and private sector interests.

Nature and extent of the skill development activities undertaken

Training occurs at all levels of the program from ‘executives’ to ‘trainers’ and the workers and those out of work. Topics include occupational safety, health care, maintenance of workability, age management, ageism and learning by older people. However, little information is available on the content of the programs (it may be necessary to get these translated from Finnish).

Outcomes related to attachment to the labour market

The authors state that research has shown that education and further training have paid off for both the older workers and their companies. For example, in the program period, the employment rate has increased in general, and in the 55 to 59 and 60 to 64-age groups in particular. The rate for the 55 to 59-age group had increased by 9%. However, they are guarded about claiming a causal relationship, as they recognise that a number of initiatives other than skills training are involved.

Outcomes related to productivity

As for attachment outcomes, there is evidence that education and training improve productivity for both individuals and companies, but the authors are reluctant to make causal claims at this point in time.

Nature and extent of barriers and facilitators

The study of the Finnish National Programme for an Ageing Workforce was a multi-faceted program that targeted a wide range of individuals, from company executives through to supervisors, trainers, workers and the general community. Training, therefore, was only one of many components. The barriers to training older workers identified were:

- ✧ discrimination with regard to recruitment, especially for the unemployed
- ✧ health problems and limited functional capacities such as speed of working
- ✧ demands of other responsibilities (for example, caring for aging parents).

Action throughout working life was the approach advocated for addressing these barriers. This included the coordination of social and health interventions with employment policies, giving more attention to job design for older workers, and more training in age awareness for employers and the community in general.

2: Wooden, M, Vanden Heuvel, A, Cully, M & Curtain, R 2001, *Barriers to training for older workers and possible policy solutions*, Department of Education, Training and Youth Affairs, Canberra.

The study

This study reports on firstly, the barriers facing older workers—those aged 45 years and over—in obtaining and benefiting from training and, secondly, innovative and practical policies for removing the barriers identified. The study had four main aims:

- ✧ to quantify the current extent of participation in work-related training of older workers and compare their training incidence with that of younger workers
- ✧ to determine the extent to which participation in work-related training among older workers has changed over time
- ✧ to identify the factors that may limit older workers' participation in work-related training
- ✧ to suggest policy options that may assist the removal of barriers faced by older workers in gaining work-related training.

The study involves a comprehensive review of both Australian and international literature; statistical analyses of large, nationally representative surveys; focus groups with older persons; and three case studies of 'lighthouse' firms—defined as having policies in place to address the barriers to training of older employees, either as a specific group or as part of the total workforce (p.204). The three case studies were:

- ✧ *Public correctional enterprise CORE*: Victoria; 1100 employees, an older workforce (p.208). Training has changed from off-the-job and classroom-based to on-the-job and delivered by peers (in context of competency-based job structure). This has greatly increased its appeal to older workers (p.214). The whole process of delivering training within the workplace required established employees having to re-learn their jobs to be able to teach others what was required. The training was evaluated through the use of focus groups convened three to four weeks after the training. This method of gaining useful feedback has resulted in several revisions of the course material (p.213). In addition, learning is given a broader context by linking it in a measurable way to the attainment of personal and organisational goals (p.214).
- ✧ *Manufacturing plant*: 85 employees; at the start of a 15-year strategy the workforce was ageing, blue-collar with a strong demarcation between production operators and maintenance trades (p.204). Skill development activities include off-the-job external training where fees are reimbursed and employees are expected to undertake it in their own time; on-the-job unstructured training through cross-functional improvement teams, project teams, designated work teams and committees (p.218). A significant feature of the new competency-based job structure was the combining of skills in instrument fitters with those of electricians. It was during this stage of the change process that older workers played a leading part. According to the General Manager, 'the older workers pushed through these changes'. The older workers saw clearly the need for change and responded accordingly (p.215).
- ✧ *ANZ Bank*: 19 919 employees in Australia (with 16 670 full-time-equivalent positions). Some 22% of the workforce was aged 45 years and over, of whom 62% were women. ANZ Bank provides external, internal and on-the-job training and also offers financial support for external studies. The bank encourages self-initiated skill development activities; for example, under the competency (capability) 'applying business knowledge', the suggested skill development activities include keeping up to date with general business trends by widely reading relevant newspapers, articles and journals; actively building internal and external networks with individuals who are knowledgeable about current business trends and issues (including consultants); and joining a business-related professional organisation or association (p.226).

Relevance of this study to this systematic review

The study provided clear evidence that older employed persons were significantly less likely to receive training than their younger counterparts. The authors also note that this finding varies with the type of training received.

Except for the three case studies, the report does not provide details of training or outcomes. However, issues related to participation in work are well covered. These case studies provide clearer evidence of positive outcomes, but the authors make it clear that factors other than skills development are involved.

Nature and extent of the skill development activities undertaken

Three broad categories of training were identified:

- ✧ occupational or technical training
- ✧ mandatory training associated with health and safety requirements and similar ‘duty of care’ responsibilities
- ✧ the ‘soft skills’ of teamwork, problem-solving and communication. (The soft skill requirements vary according to whether the job is ‘high-level problem-solving’, ‘in-person service’ work or ‘routine production’ work.)

Outcomes related to attachment to the labour market

The case studies suggest that there are linkages between the training provided and outcomes such as job retention, change of work role, change of career, and change in employment duration. But, explicit evidence to demonstrate this actually occurred as a result of skill development activities is not provided. One study noted that labour turnover at the start of the retraining process was of the order of 60% per year, whereas at the completion, it was 2% to 3% per year.

The analysis of secondary data sets explored the question of jobs cessation and noted that, in part, the higher rate of voluntary turnover among those aged 55–69 years, when compared with those aged 45–54 years, reflects a greater propensity to retire from the labour force. No parallel age-based information is presented to account for the higher rate of involuntary turnover of the older age group. Ill health or injury may be a cause; however, this accounts for only 10% of the total involuntary job losses and is only weakly associated with job tenure.

Outcomes related to productivity

Evidence from the case studies shows that workers who had participated in training were more engaged, better skilled and more cooperative with co-workers and management. However, the authors do not attribute this to being an outcome solely of skill development activity. They saw the case studies as providing an insight into the use by firms of an integrated strategy that focused on upgrading workforce skills by changing workplace culture. It was the culture—the context and the suite of aligned changes in management and strategy—that was ultimately responsible for the benefits in productivity, not any single program.

Nature and extent of barriers and facilitators

Given its title, it is not surprising that it is here we find the greatest number of barriers and facilitators among all the selected studies. The authors reported that older workers encountered seven barriers:

- ✧ absence of paid work (a particular problem for the long-term unemployed)
- ✧ limited learning capacity (older people take longer to learn new skills)
- ✧ lower prior education attainment
- ✧ employers’ uncertainty about retirement intentions of older workers

- ✧ employers' discrimination against older workers in favour of younger ones
- ✧ self-discrimination (older people internalise the negative attitudes of employers and the general community)
- ✧ nature of training (older workers can have negative attitudes about training in 'soft skills' such as team work and problem solving—this can be related to stubbornness and inflexibility).

The actions canvassed to facilitate training and overcome these barriers emphasise the need to change the workplace culture. The authors identify a need to develop manager and assessor competencies and the use of total quality management techniques.

They also point out that changes in public policy can remove barriers, for example, public awareness campaigns, promotion of lifelong learning and raising the preservation age for access to superannuation.

The four additional key studies included for their information on barriers or facilitators were studies 17, 57, 73 and 88 which follow.

17: Feinstein, L, Galindo-Rueda, F & Vignoles, A 2003, *The labour market impact of adult education and training: A cohort analysis*, Centre for Economics of Education, London School of Economics and Political Science, United Kingdom.

The study

This study involved an analysis of data from a longitudinal survey based on the United Kingdom National Child Development Study of people born in 1958. The database contains information on each cohort member, including scores on attainment tests and family background variables. The researchers compared the impact of work-related training with not training on wages for a sample of male workers. The workers were between the ages of 33 and 42 years.

The researchers found that the workers who are selected to receive training are not representative of all workers. They had left the education system with better qualifications and were, overall, more productive and more able. Employers can apparently identify these individuals as those most likely to gain from further training.

The modelling used by the authors showed that workers who received training gained substantially in wages. However, those workers who did not receive training would not have gained higher wages from the training had they done so. This evidence suggests that, to some extent, firms are able to not only pick those workers most likely to gain from training, but also to provide training that has a positive impact on their wages.

Nature and extent of barriers and facilitators

Except for a chosen few, it would appear that work-related training for older workers is not necessarily a substitute for providing workers with adequate skills during their initial education.

Low-productivity workers with few skills are unlikely to gain from a policy to encourage employers to provide training. Instead, firms are likely to train those workers who are more able in the first place, thereby leaving the poorly skilled worker even further behind.

The only barrier, therefore, was not being identified by the employer as suitable for further training. The study did make clear how the employers made their selection decisions.

Facilitators included being chosen by the employer for further training (not surprisingly) and possessing skills from prior education or training.

57: Taylor, P & Urwun, P 2001, 'Age and participation in vocational education and training', *Work, Employment and Society*, vol.15, no.4, pp.763–79, United Kingdom.

The study

This study involved an analysis of data from the 1997 United Kingdom Labour Force Survey and compared training of 'prime aged' workers with those aged between 40 and 49 and 50 and 59 to 64. The analysis identified how rates of participation in training differed between the age groups and suggested reasons for the difference.

The research involved isolating the relative importance of individual preferences and employer decision-making in determining the propensity of older workers to undertake training. The skill development activities done as a part of training were not considered in the study. The focus was on older workers employed in companies and, in particular, identifying the employer attitudes towards these older workers.

Nature and extent of the barriers and facilitators

The study found that older workers were less likely to receive or be offered training than younger workers and that older male workers received less training than females. Other older groups that were less likely to receive training were:

- ✧ members of ethnic minorities
- ✧ part-time and casual workers
- ✧ those working for smaller companies.

One group of older workers who fared better were those with long service at the company. Another recommendation for addressing the barriers was action (unspecified) to bring about changes in the negative attitudes of employers. But it was also noted that proposed government interventions to address these issues were problematic, since employers as a group tended to have negative reactions towards such initiatives.

The authors stated that their analysis supported the conclusion that the relatively low level of older worker training is to a large extent a result of employer decision-making. However, they were unable to identify how employers arrived at their decisions.

73: European Foundation for the Improvement of Living and Working Conditions 1997, *Combating age barriers in employment: Research summary*, Office for the Official Publications of the European Communities, Luxembourg.

The study

This study collected information about 'good practices' to combat age barriers in recruitment and training in the European Union member states. It examined proposals for removing age barriers and documented a small number of initiatives in progress. These included workplace and non-workplace initiatives and covered both the public and private sectors.

A research team was established in each participating country and each team conducted:

- ✧ a review of ageing and employment
- ✧ an outline of the perspectives of the social partners (based on workshops)
- ✧ the identification of a portfolio of around 20 initiatives demonstrating 'good practice' in age management
- ✧ two or three case studies of organisations from the portfolio.

Most of the 14 case studies involved private companies and were work-based. The methodology for the case studies included site visits and interviews.

The research summary presents a set of strategies for improving the employment prospects of an ageing workforce. It does not consider skill development activities.

Nature and extent of the barriers and facilitators

The barriers were related to getting and keeping jobs not skill development, and were:

- ✧ negative attitudes of line managers towards older workers
- ✧ the absence of learning and training environments conducive to the needs of older workers
- ✧ absence of a workplace culture inclusive of older workers
- ✧ negative attitudes of older workers towards attending seminars and training
- ✧ older workers believing they are discriminated against.

The facilitators identified were:

- ✧ implementation of age awareness strategies (via policy decisions)
- ✧ gaining support of senior management for changes
- ✧ gaining commitment from the older worker group to be involved in employment programs
- ✧ financial support from the governments involved
- ✧ careful and flexible implementation of a program based on the changes.

The authors of the report also suggested that the success of any program to overcome barriers required a commitment on the part of the aged individuals themselves.

88: Organisation for Economic Co-operation and Development 2004, *Ageing and employment policies: Finland*, OECD, Paris.

The study

This is one of about 20 OECD country reports involving thematic policy reviews aimed at improving the labour market prospects of older workers—in this instance, in Finland. Among other things, it examines measures to improve the job skills of older workers. It deals with skill development in a limited way. There is more focus on policy issues, in particular, time of take-up of social security benefits, reforms to the old-age pension and the weak anti-age discrimination legislation.

The report examines wage-setting practices for older workers, age discrimination, ways to improve job skills and working conditions, and how to better ‘activate’ the older worker. It is a review using secondary OECD data for analysis and focuses on male and female workers 50 years and over. These data enable comparisons to be made between the Finns and the other participating OECD countries. Finland’s population will age more rapidly over the next 25 years than most other OECD countries, so there is a need for reform to the public pension system and for actions to enhance the employability of older individuals.

Nature and extent of the barriers and facilitators

The issues identified as barriers were:

- ✧ attitudes of older workers (there is a low incidence of training among this group)
- ✧ discriminatory attitudes towards older workers by their peers and their employers
- ✧ access to services, in particular, problems faced by job seekers in taking up a job
- ✧ prior educational background tending to be relatively lower than for younger workers

- ✧ the structure of the Finnish employer social security contributions tending to make older workers more expensive to retain in the workforce
- ✧ attractive retirement benefits providing incentive to retire early
- ✧ weak anti-discrimination legislation.

A set of public policy reforms is seen as the way to facilitate the improvement of skills among older workers. The authors suggest the development of a national program on ageing for industry that aims to keep older people longer in work and the reform of the public pension system to reduce the numbers taking early retirement.

Appendix D: Summaries of the 22 studies not included in report

4: Gelade, S, Catts, R & Gerber, R 2003, *Securing success: Good practice in training people aged 45 and over who are disadvantaged in the labour market*, Department of Education, Science and Training, Canberra.

This study looks at disadvantaged persons over 45 years with low prior education attainment or unemployed. The study focuses on the learning environment rather than on the nature of the skill development activities. It contains weak evidence that skill development activities improve attachment to the labour market, but is limited to adult and community education (ACE) and this disadvantaged group. While the intent of the study was broader than ACE, the reliance on self-propagated sampling resulted in a more narrow focus. This study does provide some discussion on barriers and facilitators to skill development activities for this disadvantaged group.

6: Yeatts, DE, Folts, WE & Knapp, J 2000, *Older workers' adaptation to a changing workplace: Employment issues for the 21st century*, Carfax Publishing, Taylor & Francis, United Kingdom.

This study reviews the literature describing the conceptual framework and major individual and organisational factors found to affect an older worker's ability and choice to adapt to workplace changes. It includes information on barriers and facilitators to training for the mature-aged, including training throughout an individual's career, personnel policies affecting older workers, and age discrimination. However, the results do not relate to specific skill development activities. The population of 'older workers' is not defined further.

10: Blue Ribbon Commission on Older Workers 2000, *Older workers: An essential resource for Massachusetts*, Commonwealth of Massachusetts, United States.

This study analyses the labour market for older workers in Massachusetts, and includes employer and job seeker perceptions on workplace training practices. It makes recommendations on policies to improve the economic status of the older labour force. This study is more focused on policies to address labour market issues for older workers than on addressing the review question of what skill development activities work for the mature-aged. It highlights the relationship between poor education and unemployment and the need for more post-program evaluation. The population is those aged over 45 years training at community colleges in Massachusetts.

14: Davey, JA 2002, 'Active ageing and education in mid- and later life', *Ageing and Society*, vol.22, New Zealand.

This is a quantitative study examining the characteristics and aspirations of older (40+) graduate and post-graduate university students in New Zealand and is one of the few studies that includes an analysis of those aged over 60 years. It also looked at how participation in education by *people* in mid- and later life relates to individual pursuit of active ageing, but considered perceptions rather than 'hard' outcomes. This study addresses barriers and facilitators to study for older learners, but does not provide evidence for the review question as it is lacking in outcome evaluation. The population is 40+ graduate and post-graduate New Zealand students.

18: Naegele, G & Kramer, K 2001, 'Recent developments in the employment and retirement of older workers in Germany', *Journal of Aging and Social Policy*, vol.13, United States.

This study reviews recent developments in the employment and retirement of mid-life and older adults in Germany. It explores labour market initiatives and policy changes affecting older workers aimed at increasing their labour force participation.

The study looks at TransALT (Transfer of Integrated Strategies for Age-Management) in North Rhine-Westphalia, designed to combat age barriers to employment. It looks at enterprise training in nursing homes, amongst metal workers and those in the hospitality trade. The study describes the initiatives, but it states that there were not enough resources to evaluate the success or failure of the initiatives. While the study has relevance to the systematic review question, it does not provide direct evidence of labour market outcomes directly related to skill development activities. Population is early retirees who left their jobs while in their 50s or early 60s.

20: Brooke, L 2003, 'Human resource costs and benefits of maintaining a mature-age workforce', *International Journal of Manpower*, vol.24, no.3, Australia.

This Australian study provides an analysis of human resource costs and benefits expressed as the ratio of duration of employment. It compares older and younger workers and considers recruitment, training, absenteeism and work injuries; specific skill development activities are not reported. It looks at company rather than individual benefits, and 'training' is one aspect of these benefits. Population is older workers over 45 years.

29: Walker, A & Taylor, P 1999, 'Good practice in the employment of older workers in Europe', *Ageing International*, vol.25, no.3, United States.

This study reports the results of two European projects which collected examples of good practice in the employment of older workers in European Union countries. The first is the Combating Age Barriers in Job Recruitment and Training project, and the second is the Eurowork Age project. These examples contain barriers and facilitators to training for the mature-aged, as well as outcomes, such as increased attachment to the labour market and changes in work attitude. Improved productivity is noted through increased morale, and social and health benefits are noted, as well as negative outcomes, such as being treated as a 'second class citizen' after training participation. The study comments on the difficulties of attributing cause and effect in many of these examples, and notes that an integrated approach was the most effective way to both prevent and overcome all forms of age discrimination in employment. Population is 'older worker' assumed to be over 40 years.

33: National Economic and Social Forum 2003, *Labour market issues for older workers*, Forum report no.26, National Economic and Social Forum, Dublin.

This report examines labour market participation issues for older workers. The study profiles the participation of older workers, but does not describe specific skill development activities or outcomes, and hence the lower relevance rating. Population is older workers aged 45–64.

36: Tikkanen, T, Lahn, LC, Withnall, A, Ward, P & Kolbein, L 2002, *Working life changes and training of older workers*, VOX and European Commission, Norway.

This is an action research project known as 'WORKTOW', a multidisciplinary research project, with its main focus on the learning of older workers in working life and in individual and organisational development. The aims were to investigate how to recognise, value and utilise job competence; aspects of learning at work; human resources development practices involving older workers and the facilitation of lifelong learning; and how the diversity of the workforce can facilitate the development of learning organisations. In-depth case studies were carried out in three countries involving a range of learning interventions. This study includes information on barriers and facilitators to training for the mature-aged. It also highlights that other factors such as increased social wellbeing can improve productivity in an indirect manner. Population is workers employed by small-to-medium enterprises, aged 45+.

38: Stein, D & Rocco, TS 2001, *The older worker: Myths and realities*, Office of Educational Research, Washington DC, United States.

This United States study relies on secondary analysis only, interpretation of others' knowledge, and does not demonstrate evidence for this review. The study alludes to the benefits of training and career development for older workers, but the evidence drawn from secondary sources is tenuous. Population is retired people aged 40–75 years, studying at community colleges and community agencies (ACE equivalent in Australia).

43: Rainbird, H, Munro, A, Holly, L & Leisten, R 1999, *The future of work in the public sector: Learning and workplace inequality*, Economic and Social Research Council, Lancaster, United Kingdom.

The patterns of manual and clerical workers' access to learning opportunities in the workplace in the United Kingdom were examined through six case studies (three of local authorities and three of the National Health Service) and a survey examining their employees' learning experiences.

This study was rated low in relevance and quality because the population and skill development activities are not specified. It looked at learning opportunities in the workplace and the changing nature of work that is of a low-skill content and routine in nature, but it was not possible to extract information about mature-aged from the study. Population was manual and clerical workers close to retirement age.

44: Urwin, P 2004, *Age matters: A review of existing survey evidence*, Employment Relations research series no.24, Department of Trade and Industry, United Kingdom.

This is a secondary analysis of labour market indicators from both the employer and employee perspective to provide a descriptive account of the labour market profile of different age groups (focusing on those aged between 50 years and retirement), and to assess the impact of age legislation on these groups.

This study provides weak evidence that skill development activities lead to improved labour market retention, but refers to skill development activities only as 'formal qualifications'. Population is 50 years to state pension age.

49: Smith, A (ed.) 1999, *Creating a future: Training, learning and the older person*, NCVET, Adelaide.

This study is a compilation of several studies aimed at explaining how training and learning have assisted the participation of older workers in the workforce. It also identifies specific training issues facing older Australians to assist this sector of the workforce to achieve its potential. The first three studies have scant evidence of causal links between skill development activities and jobs or improved attachment, but provide no evidence of improved productivity. Other cases demonstrated increased wages, promotion and increased morale. The study fails to address causal links between the interventions and outcomes despite being an aim of the report. The study includes evidence of barriers and facilitators. Population is older workers, aged over 45 or relevant to those over 45.

66: Lawson, D, Grace, A & Collinson, N (eds) 2003, *Engaging the untapped workforce: Training solutions for the community services and health industry*, Department of Education, Science and Training, Canberra.

This study looked at mature-aged workers who are unemployed or underemployed, as well as people with a disability and those from culturally and linguistically diverse backgrounds in terms of their access to training and retraining options that could positively affect their re-entry into the workforce. The industry focus of the study was the community services and health industry. A qualitative research process was conducted among three respondent groups: individual members of the target groups; stakeholders; and employers.

The study focused on perceptions of outcomes of training rather than providing evidence of outcomes, and it did not focus on skill development activities, but contains relevant material on barriers and facilitators. Population is unemployed people over 45, also those with a disability, and those from cultural and linguistic diverse backgrounds.

70: Egerton, M 2001, 'Mature graduates I: Occupational attainment and the effects of labour market duration', *Oxford Review of Education*, vol.27, no.1, London.

This paper examines occupational attainment among mature graduates by comparison with early graduates, using data from the General Household Survey (1982–93). It was found that, although mature graduates are disadvantaged on entry to the labour market, after about 15 years they have similar attainment to early graduates.

This study comments on the career trajectories rather than measured outcomes of skill development activities, and therefore does not provide evidence for the review question. However, it does highlight the increased benefits for women over men consistent with other studies. Population is mature graduates (who completed a first degree over the age of 25 years compared with those who completed a first degree under 25 years).

77: Access Training and Employment Centre 2002, *Labour market and training experiences of mature-aged and older people*, volume 1, Report, Access Training and Employment Centre, Melbourne.

The aim of this study was to provide an overview of recent research relating to the employment, training and further education of people aged 45 and over; to analyse participation of this age group in the Victorian training system; and to identify trends and issues in employment and training for people aged 45 and over. It utilised qualitative and quantitative research methodologies, including a literature review and an analysis of participation data. However, because the study looked at participation in training by mature-aged rather than labour market outcomes, it did not present any evidence for the review question. Population is mature-aged/older people (45–64 and 65+).

78: Organisation for Economic Co-operation and Development 2004, *Ageing and employment policies = Vieillesse et politiques de l'emploi: Japan*, OECD, Paris.

This study examines the supply and demand side of older workers following a review of policies in 2001 to improve the labour market prospects for older workers in Japan.

It assesses the impact of policy on older workers rather than providing evidence for the systematic review question, but does provide evidence of barriers and facilitators, such as the role of organisations in influencing training participation. Population is aged 50 or over, concentrates significantly on those aged 60-plus in Japan.

81: Organisation for Economic Co-operation and Development 1999, 'Training of adult workers in OECD countries: Measurement and analysis', *The OECD outlook 1999*, pp.135–75, Paris.

This publication investigates training participation of adult workers across 24 OECD countries. This chapter assembled some of the available evidence and discusses its implications for policy-making and data collection. This study highlights country variation in the extent of training for older workers, and the implications for the country's economy. While this study lacks evidence for the systematic review (skill development activities lack definition and the outcomes are broader economic outcomes rather than individual gains), it does highlight the need for more harmonised training statistics to measure the determinants and consequences of training. Population is the adult workforce (25–54 yrs), but one group is 25–64.

83: Koopman-Boyden, P & Macdonald, L 2003, 'Ageing, work performance and managing ageing academics', *Journal of Higher Education Policy and Management*, vol.25, no.1, United Kingdom.

This article reviews the literature on 'successful ageing' and the performance of older workers in general. Findings suggest that stereotypes remain of age-related decline in work performance, yet physical and cognitive changes associated with ageing are modifiable. The

study looked at keeping older academics in the workforce for longer, but lacks specific evidence for the review question, often basing extrapolation of more general research to the target group. It does not provide evidence of skill development activities for mature-aged leading to improved labour market outcomes. Population is ageing university academic staff and older workers in general (over 50).

86: Organisation for Economic Co-operation and Development 2000, *Reforms for an ageing society*, OECD, Paris.

This report gives an updated picture of ageing pressures in individual OECD countries, with emphasis on the potential effects of changes in retirement ages and of the state of reform in response to these pressures. It is based on a survey of OECD countries which reveals many recent reforms, often major ones.

This study addresses work retirement transition, and OECD country policies on work–retirement transition issues. It recognises there are *disadvantaged groups within the over 45s*, especially for men. While this study rated relatively high in quality, it was lacking evidence of skill development activities for the review.

Population is over 45 years and also includes some information on those over 65.

87: Rabzjin, R, Carson, E & Winefield, T 2002, *On the scrap-heap at 45: Report of mature-aged unemployment research 2000–2001*, Department of Education, Arts and Social Sciences, University of SA, Adelaide.

The study was concerned with mature-aged job seekers who need to find work, not mature-aged people for whom finding employment is not essential. The study was in two parts: six focus groups consisting of a total of 24 mature-aged unemployed people; and a questionnaire survey of 143 mature-aged job seekers (aged 45 years or more) and 42 human resource managers from a range of sizes and types of organisations.

This study includes barriers to mature-aged employment, and raises the issue of the employer perspective on mature-aged (what are they looking for?), but does not provide evidence for the review question. Population is mature-aged job-seekers (45+).

89: Brandsma, TF 1999, *The effectiveness of labour market oriented training for the long-term unemployed*, The European Commission, Brussels.

This research project, concerning the effectiveness of labour-market-oriented training for the long-term unemployed, focuses on the question of what works and does not work in training for this target group.

This study uses a mixed methodology of case studies and a survey. The study concludes that more training doesn't necessarily lead to better jobs, and that the lower the previous education, the greater the chance of getting a job post-training. It highlights the need to tailor training to maximise employment outcomes. The quality of the study did not rate highly. Population is long-term unemployed, under 50 years, average age 35 years.

Appendix E: Summary of evidence for key messages

Key message one

Through a systematic review of existing research, evidence has been found that skill development activities lead to improved labour market outcomes for some mature-aged people (in terms of higher employment rates or wages), especially for those who were unemployed, and for women.

Evidence source

Study 91 (Jenkins, Vignoles, Wolf & Galinda-Rueda 2002)

Time and location of study: 1991–2000; Great Britain

Quantitative research: analysis of the National Child Development Study (NCDS) longitudinal dataset

Population: cohort aged 42 years last surveyed at 33 years

Skill development activities: 'lifelong learning' defined as a formal qualification (academic or vocational) acquired

Outcomes: probability of being in the labour market and wage benefits (employment status—full-time compared with part-time)

Study 90 (Karmel & Woods 2004)

Time and location of study: 1978–2003; Australia

Quantitative research: analysis national data from ABS and NCVER and economic modelling

Population: 40 years to 64 years

Skill development activities: level of qualification level acquired

Outcomes: increased employment to population rates

Study 85 (Jacobson, La Ronde & Sullivan 2003)

Time and location of study: 1987–2000; Washington State, US

Quantitative research: analysis of state data of unemployment claims between 1990 and 1994; cost–benefit analysis

10 400 retrenched workers, half of whom were over 35 years of age p.56

Population: retrenched workers between ages of 22 and 60 years compared 35 years or older and younger workers; restricted to experienced workers in labour market for 14 years and three years or more in same job before being retrenched

Skill development activities: re-training in community colleges—up to two years p.60 but average 6–8 months (one year of study equates to 45 college credits)

Outcomes: wage increases—earnings per quarter

Gaining a qualification after the age of 33 years of age was associated with increases in probability of being in the labour market in 2000 at aged 42 years.

Those who were unemployed in 1991 who gained a qualification were more likely to be employed in 2000 i.e.

p.33 Undertaking lifelong learning was associated with increases in the probability of being in the labour market in 2000 for those who were out of the labour market in 1991. This result applies for both men and women.

p.33 All kinds of lifelong learning, academic, vocationally related and occupational, significantly raised the probability of women returning to the labour market in 2000, while occupational qualifications obtained between 1991 and 2000 increased the probability that men would return to the labour market.

p.2 Qualifications gained later in life have as good, and in some cases, better pay-off to employment-to-populations rates for older age groups as qualifications obtained at a younger age. This is particularly the case for women.

p.3 The effect of education on employment-to-population rates is more pronounced for women than men.

p.8 On the whole, for a given age, employment rates rise with increased education levels, compare year 9 or less secondary schooling to postgraduate degrees.

p.2 Older persons who have on-the-job training are more likely to retain their employment status relative to their employed peers not getting training ... however, one explanation of this is that employers invest in those they expect to retain as employees.

p.46 Estimate that one year of training in a community college raises the earnings of older males who were retrenched by 8% and older females' earnings by 10%.

p.46 Earning gains per quarter are higher for those who complete courses that had a quantitative or technical vocational focus i.e. 33% higher for older male workers and 100% higher for older female workers.

p.49 Net (private)[individual] benefits to training are substantial for all displaced workers who undertook training [although lower in the first few quarters but increase with time]; however, they are much higher for young workers (US\$3–5) than older workers (US\$2–3).

Figure 3, p.81 The earnings per quarter are significantly higher for retrenched workers who undertook training compared with those who did not when a number of personal, economic and training course effects are controlled for; but not evident when just average earnings are compared (figures 1 and 2, pp.79–80).

Key message one (cont.)

Study 68 (Blondal, Field & Girouard 2002)

Time and location: 1997–2001; OECD with major focus on Japan, USA,

Sweden, UK, Denmark, Canada, Italy, Germany, France and the Netherlands

Quantitative research : draws on the results of OECD surveys and various data sources of secondary education and training for economic analysis

Population: term 'older adult' is not defined

Skill development activities: formal education and training

Outcomes: only concerned with economic costs and benefits of formal education and training to enterprises (but not the costs and benefits to individuals)

Study 45 (Hill 2001)

Time and location: 1984; USA Longitudinal Survey of Labour Market Experience of Mature-aged Women—originated in interview 1967 ages 30 to 44 years

Quantitative research: data analysis of 3422 women

Population: pre-retirement women 47–61 years; 1882 or 55% of women reported their training method; a woman was included once for each month of training she reported; training methods reported by occupation

Skill development activities: training—on-the-job or formal classes

Outcomes: wage increases and labour market participation

Study 74 (Naegele 1999)

Time and location: Pre-1999; European Union countries mostly, especially Finland's 'active strategies' for ageing workforce.

Qualitative research: evaluation of integrated approaches at European Foundation conference report, so peer review of papers and presentations and group of expert opinion summarised into conclusions and recommendations

Population: term 'older worker' is not defined; includes policies for the whole workforce

Skill development activities: details not specified but assumed that all types of skill development activities are included

Outcomes: details not provided—refers to change in labour market participation, change of career, self-employment, re-entry to labour market, change in work attitude

p.35 Although it has proved difficult to isolate the impact of training on productivity, empirical studies provide some direct evidence that training activity has succeeded in raising productivity in the enterprises and sectors involved.
p.13 Educated workers are more likely to participate in the labour market, and their active working life is generally longer than that for those with lower educational attainment.

p.31, table 5 The table shows clearly that under prevailing policies private incentives to increase human capital diminish with age.

p.p.6, 7 Incentives to invest in formal education diminish at an increasingly rapid rate as a function of age under existing institutional arrangements. This reflects a shorter period to amortise investment costs as older adults remaining working life becomes shorter with age and because costs in terms of forgone earnings will tend to be higher as wages increase with experience.

p.181 This study finds that later training is associated with wage increases and greater labour force participation at older ages. Training may be more beneficial in this regard than education acquired later in life.

p.182 This study finds that on-the-job training appears to provide the greatest wage advantage.

p.182 Results show that women can improve their wages with training even at older ages. But to obtain on-the-job training, which raises wages the most, it appears necessary that women show employers that their training expenditure will pay off.

p.182 Women with early labour force attachment and additional work experience obtain more training at work. And both work experience and on-the-job training are associated with wage increases and labour force participation at older ages.

p.183 [of 3073 incidents] one-fourth of incidents reported were formal education; in about one-third, on-the-job training, while over two-fifths were 'other'.

p.183 The average number of training incidents appears to fall along with the skill level of the occupations.

p.183 In more highly skilled occupations, education and on-the-job training were typically used to train workers while workers in less-skilled occupations tended to acquire other training.

p.31 Conclusions and recommendations that emerged specifically from the discussions in the working group 'education and training of older workers', includes: The effect of chronological age on the impact of training is negligible. However, age discrimination is prevalent and therefore organisers of education and training for older workers need their awareness raised.

p.29 Research has shown that education and further training pay off, for both the (older) worker themselves and the companies.

Key message one (cont.)

Study 2 (Wooden, Vanden Heuvel, Cully & Curtain 2001)

Time and location: mid-1990s–2000; Australia

Quantitative research: data analysis of secondary data from national sources, and

Qualitative research: focus groups undertaken in 1999; three case studies of 'best practice' firms

Population: 45 years and over

Skill development activity: training undertaken in the last 12 months; in-house structured training; external training; on-the-job unstructured training and educational study; for those unemployed training was mostly at TAFE

p. 66 With the exception of persons still at school, it is the oldest cohorts of wage and salary earners who are least likely to receive training.

p.67 Mature-aged workers with the highest levels of qualifications have training participation similar to younger adults, and in the non-commercial sector there is no significant difference in training participation between older and younger workers.

p.67 Participation in training is low amongst the unemployed ... and, amongst those who are unemployed, participation in training does not vary with age.

[inferred from pp. 203–33 The case studies of 'lighthouse' workplaces demonstrate that it was the change in workplace culture that was both a cause and effect of skill development. It was the workplace culture—context and the suite of aligned changes in management and in the strategy—that was ultimately responsible for the benefits in productivity and worker engagement and workers enhanced skill, not any single program.]

Key message two

Evidence has been found that labour-market-related gains are greater for the mature-aged who complete higher-level qualifications. Gaining lower-level qualifications or incomplete qualifications may have a negative effect on labour-market-related gains for some older people.

Evidence source

Study 91 (Jenkins, Vignoles, Wolf & Galinda-Rueda 2002)

Time and location: 1991–2000; Great Britain

Quantitative research: analysis of the National Child Development Study (NCDS) longitudinal dataset

Population: cohort aged 42 years last surveyed at 33 years

Skill development activities: 'lifelong learning' defined as a formal qualification (academic or vocational) acquired

Outcomes: probability of being in the labour market and wage benefits (employment status—full-time compared with part-time)

Study 90 (Karmel & Woods 2004)

Time and location: 1978–2003; Australia

Quantitative research: analysis national data from ABS and NCVET and economic modelling

Population: 40 years to 64 years

Skill development activities: level of qualification level acquired

Outcomes: increased employment-to-population rates

Study 85 (Jacobson, La Ronde & Sullivan 2003)

Time and location of study: 1987–2000; Washington State, USA

Quantitative research: analysis of state data of unemployment claims between 1990 and 1994; cost–benefit analysis; econometric model

Population: retrained workers between ages of 22 and 60 years compared 35 years or older (half of sample of 10 400) and younger workers; restricted to experienced workers in labour market for 14 years and three years or more in same job before being retrained

Skill development activities: re-training in community colleges—up to two years but average 6–8 months (one year of study equates to 45 college credits)

Outcomes: wage increases—earnings per quarter

p.27 Gaining lower-level qualifications may have a negative effect on earnings for some men and women. For example, level 2 occupational (vocational) qualifications (for example, NVQ2) yield a negative wage premium of 11% for men and 6% for women.

p.32 Women earned a wage premium of nearly 10% for a degree or level 4 occupational qualifications (for example, NVQ4 nursing or teacher training).

p.34 For males, only higher degrees yielded a wage premium if taken as a mature student (Note however, these results were not robust in statistical terms).

p.8 On the whole, for a given age, employment rates rise with increased education levels, compare Year 9 or less secondary schooling to postgraduate degrees [i.e. the impact tends to occur for the higher-level qualifications, especially qualifications acquired that are higher than previous educational attainment. Note: the authors suggest for 'certificate III and above' but from the regression analysis it appears that this cut-off level is not robust].

p.2 On the whole, the more qualifications the better, although evidence on lower-level qualifications and incomplete qualifications improving employment rates is mixed.

p.26 Incomplete awards and lower-level awards do not necessarily make much difference to a group's employment rate

p.8 For men, possession of a certificate I or II is associated with lower employment rates relative to Year 12 only but from the regression analysis it appears that this cut off level is not robust.

p.46 Earning gains per quarter are higher for those who complete courses that had a quantitative or technical vocational focus i.e. 33% higher for older male workers and 100% higher for older female workers.

[The researchers identified two groups of training courses: those containing technical and trade subjects with a quantitative emphasis, and those that were more qualitative in nature, such as sales and services, social sciences and humanities and basic skills.]

Key message three

The specifics of what skill development activities work, when, and for which groups of mature-aged are sparse in this systematic review, as the included studies mostly focused on the level of 'qualification' acquired, or simply referred to 'training' as the skill development activity.

Evidence source

Study 2 (Wooden, Vanden Heuvel, Cully & Curtain 2001)

Time and location: mid-1990s–2000; Australia

Quantitative research: data analysis of secondary data from national sources, and

Qualitative research: focus groups undertaken in 1999; three case studies of 'best practice' firms

Population: 45 years and over

Skill development activity: Training undertaken in the last 12 months; in-house structured training; external training; on-the-job unstructured training and educational study; for those unemployed training was mostly at TAFE

The three case studies imply that there has been a profound turn-around in the workplace cultures (including productivity, for example, that the workers are more engaged, better skilled and more cooperative with co-workers and management), [inferred from pp.203–33 The case studies of 'lighthouse' workplaces demonstrate that it was the change in workplace culture that was both a cause and effect of skill development. It was the workplace culture—context and the suite of aligned changes in management and in the strategy—that was ultimately responsible for the benefits in productivity and worker engagement and workers enhanced skill, not any single program.]

p.243 Finally it is worth highlighting how older people's attitudes to perceived value of training may vary according to the type of training required. Building on outcomes from the qualitative research, three broad categories of training can be identified:

- i. occupational or technical training
- ii. mandatory training associated with health and safety requirements and similar duty of care' responsibilities
- iii. the so-called 'soft skills' of team work, problem solving and communication

p.299 The case studies also illustrate how soft skills can only be acquired and applied in the context of the workplace. On-the-job learning is essential aspect of how these skills are acquired; suggesting that that training in the new soft skills can only be successfully delivered in a specific workplace context. ... The particular focus of the enterprise (its market niche) is often a crucial ingredient for defining what soft skills are required and how they should be exercised. This has implications for working out how best to enable unemployed older persons to acquire soft skills.

Study 74 (Naegele 1999)

Time and location: pre-1999; European Union countries mostly—especially Finland's 'active strategies' for ageing workforce.

Qualitative research: evaluation of integrated approaches at European Foundation conference report, so peer review of papers and presentations and group of expert opinion summarised into conclusions and recommendations

Population: term 'older worker' is not defined; includes policies for the whole workforce.

Skill development activities: details not specified but assumed that all types of skill development activities are included

Outcomes: details not provided—refers to change in labour market participation, change of career, self-employment, re-entry to labour market, change in work attitude

p.31 Conclusions and recommendations that emerged specifically from the discussions in the working group 'education and training of older workers', include: The effect of chronological age on the impact of training is negligible. However, age discrimination is prevalent and therefore organisers of education and training for older workers need their awareness raised. In future, the growing adult training market needs to be developed in a way that is meaningful to people of all ages. All the different partners need to be involved but public policy has to play a key role in facilitating the integration of the different partners.

p.39 The need to rethink early exit policies is urgent, both to ensure more opportunities for older workers, and also to safeguard the welfare of those at high risk of exclusion from employment.

p.40 Active policy approaches should be preventive, avoiding age-specific employment problems by combating risks in earlier phases of the working life.

pp.40–41 Many older workers today have experienced disadvantages ... A 'dual approach' should be adopted, improving employability over all of working life but also addressing specific risks or problems of some older workers.

p.19 More specific measures, including opportunities for self-employment, are both necessary and effective in improving prospects of unemployed older workers.

pp.24 and 41 Systematic coordination of measures is required but also achievable at both enterprise and public policy levels. A close coordination of public and workplace policies is warranted. There is a need to link enterprise initiatives with the use of local community services such as social security, education and health care.

p.41 Effective measures depend upon worker involvement from the start, not only as 'experts in their own matters', but also in realising integrated actions at the workplace level.

Key message four

Three main factors emerged as barriers (and also provide ideas on facilitators) to skills development of the mature-aged, leading to improved attachment to the labour market or improved productivity. They are:

- ✧ attitudes and behaviours of employers, employees and older workers towards older people working and to learning new skills and knowledge
- ✧ the individual's personal circumstances and attitude to learning
- ✧ public policy beyond vocational education and training, such as some aspects of superannuation and retirement income policies.

Evidence source

Study 2 (Wooden, Vanden Heuvel, Cully & Curtain 2001)

Time and location: mid-1990s–2000; Australia

Quantitative research: data analysis of secondary data from national sources, and

Qualitative research: focus groups undertaken in 1999, three case studies of 'best practice' firms.

Population: 45 years and over

Skill development activity: training undertaken in the last 12 months; in-house structured training; external training; on-the-job unstructured training and educational study; for those unemployed training was mostly at TAFE

The study nominates seven barriers to training for older workers:

1. *being unemployed*: focus groups with the long-term unemployed offered consistent evidence that training was seen as only worthwhile if it was part of paid work (p.240):
 - ✧ many focus group participants noted that additional training had not made them more attractive to employers (p.249)
 - ✧ training is not likely to be seen by the older unemployed as a worthwhile activity unless it is provided in the context of a paid job (p.240).
 2. *impaired learning capability*: the literature review suggested that research on training performance did show that older workers typically take longer to learn new skills and typically benefit less from the training process ... but we do not know how important the effect is and note that it might be quite small ... (p.240).
 3. *prior education*: participation in training is strongly associated with education attainment. The current older age cohorts have notably lower levels of education attainment than younger cohorts ... however, as the second oldest cohort (45 to 54 years) becomes the oldest, the overall level of participation in training for older workers is likely to improve (p.241).
 4. *limited time to recoup investment in training*: was seen as a barrier by both employers and employees (p.244); this is compounded by current uncertainties as to the age when people will choose to retire (p.241).
 5. *employer discrimination*: it is a definite barrier to both the training and employment of older persons but its sources are not well understood (for example, is it because soft-skills such as flexibility, enthusiasm and responsiveness are thought to be characteristics of younger rather than older people? or presumptions about learning capability etc.?) and neither is its extent (p.242)
 6. *self-discrimination*: attributed to some older workers and many older unemployed persons (p.242). Some employed workers reported a self-imposed barrier due to fear of moving outside their comfort zone (p.172).
 7. *nature of the training*: older people' attitudes to the perceived value of training may vary according to the type of training required. Building on the outcomes from the qualitative research, three broad categories of training can be identified: (i) occupational or technical training; (ii) mandatory training associated with health and safety requirements and similar 'duty of care' responsibilities; and (iii) the so-called 'soft skills' of team work, problem solving, and communication (p.243).
- A further barrier to training noted was the discriminatory attitude of younger workers (p.172).
- The 'other' facilitators of training noted:
- ✧ the unemployed supported traineeship-type arrangement to overcome the lack of a link between training and employment (p.173)
 - ✧ lessening of the financial incentives to early retirement could encourage take up of training because the time to recoup investment becomes longer.
- With respect to existing skills: although learning capability is likely to vary more widely among older persons, this can be addressed by more flexible training provision (p.246).

Key message four (cont.)

Study 74 (Naegele 1999)

Time and location: pre-1999; European Union countries mostly—especially Finland's 'active strategies' for ageing workforce

Qualitative research: evaluation of integrated approaches at European Foundation Conference report so peer review of papers and presentations and group of expert opinion summarised into conclusions and recommendations

Population: term 'older worker' is not defined; includes policies for the whole workforce

Skill development activities: details not specified but assumed that all types of skill development activities are included

Outcomes: details not provided—refers to change in labour market participation, change of career, self-employment, re-entry to labour market, change in work attitude

Study 17 (Feinstein, Galindo-Rueda & Vignoles 2003)

Time and location: 1991–2000; Great Britain

Quantitative research: analysis of secondary data from national, longitudinal survey where participants interviewed at 41–42 years but training occurred between 33–42 years

Population: sample of 2191 male workers; constituting 1038 with some work-related training and 1153 no work related training; 43.7% undertook work-related training lasting more than 3 days between 1991 and 2000

Skill development activities: work-related training provided by the employer that lasted for 3 days or more

Outcomes: wage growth over period 33–42 years; analysis necessarily focuses on males

p. 31 Measures and solutions must be targeted toward the individual worker, the enterprise and the society. All three parties need to participate wholeheartedly for positive results. Enterprises and work organisations make up the most critical party because the goal is to employ ageing people. The task of society is to create good conditions for the employment of ageing workers. The workers, as individuals, must also take responsibility.

p. 15 While formal qualifications taken in adulthood do not necessarily generate higher wages for workers, work-related training, which is generally provided by or at least organised by firms, does give a clear wage gain.

p. 15 However ... workers who are selected to receive training are not representative of all workers ... Firms appear to 'cherry pick' workers, identifying those most likely to gain from training.

Key message four (cont.)

Study 57 (Taylor & Urwin 2001)

Time and location: 1997; United Kingdom, national labour force survey

Quantitative research; analysis of secondary data N=55 085 (females 27 055, males=28 030)

Population: covers 50–59 and 59–64 years and compares to the following younger age groups; 16–64; 25–39; and 40–49

Skill development activities: received employer provided training in the last 13 weeks; or offered training by employer but not trained in the last 13 weeks; employee never offered training by employer

Outcomes: relative importance of individual preferences and employer decision-making in determining the propensity of older workers to undertake training

p.173 ... our analysis supports the work of other researchers in this area and we conclude that the incidence of training is to a large extent a result of employer decision-making.

p.777 ... older workers are much less likely to participate in employer provided training than younger workers.

p.776 Part-time and temporary (casual) workers are less likely to receive training.

p.776 Workers in high-skill occupations are more likely to be receiving training than workers in low-skill occupations, particularly women.

p.776 Individuals with higher levels of education undertake or are offered more training than unqualified individuals.

Key message five

Through this systematic review, the need for further research was revealed, especially to identify which skill development activities work, when, and for which groups of mature-aged. Evidence from such research would complement the large-scale data analyses already undertaken which have yielded the above results. It may also offer supporting evidence to promote lifelong education and training.

Evidence source

Study 91 (Jenkins, Vignoles, Wolf & Galinda-Rueda 2002)

Research on returns on investment (ROI) in education and training is needed:

p.13 Research on economic returns to lifelong learning has only begin to be undertaken in the last few years, and there is still a real shortage of work in this fields. For the UK, such studies as exist concentrate on the returns obtained by mature graduates ...

Whether mature graduates gain sufficiently to make learning a worthwhile investment remains undecided [maybe not if returns are measured solely in income terms]. There is an absence of work on the returns to other kinds of qualification for adult learners in the British economy, and on learning that may not result in a qualification.

Research on motivation for further education and training:

p.24 Certainly further work is needed to try and explain the motivation behind individuals' decisions to undertake lifelong learning.

Study 74 (Naegele 1999)

Research into transferability of findings from other countries and age groups is needed:

p.22 There is a need to reflect within evaluation on the transferability of initiatives to different cultural contexts and different target groups. Evaluations tend to examine true success and failure factors within the context of the specific initiative or measure alone. Whether similar success rates can be achieved elsewhere has to be examined carefully.

Research is needed to better understand which policies and practices need to be changed because they may discourage older workers from pursuing further training and a longer stay in the workforce:

pp.24 and 41 Systematic coordination of measures is required but also achievable at both enterprise and public policy levels. A close coordination of public and workplace policies is warranted. There is a need to link enterprise initiatives with the use of local community services such as social security, education and health care.

p.31 Measures and solutions must be targeted toward the individual worker, the enterprise and the society. All three parties need to participate wholeheartedly for positive results. Enterprises and work organisations make up the most critical party because the goal is to employ ageing people. The task of society is to create good conditions for the employment of ageing workers. The workers, as individuals, must also take responsibility.

Many older Australians are up-skilling or retraining to maintain gainful employment or pursue other interests. This study, a systematic review of existing research, set out to find evidence that skill development activities for the mature-aged lead to improved employment opportunities and improved productivity. It also looks at what factors act as barriers or facilitators to these key outcomes, and the implications of this review for vocational education and training policy, practice and research.

NCVER is an independent body responsible for collecting, managing, analysing, evaluating and communicating research and statistics about vocational education and training.

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