

**DEPARTMENT OF EDUCATION,
TRAINING AND YOUTH AFFAIRS**

16-18 Mort Street,
GPO Box 9880
Canberra Act 2601
Tel: (02) 6240 8111

I refer to the public hearing on 12 August 1999 at which a number of DETYA officers attended to answer questions by the Committee.

At that hearing the Committee requested further information on one of the DETYA initiatives -the consultancy project "Barriers to Training for Older Persons and Possible Policy Solutions". This is one of the departmental initiatives in support of the International Year of Older Persons (IYOP). The Committee requested a summary of a literature review carried out as part of the project. The summary is factual, not interpretative and is now forwarded for consideration by the Committee.

If you have any queries about this matter please contact Ms Dianne Peacock on 6240 8819.

Yours sincerely

Eileen Newmarch
A/g Assistant Secretary
Analysis and Equity Branch
13 December 1999

BARRIERS TO TRAINING FACING OLDER WORKERS

DETYA SUMMARY OF NILS LITERATURE REVIEW

Introduction

1. Along with other industrialised nations, Australia considers the creation of a highly skilled workforce essential to improving productivity and international competitiveness. In recent years the recognition of this need has led to a renewed focus on education and training.

2. Yet research indicates that training is not gained by all groups of workers on an equal basis. Training incidence varies according to various characteristics of workers, with one of these being the age of the worker. It is widely recognised that older workers are less likely to gain access to training than are their younger counterparts.

3. This raises equity and demographical issues. There is increasing concern that the economically active may not be able to support the growing numbers of older/ageing people in Australia. So it is highly desirable that older workers delay their exit from the workforce. Keeping their employment prospects at optimal levels means providing them with training opportunities. This is especially true given the changing nature of work ie. the rapid advance in technologies and the increasing emphasis on interpersonal skills.

4. The NILS consultancy literature review gathers together information from various disciplines (including labour economics, sociology, psychology, organisational behaviour, education and gerontology) to discuss three main issues:

1. the relationship between age and participation in training;
2. barriers to training for older workers; and
3. factors that enhance the access of older workers to training.

Below is a detailed discussion of each of these three main issues.

(1) The relationship between age and participation in training

Conclusions

5. Conclusions suggested by the research are:
- older workers are typically less likely to receive and participate in training;
 - the relationship between age and training varies with the type of training being considered;
 - the age training profiles differ between male and female workers;
 - there is evidence from the UK to suggest that the relative position of older workers may be improving over time, and such findings are consistent with the descriptive evidence available from the Australian surveys of training and education experience.

Discussion

6. Training is offered to workers when the costs of that training are lower than the expected long-term benefits accruing to the employer. Likewise, employees participate in those training activities they believe will be advantageous to them. In regard to the expected effectiveness of the training, older persons are considered less attractive

training propositions for employers. Thus it is possible that older workers are disadvantaged as a result of age-based discrimination. Conversely it can be argued that younger workers have a higher quit rate and that older workers exhibit greater employment stability, which would advantage older workers in terms of access to training.

7. While a fair number of studies have focussed specifically on access to training among younger workers, this is not the case for older workers. So less information is available on the participation patterns of older workers in training, especially when considering data on ageing and training. Nevertheless there are two valuable sources of information - the International Adult Literacy Survey (IALS) and three ABS surveys of training and education experience (1989, 1993 and 1997).

8. *The ABS Surveys:* The likelihood of receiving on-the-job training over a one-year period is much lower among older adults, compared with young adults. In the case of in-house and external training it is only the oldest cohort - aged 55-64 years - who appear to be at a sizeable disadvantage. Participation rates among 45 to 54 year olds are not substantially different from younger cohorts. Further, comparisons across three surveys suggest that the comparative position of older workers has improved over time.

9. *The International Adult Literacy Survey* - Findings of the International Adult Literacy Survey (IALS) in 1994 to 1995 in 11 countries, including Australia, reveal that Australia ranks slightly above average (38.1) in terms of the incidence of job-related training participation of employed persons. This compares with the ten-country mean of 34.4 per cent, with Australia ranking above Belgium, Canada, Ireland, the Netherlands, Poland and Switzerland, but below New Zealand, the UK and the US. Overall, such findings would appear to contradict the widely held view that Australia under-invests in training. That said, if the UK represents best practice (with 51.9% of all employed adults receiving training) then Australia is still a long way from best practice. There are also good reasons to believe that some of the countries not represented such as Japan and Germany, may have even higher rates of participation in training. However, for Australia, the Netherlands and the UK, inequality in training incidence between mid-career workers and older workers is greatest.

10. IALS data also suggest that time spent in training declines with age. This pattern holds for all but two of the countries considered (Belgium and Ireland).

11. *Type of training is important in age/training relationship* - Research also suggests that the relationship between age and training incidence is very dependent on the type of training under consideration. Overall, the evidence suggests that older workers are at a disadvantage in accessing formal structured types of training in the workplace. The provision of formal structured training is more costly, representing a greater investment and hence employers are more selective in who they offer this training to.

12. *Older workers are the most disadvantaged* - Evidence also exists that training incidence also varies within the group of 45 to 64 year olds. The oldest workers are especially disadvantaged. In Australia, for example, almost one-third (32.5%) of 45 to 54 year olds in the labour force had participated in job-related training, compared with 25% of 55 to 64 year olds.

13. *Disadvantage is gender-biased* - Gender makes a difference in the age and training relationship, with the decline in employer-funded training incidence steeper for

men as they age than for women. Overall most of the research suggests the conclusion that the relationship between age and training incidence is strongest among men.

14. However, for both genders the oldest workers (55-64 years of age) were least likely to have obtained training.

15. *Other variables in the age/training relationship* - Apart from gender, other variables that are known to be associated with training incidence and which also are thought to be related to age include:

- education,
- hours of work and employment status,
- experience and job tenure,
- firm size,
- occupation and
- industry.

16. *Levels of education* - Older workers with higher levels of educational attainment are more likely to get training than those with lower levels of educational attainment. Education is a signal that an individual possesses an aptitude for learning, thus making training more cost effective. Thus, the lower than average levels of formal education among older persons may provide at least part of the explanation for the lower incidence of training among older workers.

17. *Hours of work and employment status* - Hours of work and employment status are also important for the age training relationship. The incidence of formal training among full-time permanent workers was lowest for both the youngest and oldest members of the workforce. In contrast, among casual workers the type of training varied relatively little with age. Experience and tenure are additional variables that almost certainly intervene between the age-training incidence relationship.

18. *Size of firm and profession* - Research has shown that older workers are not treated any differently in large or smaller firms in terms of access to training. Those in more advanced occupations - managers, professionals and associated professionals - have an increased probability of participating in training. Contrary to other variables, the over-representation of older workers in both large firms and skilled professions thus works in favour of their accessing training.

19. Overall there are a large number of reasons that could explain why older workers are disadvantaged in the training process. In other words, rather than a function of age per se, the disadvantage older workers experience may simply reflect other characteristics. Unfortunately no empirical studies have attempted to quantify the relative importance of differences in the characteristics of older and younger workers from the influence of discriminatory behaviour by employers.

(2) Barriers to Training for older workers

Conclusions

20. The weight of evidence suggests that training performance is adversely affected by an ageing effect. Less clear is the cause, and importance of this effect. Its magnitude is moderated by a number of other intervening variables including pre-existing skills, the type of learning activity and the context in which the training is delivered. Further it has not been clearly established at what age this learning effect becomes noticeable, although there is some evidence that it is rarely apparent before the age of 60 years. The bottom-line is that in many settings and contexts, the additional cost of training an older worker compared with a younger worker may be very small.

Discussion

21. *Age-based stereotypes* - Arguably the first obstacle that older workers have to overcome in obtaining work-related training are the biases inherent in the stereotyped views that many managers (and indeed the broader community) hold about the productive potential of older workers.

22. The existence of age-based stereotypes amongst employers is confirmed by experimental studies and shows that stereotypes can influence management decisions. Older workers were seen as:

- more resistant to change;
- less creative;
- more cautious;
- less physically capable;
- more disinterested in technological change;
- less suitable for training - particularly for new technological skills.

23. However, the evidence in the research also points to more mixed attitudes on the part of employers, and it could equally be argued that employers see older workers in a more positive light. Older workers are, conversely, seen as:

- having better developed skills;
- more stable and reliable/loyal
- understanding and complying with management directives.

24. *Age and job performance* - Of course, whether or not employers hold to stereotypes, more important is whether such views are accurate, and in many cases it is clear that they are not. The most obvious example here is the often-assumed inverse relationship between age and work performance. This relationship has been the subject of a vast amount of research, with reviews of this research all reaching the same conclusion: existing evidence is not able to demonstrate a consistently strong relationship between age and job performance.

25. This is not to say that performance cannot decline with age under certain conditions and in certain settings. The type of work undertaken is an important factor. Various studies have suggested that it is the complexity of the job that is the key factor, with the greater challenge and skill development intrinsic to more complex jobs leading to better job performance. There is a positive correlation between age and performance in jobs, which are not too demanding of 'basic capacities' (such as speed of information processing and effectiveness of sensory mechanisms) and where performance benefits from experience. This would include jobs that are largely knowledge-based and do not

involve substantial time pressures. At the other extreme, work performance is predicted to decline with age in jobs which assign a large weight to basic capacities and where experience is of little help.

26. Older workers may in fact benefit more from training which builds on existing concepts, skills and knowledge than younger workers who don't have the same level of accumulated experience. Put more simply, younger workers may be in a better training position than older workers where the training involves new or novel activities, but not where the training involves familiar activities.

27. One further variable, which may be important in moderating the relationship between age and training performance, is the way training is provided. Some researchers have argued that training method is crucial in influencing the effectiveness of training for older learners, and that many of the learning difficulties often ascribed to ageing are due in part to the use of training methods that are not suited to older workers.

28. *Worker attitudes* - Numerous writers have pointed to the possibility that older workers may be reluctant to participate in training programs, perhaps because they do not feel confident about the likelihood of their succeeding in a training program, fear that they will be unable to compete with younger and possibly better educated trainees, or simply because they are unfamiliar with training environments. Finally recent Australian research confirms that, since experience and skills accumulate with age, older workers believe that there is less need for them to undertake training.

29. *Exposure to new technology* - Older workers are far less confident about their ability to learn, especially when exposure to new technology is involved. It follows that any initiative that can reduce pre-training anxiety among older workers will result in an improvement in training performance. Many studies have found that the fears of employees generally subside following sustained exposure to the new technology and increased familiarity with the new learning environment.

30. *Training participation and retirement plans* - If older workers perceive little benefit from training due to retirement plans, then it seems unlikely that any organisational initiatives will alter such views for those workers who see themselves as nearing the end of their working careers.

(3) Factors that enhance the access of older workers to training

Conclusions

31. There are no definitive conclusions regarding the efficacy of special teaching/training methods for older adults.

Discussion

32. There is a paucity of information concerning actual initiatives in the private sector aimed at encouraging access to training by older workers. Conversely, government policy initiatives are relatively well-documented and diverse, with the most innovative initiatives to be found in the UK.

Discussion

33. *Training methods* - What strategies and actions can be taken to improve the training outcomes for older persons? Are there training methods that enhance the learning ability of older workers? And, is the learning ability of older persons improved to a greater degree than that of other learners via the use of these methods?

34. Belbin, Belbin et al, have developed seminal work in these areas in the 1960 and 1970s. These researchers are credited with the development of a number of training methods - namely the discovery method, activity learning and programmed instruction - that were aimed at improving the learning performance of the older trainee. However some researchers argue that these methods improve outcomes for all learners, whether young and older, and the weight of the evidence suggests that this is so.

35. Another body of literature relevant to the learning of older persons is that centred on the broader area of adult education, and specifically the andragogical theory which argues that the theory of teaching adults is qualitatively different from that of teaching younger persons and thus special methods are required to teach adults. However, whether or not teaching adults is different from that of teaching children remains ambiguous. Other adult education specialists argue that adult education is essentially the same process as education generally and that special theoretical developments are not required. The major shortcoming in resolving this debate is that underlying theories have not been tested through research.

36. *Organisational/public policy initiatives* - Most of the literature involves statements by human resource practitioners on what organisations should do to assist older workers in accessing training opportunities. For example:

- organisations should develop a culture that encourages learning and performance for all employees;
- training should be given to managerial staff on the ageing process;
- career-planning programs can boost commitment and productivity amongst older workers.

37. In spite of this encouragement the literature failed to produce a large range of actual initiatives taken by firms or details on how common these programs are. Little attempt has been made to document best practice or evaluate the effectiveness of those programs that do exist.

38. Relatively more effort has been spent in documenting national policy approaches to training for older persons. It is well recognised that governments can have a significant impact on the training of older persons. The OECD has called for a strategic approach to policy formulation that cuts across areas of responsibility of government departments and has also enunciated seven principles to guide policy development.

39. It is possible to categorise the approach of governments in terms of their relative emphasis on the importance of regulatory requirements, with options ranging from the more to the less regulated.

40. One approach, common in continental Europe is for central government to use local employer/industry associations (based on compulsory membership) to self regulate their members (Germany and France).

41. A second approach is for the central government to directly initiate programs requiring enterprises to fund these activities through levies (Singapore, Korea and Taiwan).

42. Governments in the UK, US, Canada and Australia operate within a less regulated framework. It is important to note that these governments differ in the extent to which they have established appropriate frameworks to encourage enterprises to improve their human resource management.

43. The authors suggest that the comprehensive set of policies and programs planned or being implemented in the UK may offer Australia the best source of new ideas on innovative policy, but the initiatives need to be evaluated in terms of efficacy for older workers. These initiatives include:

- incentives to encourage individuals to take more responsibility for funding their own training;
- provision of guides to enterprises on how best to meet the training needs of all their employees, including older workers;
- provision of government assistance to unemployed older workers through the extension of a mutual obligation program to cover persons aged 50 or over.

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3. This raises equity and demographical issues. There is increasing concern that the economically active may not be able to support the growing numbers of older/ageing people in Australia. So it is highly desirable that older workers delay their exit from the workforce. Keeping their employment prospects at optimal levels means providing them with training opportunities. This is especially true given the changing nature of work ie. the rapid advance in technologies and the increasing emphasis on interpersonal skills.

4. The NILS consultancy literature review gathers together information from various disciplines (including labour economics, sociology, psychology, organisational behaviour, education and gerontology) to discuss three main issues:

1. the relationship between age and participation in training;
2. barriers to training for older workers; and
3. factors that enhance the access of older workers to training.

Below is a detailed discussion of each of these three main issues.

(1) The relationship between age and participation in training

Conclusions

5. Conclusions suggested by the research are:
- older workers are typically less likely to receive and participate in training;
 - the relationship between age and training varies with the type of training being considered;
 - the age training profiles differ between male and female workers;
 - there is evidence from the UK to suggest that the relative position of older workers may be improving over time, and such findings are consistent with the descriptive evidence available from the Australian surveys of training and education experience.

Discussion

6. Training is offered to workers when the costs of that training are lower than the expected long-term benefits accruing to the employer. Likewise, employees participate in those training activities they believe will be advantageous to them. In regard to the expected effectiveness of the training, older persons are considered less attractive

training propositions for employers. Thus it is possible that older workers are disadvantaged as a result of age-based discrimination. Conversely it can be argued that younger workers have a higher quit rate and that older workers exhibit greater employment stability, which would advantage older workers in terms of access to training.

7. While a fair number of studies have focussed specifically on access to training among younger workers, this is not the case for older workers. So less information is available on the participation patterns of older workers in training, especially when considering data on ageing and training. Nevertheless there are two valuable sources of information - the International Adult Literacy Survey (IALS) and three ABS surveys of training and education experience (1989, 1993 and 1997).

8. *The ABS Surveys:* The likelihood of receiving on-the-job training over a one-year period is much lower among older adults, compared with young adults. In the case of in-house and external training it is only the oldest cohort - aged 55-64 years - who appear to be at a sizeable disadvantage. Participation rates among 45 to 54 year olds are not substantially different from younger cohorts. Further, comparisons across three surveys suggest that the comparative position of older workers has improved over time.

9. *The International Adult Literacy Survey* - Findings of the International Adult Literacy Survey (IALS) in 1994 to 1995 in 11 countries, including Australia, reveal that Australia ranks slightly above average (38.1) in terms of the incidence of job-related training participation of employed persons. This compares with the ten-country mean of 34.4 per cent, with Australia ranking above Belgium, Canada, Ireland, the Netherlands, Poland and Switzerland, but below New Zealand, the UK and the US. Overall, such findings would appear to contradict the widely held view that Australia under-invests in training. That said, if the UK represents best practice (with 51.9% of all employed adults receiving training) then Australia is still a long way from best practice. There are also good reasons to believe that some of the countries not represented such as Japan and Germany, may have even higher rates of participation in training. However, for Australia, the Netherlands and the UK, inequality in training incidence between mid-career workers and older workers is greatest.

10. IALS data also suggest that time spent in training declines with age. This pattern holds for all but two of the countries considered (Belgium and Ireland).

11. *Type of training is important in age/training relationship* - Research also suggests that the relationship between age and training incidence is very dependent on the type of training under consideration. Overall, the evidence suggests that older workers are at a disadvantage in accessing formal structured types of training in the workplace. The provision of formal structured training is more costly, representing a greater investment and hence employers are more selective in who they offer this training to.

12. *Older workers are the most disadvantaged* - Evidence also exists that training incidence also varies within the group of 45 to 64 year olds. The oldest workers are especially disadvantaged. In Australia, for example, almost one-third (32.5%) of 45 to 54 year olds in the labour force had participated in job-related training, compared with 25% of 55 to 64 year olds.

13. *Disadvantage is gender-biased* - Gender makes a difference in the age and training relationship, with the decline in employer-funded training incidence steeper for

men as they age than for women. Overall most of the research suggests the conclusion that the relationship between age and training incidence is strongest among men.

14. However, for both genders the oldest workers (55-64 years of age) were least likely to have obtained training.

15. *Other variables in the age/training relationship* - Apart from gender, other variables that are known to be associated with training incidence and which also are thought to be related to age include:

- education,
- hours of work and employment status,
- experience and job tenure,
- firm size,
- occupation and
- industry.

16. *Levels of education* - Older workers with higher levels of educational attainment are more likely to get training than those with lower levels of educational attainment. Education is a signal that an individual possesses an aptitude for learning, thus making training more cost effective. Thus, the lower than average levels of formal education among older persons may provide at least part of the explanation for the lower incidence of training among older workers.

17. *Hours of work and employment status* - Hours of work and employment status are also important for the age training relationship. The incidence of formal training among full-time permanent workers was lowest for both the youngest and oldest members of the workforce. In contrast, among casual workers the type of training varied relatively little with age. Experience and tenure are additional variables that almost certainly intervene between the age-training incidence relationship.

18. *Size of firm and profession* - Research has shown that older workers are not treated any differently in large or smaller firms in terms of access to training. Those in more advanced occupations - managers, professionals and associated professionals - have an increased probability of participating in training. Contrary to other variables, the over-representation of older workers in both large firms and skilled professions thus works in favour of their accessing training.

19. Overall there are a large number of reasons that could explain why older workers are disadvantaged in the training process. In other words, rather than a function of age per se, the disadvantage older workers experience may simply reflect other characteristics. Unfortunately no empirical studies have attempted to quantify the relative importance of differences in the characteristics of older and younger workers from the influence of discriminatory behaviour by employers.

(2) Barriers to Training for older workers

Conclusions

20. The weight of evidence suggests that training performance is adversely affected by an ageing effect. Less clear is the cause, and importance of this effect. Its magnitude is moderated by a number of other intervening variables including pre-existing skills, the type of learning activity and the context in which the training is delivered. Further it has not been clearly established at what age this learning effect becomes noticeable, although there is some evidence that it is rarely apparent before the age of 60 years. The bottom-line is that in many settings and contexts, the additional cost of training an older worker compared with a younger worker may be very small.

Discussion

21. *Age-based stereotypes* - Arguably the first obstacle that older workers have to overcome in obtaining work-related training are the biases inherent in the stereotyped views that many managers (and indeed the broader community) hold about the productive potential of older workers.

22. The existence of age-based stereotypes amongst employers is confirmed by experimental studies and shows that stereotypes can influence management decisions. Older workers were seen as:

- more resistant to change;
- less creative;
- more cautious;
- less physically capable;
- more disinterested in technological change;
- less suitable for training - particularly for new technological skills.

23. However, the evidence in the research also points to more mixed attitudes on the part of employers, and it could equally be argued that employers see older workers in a more positive light. Older workers are, conversely, seen as:

- having better developed skills;
- more stable and reliable/loyal
- understanding and complying with management directives.

24. *Age and job performance* - Of course, whether or not employers hold to stereotypes, more important is whether such views are accurate, and in many cases it is clear that they are not. The most obvious example here is the often-assumed inverse relationship between age and work performance. This relationship has been the subject of a vast amount of research, with reviews of this research all reaching the same conclusion: existing evidence is not able to demonstrate a consistently strong relationship between age and job performance.

25. This is not to say that performance cannot decline with age under certain conditions and in certain settings. The type of work undertaken is an important factor. Various studies have suggested that it is the complexity of the job that is the key factor, with the greater challenge and skill development intrinsic to more complex jobs leading to better job performance. There is a positive correlation between age and performance in jobs, which are not too demanding of 'basic capacities' (such as speed of information processing and effectiveness of sensory mechanisms) and where performance benefits from experience. This would include jobs that are largely knowledge-based and do not

involve substantial time pressures. At the other extreme, work performance is predicted to decline with age in jobs which assign a large weight to basic capacities and where experience is of little help.

26. Older workers may in fact benefit more from training which builds on existing concepts, skills and knowledge than younger workers who don't have the same level of accumulated experience. Put more simply, younger workers may be in a better training position than older workers where the training involves new or novel activities, but not where the training involves familiar activities.

27. One further variable, which may be important in moderating the relationship between age and training performance, is the way training is provided. Some researchers have argued that training method is crucial in influencing the effectiveness of training for older learners, and that many of the learning difficulties often ascribed to ageing are due in part to the use of training methods that are not suited to older workers.

28. *Worker attitudes* - Numerous writers have pointed to the possibility that older workers may be reluctant to participate in training programs, perhaps because they do not feel confident about the likelihood of their succeeding in a training program, fear that they will be unable to compete with younger and possibly better educated trainees, or simply because they are unfamiliar with training environments. Finally recent Australian research confirms that, since experience and skills accumulate with age, older workers believe that there is less need for them to undertake training.

29. *Exposure to new technology* - Older workers are far less confident about their ability to learn, especially when exposure to new technology is involved. It follows that any initiative that can reduce pre-training anxiety among older workers will result in an improvement in training performance. Many studies have found that the fears of employees generally subside following sustained exposure to the new technology and increased familiarity with the new learning environment.

30. *Training participation and retirement plans* - If older workers perceive little benefit from training due to retirement plans, then it seems unlikely that any organisational initiatives will alter such views for those workers who see themselves as nearing the end of their working careers.

(3) Factors that enhance the access of older workers to training

Conclusions

31. There are no definitive conclusions regarding the efficacy of special teaching/training methods for older adults.

Discussion

32. There is a paucity of information concerning actual initiatives in the private sector aimed at encouraging access to training by older workers. Conversely, government policy initiatives are relatively well-documented and diverse, with the most innovative initiatives to be found in the UK.

Discussion

33. *Training methods* - What strategies and actions can be taken to improve the training outcomes for older persons? Are there training methods that enhance the learning ability of older workers? And, is the learning ability of older persons improved to a greater degree than that of other learners via the use of these methods?

34. Belbin, Belbin et al, have developed seminal work in these areas in the 1960 and 1970s. These researchers are credited with the development of a number of training methods - namely the discovery method, activity learning and programmed instruction - that were aimed at improving the learning performance of the older trainee. However some researchers argue that these methods improve outcomes for all learners, whether young and older, and the weight of the evidence suggests that this is so.

35. Another body of literature relevant to the learning of older persons is that centred on the broader area of adult education, and specifically the andragogical theory which argues that the theory of teaching adults is qualitatively different from that of teaching younger persons and thus special methods are required to teach adults. However, whether or not teaching adults is different from that of teaching children remains ambiguous. Other adult education specialists argue that adult education is essentially the same process as education generally and that special theoretical developments are not required. The major shortcoming in resolving this debate is that underlying theories have not been tested through research.

36. *Organisational/public policy initiatives* - Most of the literature involves statements by human resource practitioners on what organisations should do to assist older workers in accessing training opportunities. For example:

- organisations should develop a culture that encourages learning and performance for all employees;
- training should be given to managerial staff on the ageing process;
- career-planning programs can boost commitment and productivity amongst older workers.

37. In spite of this encouragement the literature failed to produce a large range of actual initiatives taken by firms or details on how common these programs are. Little attempt has been made to document best practice or evaluate the effectiveness of those programs that do exist.

38. Relatively more effort has been spent in documenting national policy approaches to training for older persons. It is well recognised that governments can have a significant impact on the training of older persons. The OECD has called for a strategic approach to policy formulation that cuts across areas of responsibility of government departments and has also enunciated seven principles to guide policy development.

39. It is possible to categorise the approach of governments in terms of their relative emphasis on the importance of regulatory requirements, with options ranging from the more to the less regulated.

40. One approach, common in continental Europe is for central government to use local employer/industry associations (based on compulsory membership) to self regulate their members (Germany and France).

41. A second approach is for the central government to directly initiate programs requiring enterprises to fund these activities through levies (Singapore, Korea and Taiwan).

42. Governments in the UK, US, Canada and Australia operate within a less regulated framework. It is important to note that these governments differ in the extent to which they have established appropriate frameworks to encourage enterprises to improve their human resource management.

43. The authors suggest that the comprehensive set of policies and programs planned or being implemented in the UK may offer Australia the best source of new ideas on innovative policy, but the initiatives need to be evaluated in terms of efficacy for older workers. These initiatives include:

- incentives to encourage individuals to take more responsibility for funding their own training;
- provision of guides to enterprises on how best to meet the training needs of all their employees, including older workers;
- provision of government assistance to unemployed older workers through the extension of a mutual obligation program to cover persons aged 50 or over.

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I refer to the public hearing on 12 August 1999 at which a number of DETYA officers attended to answer questions by the Committee.

At that hearing the Committee requested further information on one of the DETYA initiatives -the consultancy project "Barriers to Training for Older Persons and Possible Policy Solutions". This is one of the departmental initiatives in support of the International Year of Older Persons (IYOP). The Committee requested a summary of a literature review carried out as part of the project. The summary is factual, not interpretative and is now forwarded for consideration by the Committee.

If you have any queries about this matter please contact Ms Dianne Peacock on 6240 8819.

Yours sincerely

Eileen Newmarch
A/g Assistant Secretary
Analysis and Equity Branch
13 December 1999

BARRIERS TO TRAINING FACING OLDER WORKERS

DETYA SUMMARY OF NILS LITERATURE REVIEW

Introduction

1. Along with other industrialised nations, Australia considers the creation of a highly skilled workforce essential to improving productivity and international competitiveness. In recent years the recognition of this need has led to a renewed focus on education and training.

2. Yet research indicates that training is not gained by all groups of workers on an equal basis. Training incidence varies according to various characteristics of workers, with one of these being the age of the worker. It is widely recognised that older workers are less likely to gain access to training than are their younger counterparts.

3. This raises equity and demographical issues. There is increasing concern that the economically active may not be able to support the growing numbers of older/ageing people in Australia. So it is highly desirable that older workers delay their exit from the workforce. Keeping their employment prospects at optimal levels means providing them with training opportunities. This is especially true given the changing nature of work ie. the rapid advance in technologies and the increasing emphasis on interpersonal skills.

4. The NILS consultancy literature review gathers together information from various disciplines (including labour economics, sociology, psychology, organisational behaviour, education and gerontology) to discuss three main issues:

1. the relationship between age and participation in training;
2. barriers to training for older workers; and
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Below is a detailed discussion of each of these three main issues.

(1) The relationship between age and participation in training

Conclusions

5. Conclusions suggested by the research are:
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Discussion

6. Training is offered to workers when the costs of that training are lower than the expected long-term benefits accruing to the employer. Likewise, employees participate in those training activities they believe will be advantageous to them. In regard to the expected effectiveness of the training, older persons are considered less attractive

training propositions for employers. Thus it is possible that older workers are disadvantaged as a result of age-based discrimination. Conversely it can be argued that younger workers have a higher quit rate and that older workers exhibit greater employment stability, which would advantage older workers in terms of access to training.

7. While a fair number of studies have focussed specifically on access to training among younger workers, this is not the case for older workers. So less information is available on the participation patterns of older workers in training, especially when considering data on ageing and training. Nevertheless there are two valuable sources of information - the International Adult Literacy Survey (IALS) and three ABS surveys of training and education experience (1989, 1993 and 1997).

8. *The ABS Surveys:* The likelihood of receiving on-the-job training over a one-year period is much lower among older adults, compared with young adults. In the case of in-house and external training it is only the oldest cohort - aged 55-64 years - who appear to be at a sizeable disadvantage. Participation rates among 45 to 54 year olds are not substantially different from younger cohorts. Further, comparisons across three surveys suggest that the comparative position of older workers has improved over time.

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6. Training is offered to workers when the costs of that training are lower than the expected long-term benefits accruing to the employer. Likewise, employees participate in those training activities they believe will be advantageous to them. In regard to the expected effectiveness of the training, older persons are considered less attractive

training propositions for employers. Thus it is possible that older workers are disadvantaged as a result of age-based discrimination. Conversely it can be argued that younger workers have a higher quit rate and that older workers exhibit greater employment stability, which would advantage older workers in terms of access to training.

7. While a fair number of studies have focussed specifically on access to training among younger workers, this is not the case for older workers. So less information is available on the participation patterns of older workers in training, especially when considering data on ageing and training. Nevertheless there are two valuable sources of information - the International Adult Literacy Survey (IALS) and three ABS surveys of training and education experience (1989, 1993 and 1997).

8. *The ABS Surveys:* The likelihood of receiving on-the-job training over a one-year period is much lower among older adults, compared with young adults. In the case of in-house and external training it is only the oldest cohort - aged 55-64 years - who appear to be at a sizeable disadvantage. Participation rates among 45 to 54 year olds are not substantially different from younger cohorts. Further, comparisons across three surveys suggest that the comparative position of older workers has improved over time.

9. *The International Adult Literacy Survey* - Findings of the International Adult Literacy Survey (IALS) in 1994 to 1995 in 11 countries, including Australia, reveal that Australia ranks slightly above average (38.1) in terms of the incidence of job-related training participation of employed persons. This compares with the ten-country mean of 34.4 per cent, with Australia ranking above Belgium, Canada, Ireland, the Netherlands, Poland and Switzerland, but below New Zealand, the UK and the US. Overall, such findings would appear to contradict the widely held view that Australia under-invests in training. That said, if the UK represents best practice (with 51.9% of all employed adults receiving training) then Australia is still a long way from best practice. There are also good reasons to believe that some of the countries not represented such as Japan and Germany, may have even higher rates of participation in training. However, for Australia, the Netherlands and the UK, inequality in training incidence between mid-career workers and older workers is greatest.

10. IALS data also suggest that time spent in training declines with age. This pattern holds for all but two of the countries considered (Belgium and Ireland).

11. *Type of training is important in age/training relationship* - Research also suggests that the relationship between age and training incidence is very dependent on the type of training under consideration. Overall, the evidence suggests that older workers are at a disadvantage in accessing formal structured types of training in the workplace. The provision of formal structured training is more costly, representing a greater investment and hence employers are more selective in who they offer this training to.

12. *Older workers are the most disadvantaged* - Evidence also exists that training incidence also varies within the group of 45 to 64 year olds. The oldest workers are especially disadvantaged. In Australia, for example, almost one-third (32.5%) of 45 to 54 year olds in the labour force had participated in job-related training, compared with 25% of 55 to 64 year olds.

13. *Disadvantage is gender-biased* - Gender makes a difference in the age and training relationship, with the decline in employer-funded training incidence steeper for

men as they age than for women. Overall most of the research suggests the conclusion that the relationship between age and training incidence is strongest among men.

14. However, for both genders the oldest workers (55-64 years of age) were least likely to have obtained training.

15. *Other variables in the age/training relationship* - Apart from gender, other variables that are known to be associated with training incidence and which also are thought to be related to age include:

- education,
- hours of work and employment status,
- experience and job tenure,
- firm size,
- occupation and
- industry.

16. *Levels of education* - Older workers with higher levels of educational attainment are more likely to get training than those with lower levels of educational attainment. Education is a signal that an individual possesses an aptitude for learning, thus making training more cost effective. Thus, the lower than average levels of formal education among older persons may provide at least part of the explanation for the lower incidence of training among older workers.

17. *Hours of work and employment status* - Hours of work and employment status are also important for the age training relationship. The incidence of formal training among full-time permanent workers was lowest for both the youngest and oldest members of the workforce. In contrast, among casual workers the type of training varied relatively little with age. Experience and tenure are additional variables that almost certainly intervene between the age-training incidence relationship.

18. *Size of firm and profession* - Research has shown that older workers are not treated any differently in large or smaller firms in terms of access to training. Those in more advanced occupations - managers, professionals and associated professionals - have an increased probability of participating in training. Contrary to other variables, the over-representation of older workers in both large firms and skilled professions thus works in favour of their accessing training.

19. Overall there are a large number of reasons that could explain why older workers are disadvantaged in the training process. In other words, rather than a function of age per se, the disadvantage older workers experience may simply reflect other characteristics. Unfortunately no empirical studies have attempted to quantify the relative importance of differences in the characteristics of older and younger workers from the influence of discriminatory behaviour by employers.

(2) Barriers to Training for older workers

Conclusions

20. The weight of evidence suggests that training performance is adversely affected by an ageing effect. Less clear is the cause, and importance of this effect. Its magnitude is moderated by a number of other intervening variables including pre-existing skills, the type of learning activity and the context in which the training is delivered. Further it has not been clearly established at what age this learning effect becomes noticeable, although there is some evidence that it is rarely apparent before the age of 60 years. The bottom-line is that in many settings and contexts, the additional cost of training an older worker compared with a younger worker may be very small.

Discussion

21. *Age-based stereotypes* - Arguably the first obstacle that older workers have to overcome in obtaining work-related training are the biases inherent in the stereotyped views that many managers (and indeed the broader community) hold about the productive potential of older workers.

22. The existence of age-based stereotypes amongst employers is confirmed by experimental studies and shows that stereotypes can influence management decisions. Older workers were seen as:

- more resistant to change;
- less creative;
- more cautious;
- less physically capable;
- more disinterested in technological change;
- less suitable for training - particularly for new technological skills.

23. However, the evidence in the research also points to more mixed attitudes on the part of employers, and it could equally be argued that employers see older workers in a more positive light. Older workers are, conversely, seen as:

- having better developed skills;
- more stable and reliable/loyal
- understanding and complying with management directives.

24. *Age and job performance* - Of course, whether or not employers hold to stereotypes, more important is whether such views are accurate, and in many cases it is clear that they are not. The most obvious example here is the often-assumed inverse relationship between age and work performance. This relationship has been the subject of a vast amount of research, with reviews of this research all reaching the same conclusion: existing evidence is not able to demonstrate a consistently strong relationship between age and job performance.

25. This is not to say that performance cannot decline with age under certain conditions and in certain settings. The type of work undertaken is an important factor. Various studies have suggested that it is the complexity of the job that is the key factor, with the greater challenge and skill development intrinsic to more complex jobs leading to better job performance. There is a positive correlation between age and performance in jobs, which are not too demanding of 'basic capacities' (such as speed of information processing and effectiveness of sensory mechanisms) and where performance benefits from experience. This would include jobs that are largely knowledge-based and do not

involve substantial time pressures. At the other extreme, work performance is predicted to decline with age in jobs which assign a large weight to basic capacities and where experience is of little help.

26. Older workers may in fact benefit more from training which builds on existing concepts, skills and knowledge than younger workers who don't have the same level of accumulated experience. Put more simply, younger workers may be in a better training position than older workers where the training involves new or novel activities, but not where the training involves familiar activities.

27. One further variable, which may be important in moderating the relationship between age and training performance, is the way training is provided. Some researchers have argued that training method is crucial in influencing the effectiveness of training for older learners, and that many of the learning difficulties often ascribed to ageing are due in part to the use of training methods that are not suited to older workers.

28. *Worker attitudes* - Numerous writers have pointed to the possibility that older workers may be reluctant to participate in training programs, perhaps because they do not feel confident about the likelihood of their succeeding in a training program, fear that they will be unable to compete with younger and possibly better educated trainees, or simply because they are unfamiliar with training environments. Finally recent Australian research confirms that, since experience and skills accumulate with age, older workers believe that there is less need for them to undertake training.

29. *Exposure to new technology* - Older workers are far less confident about their ability to learn, especially when exposure to new technology is involved. It follows that any initiative that can reduce pre-training anxiety among older workers will result in an improvement in training performance. Many studies have found that the fears of employees generally subside following sustained exposure to the new technology and increased familiarity with the new learning environment.

30. *Training participation and retirement plans* - If older workers perceive little benefit from training due to retirement plans, then it seems unlikely that any organisational initiatives will alter such views for those workers who see themselves as nearing the end of their working careers.

(3) Factors that enhance the access of older workers to training

Conclusions

31. There are no definitive conclusions regarding the efficacy of special teaching/training methods for older adults.

Discussion

32. There is a paucity of information concerning actual initiatives in the private sector aimed at encouraging access to training by older workers. Conversely, government policy initiatives are relatively well-documented and diverse, with the most innovative initiatives to be found in the UK.

Discussion

33. *Training methods* - What strategies and actions can be taken to improve the training outcomes for older persons? Are there training methods that enhance the learning ability of older workers? And, is the learning ability of older persons improved to a greater degree than that of other learners via the use of these methods?

34. Belbin, Belbin et al, have developed seminal work in these areas in the 1960 and 1970s. These researchers are credited with the development of a number of training methods - namely the discovery method, activity learning and programmed instruction - that were aimed at improving the learning performance of the older trainee. However some researchers argue that these methods improve outcomes for all learners, whether young and older, and the weight of the evidence suggests that this is so.

35. Another body of literature relevant to the learning of older persons is that centred on the broader area of adult education, and specifically the andragogical theory which argues that the theory of teaching adults is qualitatively different from that of teaching younger persons and thus special methods are required to teach adults. However, whether or not teaching adults is different from that of teaching children remains ambiguous. Other adult education specialists argue that adult education is essentially the same process as education generally and that special theoretical developments are not required. The major shortcoming in resolving this debate is that underlying theories have not been tested through research.

36. *Organisational/public policy initiatives* - Most of the literature involves statements by human resource practitioners on what organisations should do to assist older workers in accessing training opportunities. For example:

- organisations should develop a culture that encourages learning and performance for all employees;
- training should be given to managerial staff on the ageing process;
- career-planning programs can boost commitment and productivity amongst older workers.

37. In spite of this encouragement the literature failed to produce a large range of actual initiatives taken by firms or details on how common these programs are. Little attempt has been made to document best practice or evaluate the effectiveness of those programs that do exist.

38. Relatively more effort has been spent in documenting national policy approaches to training for older persons. It is well recognised that governments can have a significant impact on the training of older persons. The OECD has called for a strategic approach to policy formulation that cuts across areas of responsibility of government departments and has also enunciated seven principles to guide policy development.

39. It is possible to categorise the approach of governments in terms of their relative emphasis on the importance of regulatory requirements, with options ranging from the more to the less regulated.

40. One approach, common in continental Europe is for central government to use local employer/industry associations (based on compulsory membership) to self regulate their members (Germany and France).

41. A second approach is for the central government to directly initiate programs requiring enterprises to fund these activities through levies (Singapore, Korea and Taiwan).

42. Governments in the UK, US, Canada and Australia operate within a less regulated framework. It is important to note that these governments differ in the extent to which they have established appropriate frameworks to encourage enterprises to improve their human resource management.

43. The authors suggest that the comprehensive set of policies and programs planned or being implemented in the UK may offer Australia the best source of new ideas on innovative policy, but the initiatives need to be evaluated in terms of efficacy for older workers. These initiatives include:

- incentives to encourage individuals to take more responsibility for funding their own training;
- provision of guides to enterprises on how best to meet the training needs of all their employees, including older workers;
- provision of government assistance to unemployed older workers through the extension of a mutual obligation program to cover persons aged 50 or over.

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I refer to the public hearing on 12 August 1999 at which a number of DETYA officers attended to answer questions by the Committee.

At that hearing the Committee requested further information on one of the DETYA initiatives -the consultancy project "Barriers to Training for Older Persons and Possible Policy Solutions". This is one of the departmental initiatives in support of the International Year of Older Persons (IYOP). The Committee requested a summary of a literature review carried out as part of the project. The summary is factual, not interpretative and is now forwarded for consideration by the Committee.

If you have any queries about this matter please contact Ms Dianne Peacock on 6240 8819.

Yours sincerely

Eileen Newmarch
A/g Assistant Secretary
Analysis and Equity Branch
13 December 1999

BARRIERS TO TRAINING FACING OLDER WORKERS

DETYA SUMMARY OF NILS LITERATURE REVIEW

Introduction

1. Along with other industrialised nations, Australia considers the creation of a highly skilled workforce essential to improving productivity and international competitiveness. In recent years the recognition of this need has led to a renewed focus on education and training.

2. Yet research indicates that training is not gained by all groups of workers on an equal basis. Training incidence varies according to various characteristics of workers, with one of these being the age of the worker. It is widely recognised that older workers are less likely to gain access to training than are their younger counterparts.

3. This raises equity and demographical issues. There is increasing concern that the economically active may not be able to support the growing numbers of older/ageing people in Australia. So it is highly desirable that older workers delay their exit from the workforce. Keeping their employment prospects at optimal levels means providing them with training opportunities. This is especially true given the changing nature of work ie. the rapid advance in technologies and the increasing emphasis on interpersonal skills.

4. The NILS consultancy literature review gathers together information from various disciplines (including labour economics, sociology, psychology, organisational behaviour, education and gerontology) to discuss three main issues:

1. the relationship between age and participation in training;
2. barriers to training for older workers; and
3. factors that enhance the access of older workers to training.

Below is a detailed discussion of each of these three main issues.

(1) The relationship between age and participation in training

Conclusions

5. Conclusions suggested by the research are:
- older workers are typically less likely to receive and participate in training;
 - the relationship between age and training varies with the type of training being considered;
 - the age training profiles differ between male and female workers;
 - there is evidence from the UK to suggest that the relative position of older workers may be improving over time, and such findings are consistent with the descriptive evidence available from the Australian surveys of training and education experience.

Discussion

6. Training is offered to workers when the costs of that training are lower than the expected long-term benefits accruing to the employer. Likewise, employees participate in those training activities they believe will be advantageous to them. In regard to the expected effectiveness of the training, older persons are considered less attractive

training propositions for employers. Thus it is possible that older workers are disadvantaged as a result of age-based discrimination. Conversely it can be argued that younger workers have a higher quit rate and that older workers exhibit greater employment stability, which would advantage older workers in terms of access to training.

7. While a fair number of studies have focussed specifically on access to training among younger workers, this is not the case for older workers. So less information is available on the participation patterns of older workers in training, especially when considering data on ageing and training. Nevertheless there are two valuable sources of information - the International Adult Literacy Survey (IALS) and three ABS surveys of training and education experience (1989, 1993 and 1997).

8. *The ABS Surveys:* The likelihood of receiving on-the-job training over a one-year period is much lower among older adults, compared with young adults. In the case of in-house and external training it is only the oldest cohort - aged 55-64 years - who appear to be at a sizeable disadvantage. Participation rates among 45 to 54 year olds are not substantially different from younger cohorts. Further, comparisons across three surveys suggest that the comparative position of older workers has improved over time.

9. *The International Adult Literacy Survey* - Findings of the International Adult Literacy Survey (IALS) in 1994 to 1995 in 11 countries, including Australia, reveal that Australia ranks slightly above average (38.1) in terms of the incidence of job-related training participation of employed persons. This compares with the ten-country mean of 34.4 per cent, with Australia ranking above Belgium, Canada, Ireland, the Netherlands, Poland and Switzerland, but below New Zealand, the UK and the US. Overall, such findings would appear to contradict the widely held view that Australia under-invests in training. That said, if the UK represents best practice (with 51.9% of all employed adults receiving training) then Australia is still a long way from best practice. There are also good reasons to believe that some of the countries not represented such as Japan and Germany, may have even higher rates of participation in training. However, for Australia, the Netherlands and the UK, inequality in training incidence between mid-career workers and older workers is greatest.

10. IALS data also suggest that time spent in training declines with age. This pattern holds for all but two of the countries considered (Belgium and Ireland).

11. *Type of training is important in age/training relationship* - Research also suggests that the relationship between age and training incidence is very dependent on the type of training under consideration. Overall, the evidence suggests that older workers are at a disadvantage in accessing formal structured types of training in the workplace. The provision of formal structured training is more costly, representing a greater investment and hence employers are more selective in who they offer this training to.

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- education,
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9. *The International Adult Literacy Survey* - Findings of the International Adult Literacy Survey (IALS) in 1994 to 1995 in 11 countries, including Australia, reveal that Australia ranks slightly above average (38.1) in terms of the incidence of job-related training participation of employed persons. This compares with the ten-country mean of 34.4 per cent, with Australia ranking above Belgium, Canada, Ireland, the Netherlands, Poland and Switzerland, but below New Zealand, the UK and the US. Overall, such findings would appear to contradict the widely held view that Australia under-invests in training. That said, if the UK represents best practice (with 51.9% of all employed adults receiving training) then Australia is still a long way from best practice. There are also good reasons to believe that some of the countries not represented such as Japan and Germany, may have even higher rates of participation in training. However, for Australia, the Netherlands and the UK, inequality in training incidence between mid-career workers and older workers is greatest.

10. IALS data also suggest that time spent in training declines with age. This pattern holds for all but two of the countries considered (Belgium and Ireland).

11. *Type of training is important in age/training relationship* - Research also suggests that the relationship between age and training incidence is very dependent on the type of training under consideration. Overall, the evidence suggests that older workers are at a disadvantage in accessing formal structured types of training in the workplace. The provision of formal structured training is more costly, representing a greater investment and hence employers are more selective in who they offer this training to.

12. *Older workers are the most disadvantaged* - Evidence also exists that training incidence also varies within the group of 45 to 64 year olds. The oldest workers are especially disadvantaged. In Australia, for example, almost one-third (32.5%) of 45 to 54 year olds in the labour force had participated in job-related training, compared with 25% of 55 to 64 year olds.

13. *Disadvantage is gender-biased* - Gender makes a difference in the age and training relationship, with the decline in employer-funded training incidence steeper for

men as they age than for women. Overall most of the research suggests the conclusion that the relationship between age and training incidence is strongest among men.

14. However, for both genders the oldest workers (55-64 years of age) were least likely to have obtained training.

15. *Other variables in the age/training relationship* - Apart from gender, other variables that are known to be associated with training incidence and which also are thought to be related to age include:

- education,
- hours of work and employment status,
- experience and job tenure,
- firm size,
- occupation and
- industry.

16. *Levels of education* - Older workers with higher levels of educational attainment are more likely to get training than those with lower levels of educational attainment. Education is a signal that an individual possesses an aptitude for learning, thus making training more cost effective. Thus, the lower than average levels of formal education among older persons may provide at least part of the explanation for the lower incidence of training among older workers.

17. *Hours of work and employment status* - Hours of work and employment status are also important for the age training relationship. The incidence of formal training among full-time permanent workers was lowest for both the youngest and oldest members of the workforce. In contrast, among casual workers the type of training varied relatively little with age. Experience and tenure are additional variables that almost certainly intervene between the age-training incidence relationship.

18. *Size of firm and profession* - Research has shown that older workers are not treated any differently in large or smaller firms in terms of access to training. Those in more advanced occupations - managers, professionals and associated professionals - have an increased probability of participating in training. Contrary to other variables, the over-representation of older workers in both large firms and skilled professions thus works in favour of their accessing training.

19. Overall there are a large number of reasons that could explain why older workers are disadvantaged in the training process. In other words, rather than a function of age per se, the disadvantage older workers experience may simply reflect other characteristics. Unfortunately no empirical studies have attempted to quantify the relative importance of differences in the characteristics of older and younger workers from the influence of discriminatory behaviour by employers.

(2) Barriers to Training for older workers

Conclusions

20. The weight of evidence suggests that training performance is adversely affected by an ageing effect. Less clear is the cause, and importance of this effect. Its magnitude is moderated by a number of other intervening variables including pre-existing skills, the type of learning activity and the context in which the training is delivered. Further it has not been clearly established at what age this learning effect becomes noticeable, although there is some evidence that it is rarely apparent before the age of 60 years. The bottom-line is that in many settings and contexts, the additional cost of training an older worker compared with a younger worker may be very small.

Discussion

21. *Age-based stereotypes* - Arguably the first obstacle that older workers have to overcome in obtaining work-related training are the biases inherent in the stereotyped views that many managers (and indeed the broader community) hold about the productive potential of older workers.

22. The existence of age-based stereotypes amongst employers is confirmed by experimental studies and shows that stereotypes can influence management decisions. Older workers were seen as:

- more resistant to change;
- less creative;
- more cautious;
- less physically capable;
- more disinterested in technological change;
- less suitable for training - particularly for new technological skills.

23. However, the evidence in the research also points to more mixed attitudes on the part of employers, and it could equally be argued that employers see older workers in a more positive light. Older workers are, conversely, seen as:

- having better developed skills;
- more stable and reliable/loyal
- understanding and complying with management directives.

24. *Age and job performance* - Of course, whether or not employers hold to stereotypes, more important is whether such views are accurate, and in many cases it is clear that they are not. The most obvious example here is the often-assumed inverse relationship between age and work performance. This relationship has been the subject of a vast amount of research, with reviews of this research all reaching the same conclusion: existing evidence is not able to demonstrate a consistently strong relationship between age and job performance.

25. This is not to say that performance cannot decline with age under certain conditions and in certain settings. The type of work undertaken is an important factor. Various studies have suggested that it is the complexity of the job that is the key factor, with the greater challenge and skill development intrinsic to more complex jobs leading to better job performance. There is a positive correlation between age and performance in jobs, which are not too demanding of 'basic capacities' (such as speed of information processing and effectiveness of sensory mechanisms) and where performance benefits from experience. This would include jobs that are largely knowledge-based and do not

involve substantial time pressures. At the other extreme, work performance is predicted to decline with age in jobs which assign a large weight to basic capacities and where experience is of little help.

26. Older workers may in fact benefit more from training which builds on existing concepts, skills and knowledge than younger workers who don't have the same level of accumulated experience. Put more simply, younger workers may be in a better training position than older workers where the training involves new or novel activities, but not where the training involves familiar activities.

27. One further variable, which may be important in moderating the relationship between age and training performance, is the way training is provided. Some researchers have argued that training method is crucial in influencing the effectiveness of training for older learners, and that many of the learning difficulties often ascribed to ageing are due in part to the use of training methods that are not suited to older workers.

28. *Worker attitudes* - Numerous writers have pointed to the possibility that older workers may be reluctant to participate in training programs, perhaps because they do not feel confident about the likelihood of their succeeding in a training program, fear that they will be unable to compete with younger and possibly better educated trainees, or simply because they are unfamiliar with training environments. Finally recent Australian research confirms that, since experience and skills accumulate with age, older workers believe that there is less need for them to undertake training.

29. *Exposure to new technology* - Older workers are far less confident about their ability to learn, especially when exposure to new technology is involved. It follows that any initiative that can reduce pre-training anxiety among older workers will result in an improvement in training performance. Many studies have found that the fears of employees generally subside following sustained exposure to the new technology and increased familiarity with the new learning environment.

30. *Training participation and retirement plans* - If older workers perceive little benefit from training due to retirement plans, then it seems unlikely that any organisational initiatives will alter such views for those workers who see themselves as nearing the end of their working careers.

(3) Factors that enhance the access of older workers to training

Conclusions

31. There are no definitive conclusions regarding the efficacy of special teaching/training methods for older adults.

Discussion

32. There is a paucity of information concerning actual initiatives in the private sector aimed at encouraging access to training by older workers. Conversely, government policy initiatives are relatively well-documented and diverse, with the most innovative initiatives to be found in the UK.

Discussion

33. *Training methods* - What strategies and actions can be taken to improve the training outcomes for older persons? Are there training methods that enhance the learning ability of older workers? And, is the learning ability of older persons improved to a greater degree than that of other learners via the use of these methods?

34. Belbin, Belbin et al, have developed seminal work in these areas in the 1960 and 1970s. These researchers are credited with the development of a number of training methods - namely the discovery method, activity learning and programmed instruction - that were aimed at improving the learning performance of the older trainee. However some researchers argue that these methods improve outcomes for all learners, whether young and older, and the weight of the evidence suggests that this is so.

35. Another body of literature relevant to the learning of older persons is that centred on the broader area of adult education, and specifically the andragogical theory which argues that the theory of teaching adults is qualitatively different from that of teaching younger persons and thus special methods are required to teach adults. However, whether or not teaching adults is different from that of teaching children remains ambiguous. Other adult education specialists argue that adult education is essentially the same process as education generally and that special theoretical developments are not required. The major shortcoming in resolving this debate is that underlying theories have not been tested through research.

36. *Organisational/public policy initiatives* - Most of the literature involves statements by human resource practitioners on what organisations should do to assist older workers in accessing training opportunities. For example:

- organisations should develop a culture that encourages learning and performance for all employees;
- training should be given to managerial staff on the ageing process;
- career-planning programs can boost commitment and productivity amongst older workers.

37. In spite of this encouragement the literature failed to produce a large range of actual initiatives taken by firms or details on how common these programs are. Little attempt has been made to document best practice or evaluate the effectiveness of those programs that do exist.

38. Relatively more effort has been spent in documenting national policy approaches to training for older persons. It is well recognised that governments can have a significant impact on the training of older persons. The OECD has called for a strategic approach to policy formulation that cuts across areas of responsibility of government departments and has also enunciated seven principles to guide policy development.

39. It is possible to categorise the approach of governments in terms of their relative emphasis on the importance of regulatory requirements, with options ranging from the more to the less regulated.

40. One approach, common in continental Europe is for central government to use local employer/industry associations (based on compulsory membership) to self regulate their members (Germany and France).

41. A second approach is for the central government to directly initiate programs requiring enterprises to fund these activities through levies (Singapore, Korea and Taiwan).

42. Governments in the UK, US, Canada and Australia operate within a less regulated framework. It is important to note that these governments differ in the extent to which they have established appropriate frameworks to encourage enterprises to improve their human resource management.

43. The authors suggest that the comprehensive set of policies and programs planned or being implemented in the UK may offer Australia the best source of new ideas on innovative policy, but the initiatives need to be evaluated in terms of efficacy for older workers. These initiatives include:

- incentives to encourage individuals to take more responsibility for funding their own training;
- provision of guides to enterprises on how best to meet the training needs of all their employees, including older workers;
- provision of government assistance to unemployed older workers through the extension of a mutual obligation program to cover persons aged 50 or over.

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I refer to the public hearing on 12 August 1999 at which a number of DETYA officers attended to answer questions by the Committee.

At that hearing the Committee requested further information on one of the DETYA initiatives -the consultancy project "Barriers to Training for Older Persons and Possible Policy Solutions". This is one of the departmental initiatives in support of the International Year of Older Persons (IYOP). The Committee requested a summary of a literature review carried out as part of the project. The summary is factual, not interpretative and is now forwarded for consideration by the Committee.

If you have any queries about this matter please contact Ms Dianne Peacock on 6240 8819.

Yours sincerely

Eileen Newmarch
A/g Assistant Secretary
Analysis and Equity Branch
13 December 1999

BARRIERS TO TRAINING FACING OLDER WORKERS

DETYA SUMMARY OF NILS LITERATURE REVIEW

Introduction

1. Along with other industrialised nations, Australia considers the creation of a highly skilled workforce essential to improving productivity and international competitiveness. In recent years the recognition of this need has led to a renewed focus on education and training.

2. Yet research indicates that training is not gained by all groups of workers on an equal basis. Training incidence varies according to various characteristics of workers, with one of these being the age of the worker. It is widely recognised that older workers are less likely to gain access to training than are their younger counterparts.

3. This raises equity and demographical issues. There is increasing concern that the economically active may not be able to support the growing numbers of older/ageing people in Australia. So it is highly desirable that older workers delay their exit from the workforce. Keeping their employment prospects at optimal levels means providing them with training opportunities. This is especially true given the changing nature of work ie. the rapid advance in technologies and the increasing emphasis on interpersonal skills.

4. The NILS consultancy literature review gathers together information from various disciplines (including labour economics, sociology, psychology, organisational behaviour, education and gerontology) to discuss three main issues:

1. the relationship between age and participation in training;
2. barriers to training for older workers; and
3. factors that enhance the access of older workers to training.

Below is a detailed discussion of each of these three main issues.

(1) The relationship between age and participation in training

Conclusions

5. Conclusions suggested by the research are:
- older workers are typically less likely to receive and participate in training;
 - the relationship between age and training varies with the type of training being considered;
 - the age training profiles differ between male and female workers;
 - there is evidence from the UK to suggest that the relative position of older workers may be improving over time, and such findings are consistent with the descriptive evidence available from the Australian surveys of training and education experience.

Discussion

6. Training is offered to workers when the costs of that training are lower than the expected long-term benefits accruing to the employer. Likewise, employees participate in those training activities they believe will be advantageous to them. In regard to the expected effectiveness of the training, older persons are considered less attractive

training propositions for employers. Thus it is possible that older workers are disadvantaged as a result of age-based discrimination. Conversely it can be argued that younger workers have a higher quit rate and that older workers exhibit greater employment stability, which would advantage older workers in terms of access to training.

7. While a fair number of studies have focussed specifically on access to training among younger workers, this is not the case for older workers. So less information is available on the participation patterns of older workers in training, especially when considering data on ageing and training. Nevertheless there are two valuable sources of information - the International Adult Literacy Survey (IALS) and three ABS surveys of training and education experience (1989, 1993 and 1997).

8. *The ABS Surveys:* The likelihood of receiving on-the-job training over a one-year period is much lower among older adults, compared with young adults. In the case of in-house and external training it is only the oldest cohort - aged 55-64 years - who appear to be at a sizeable disadvantage. Participation rates among 45 to 54 year olds are not substantially different from younger cohorts. Further, comparisons across three surveys suggest that the comparative position of older workers has improved over time.

9. *The International Adult Literacy Survey* - Findings of the International Adult Literacy Survey (IALS) in 1994 to 1995 in 11 countries, including Australia, reveal that Australia ranks slightly above average (38.1) in terms of the incidence of job-related training participation of employed persons. This compares with the ten-country mean of 34.4 per cent, with Australia ranking above Belgium, Canada, Ireland, the Netherlands, Poland and Switzerland, but below New Zealand, the UK and the US. Overall, such findings would appear to contradict the widely held view that Australia under-invests in training. That said, if the UK represents best practice (with 51.9% of all employed adults receiving training) then Australia is still a long way from best practice. There are also good reasons to believe that some of the countries not represented such as Japan and Germany, may have even higher rates of participation in training. However, for Australia, the Netherlands and the UK, inequality in training incidence between mid-career workers and older workers is greatest.

10. IALS data also suggest that time spent in training declines with age. This pattern holds for all but two of the countries considered (Belgium and Ireland).

11. *Type of training is important in age/training relationship* - Research also suggests that the relationship between age and training incidence is very dependent on the type of training under consideration. Overall, the evidence suggests that older workers are at a disadvantage in accessing formal structured types of training in the workplace. The provision of formal structured training is more costly, representing a greater investment and hence employers are more selective in who they offer this training to.

12. *Older workers are the most disadvantaged* - Evidence also exists that training incidence also varies within the group of 45 to 64 year olds. The oldest workers are especially disadvantaged. In Australia, for example, almost one-third (32.5%) of 45 to 54 year olds in the labour force had participated in job-related training, compared with 25% of 55 to 64 year olds.

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men as they age than for women. Overall most of the research suggests the conclusion that the relationship between age and training incidence is strongest among men.

14. However, for both genders the oldest workers (55-64 years of age) were least likely to have obtained training.

15. *Other variables in the age/training relationship* - Apart from gender, other variables that are known to be associated with training incidence and which also are thought to be related to age include:

- education,
- hours of work and employment status,
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Conclusions

20. The weight of evidence suggests that training performance is adversely affected by an ageing effect. Less clear is the cause, and importance of this effect. Its magnitude is moderated by a number of other intervening variables including pre-existing skills, the type of learning activity and the context in which the training is delivered. Further it has not been clearly established at what age this learning effect becomes noticeable, although there is some evidence that it is rarely apparent before the age of 60 years. The bottom-line is that in many settings and contexts, the additional cost of training an older worker compared with a younger worker may be very small.

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10. IALS data also suggest that time spent in training declines with age. This pattern holds for all but two of the countries considered (Belgium and Ireland).

11. *Type of training is important in age/training relationship* - Research also suggests that the relationship between age and training incidence is very dependent on the type of training under consideration. Overall, the evidence suggests that older workers are at a disadvantage in accessing formal structured types of training in the workplace. The provision of formal structured training is more costly, representing a greater investment and hence employers are more selective in who they offer this training to.

12. *Older workers are the most disadvantaged* - Evidence also exists that training incidence also varies within the group of 45 to 64 year olds. The oldest workers are especially disadvantaged. In Australia, for example, almost one-third (32.5%) of 45 to 54 year olds in the labour force had participated in job-related training, compared with 25% of 55 to 64 year olds.

13. *Disadvantage is gender-biased* - Gender makes a difference in the age and training relationship, with the decline in employer-funded training incidence steeper for

men as they age than for women. Overall most of the research suggests the conclusion that the relationship between age and training incidence is strongest among men.

14. However, for both genders the oldest workers (55-64 years of age) were least likely to have obtained training.

15. *Other variables in the age/training relationship* - Apart from gender, other variables that are known to be associated with training incidence and which also are thought to be related to age include:

- education,
- hours of work and employment status,
- experience and job tenure,
- firm size,
- occupation and
- industry.

16. *Levels of education* - Older workers with higher levels of educational attainment are more likely to get training than those with lower levels of educational attainment. Education is a signal that an individual possesses an aptitude for learning, thus making training more cost effective. Thus, the lower than average levels of formal education among older persons may provide at least part of the explanation for the lower incidence of training among older workers.

17. *Hours of work and employment status* - Hours of work and employment status are also important for the age training relationship. The incidence of formal training among full-time permanent workers was lowest for both the youngest and oldest members of the workforce. In contrast, among casual workers the type of training varied relatively little with age. Experience and tenure are additional variables that almost certainly intervene between the age-training incidence relationship.

18. *Size of firm and profession* - Research has shown that older workers are not treated any differently in large or smaller firms in terms of access to training. Those in more advanced occupations - managers, professionals and associated professionals - have an increased probability of participating in training. Contrary to other variables, the over-representation of older workers in both large firms and skilled professions thus works in favour of their accessing training.

19. Overall there are a large number of reasons that could explain why older workers are disadvantaged in the training process. In other words, rather than a function of age per se, the disadvantage older workers experience may simply reflect other characteristics. Unfortunately no empirical studies have attempted to quantify the relative importance of differences in the characteristics of older and younger workers from the influence of discriminatory behaviour by employers.

(2) Barriers to Training for older workers

Conclusions

20. The weight of evidence suggests that training performance is adversely affected by an ageing effect. Less clear is the cause, and importance of this effect. Its magnitude is moderated by a number of other intervening variables including pre-existing skills, the type of learning activity and the context in which the training is delivered. Further it has not been clearly established at what age this learning effect becomes noticeable, although there is some evidence that it is rarely apparent before the age of 60 years. The bottom-line is that in many settings and contexts, the additional cost of training an older worker compared with a younger worker may be very small.

Discussion

21. *Age-based stereotypes* - Arguably the first obstacle that older workers have to overcome in obtaining work-related training are the biases inherent in the stereotyped views that many managers (and indeed the broader community) hold about the productive potential of older workers.

22. The existence of age-based stereotypes amongst employers is confirmed by experimental studies and shows that stereotypes can influence management decisions. Older workers were seen as:

- more resistant to change;
- less creative;
- more cautious;
- less physically capable;
- more disinterested in technological change;
- less suitable for training - particularly for new technological skills.

23. However, the evidence in the research also points to more mixed attitudes on the part of employers, and it could equally be argued that employers see older workers in a more positive light. Older workers are, conversely, seen as:

- having better developed skills;
- more stable and reliable/loyal
- understanding and complying with management directives.

24. *Age and job performance* - Of course, whether or not employers hold to stereotypes, more important is whether such views are accurate, and in many cases it is clear that they are not. The most obvious example here is the often-assumed inverse relationship between age and work performance. This relationship has been the subject of a vast amount of research, with reviews of this research all reaching the same conclusion: existing evidence is not able to demonstrate a consistently strong relationship between age and job performance.

25. This is not to say that performance cannot decline with age under certain conditions and in certain settings. The type of work undertaken is an important factor. Various studies have suggested that it is the complexity of the job that is the key factor, with the greater challenge and skill development intrinsic to more complex jobs leading to better job performance. There is a positive correlation between age and performance in jobs, which are not too demanding of 'basic capacities' (such as speed of information processing and effectiveness of sensory mechanisms) and where performance benefits from experience. This would include jobs that are largely knowledge-based and do not

involve substantial time pressures. At the other extreme, work performance is predicted to decline with age in jobs which assign a large weight to basic capacities and where experience is of little help.

26. Older workers may in fact benefit more from training which builds on existing concepts, skills and knowledge than younger workers who don't have the same level of accumulated experience. Put more simply, younger workers may be in a better training position than older workers where the training involves new or novel activities, but not where the training involves familiar activities.

27. One further variable, which may be important in moderating the relationship between age and training performance, is the way training is provided. Some researchers have argued that training method is crucial in influencing the effectiveness of training for older learners, and that many of the learning difficulties often ascribed to ageing are due in part to the use of training methods that are not suited to older workers.

28. *Worker attitudes* - Numerous writers have pointed to the possibility that older workers may be reluctant to participate in training programs, perhaps because they do not feel confident about the likelihood of their succeeding in a training program, fear that they will be unable to compete with younger and possibly better educated trainees, or simply because they are unfamiliar with training environments. Finally recent Australian research confirms that, since experience and skills accumulate with age, older workers believe that there is less need for them to undertake training.

29. *Exposure to new technology* - Older workers are far less confident about their ability to learn, especially when exposure to new technology is involved. It follows that any initiative that can reduce pre-training anxiety among older workers will result in an improvement in training performance. Many studies have found that the fears of employees generally subside following sustained exposure to the new technology and increased familiarity with the new learning environment.

30. *Training participation and retirement plans* - If older workers perceive little benefit from training due to retirement plans, then it seems unlikely that any organisational initiatives will alter such views for those workers who see themselves as nearing the end of their working careers.

(3) Factors that enhance the access of older workers to training

Conclusions

31. There are no definitive conclusions regarding the efficacy of special teaching/training methods for older adults.

Discussion

32. There is a paucity of information concerning actual initiatives in the private sector aimed at encouraging access to training by older workers. Conversely, government policy initiatives are relatively well-documented and diverse, with the most innovative initiatives to be found in the UK.

Discussion

33. *Training methods* - What strategies and actions can be taken to improve the training outcomes for older persons? Are there training methods that enhance the learning ability of older workers? And, is the learning ability of older persons improved to a greater degree than that of other learners via the use of these methods?

34. Belbin, Belbin et al, have developed seminal work in these areas in the 1960 and 1970s. These researchers are credited with the development of a number of training methods - namely the discovery method, activity learning and programmed instruction - that were aimed at improving the learning performance of the older trainee. However some researchers argue that these methods improve outcomes for all learners, whether young and older, and the weight of the evidence suggests that this is so.

35. Another body of literature relevant to the learning of older persons is that centred on the broader area of adult education, and specifically the andragogical theory which argues that the theory of teaching adults is qualitatively different from that of teaching younger persons and thus special methods are required to teach adults. However, whether or not teaching adults is different from that of teaching children remains ambiguous. Other adult education specialists argue that adult education is essentially the same process as education generally and that special theoretical developments are not required. The major shortcoming in resolving this debate is that underlying theories have not been tested through research.

36. *Organisational/public policy initiatives* - Most of the literature involves statements by human resource practitioners on what organisations should do to assist older workers in accessing training opportunities. For example:

- organisations should develop a culture that encourages learning and performance for all employees;
- training should be given to managerial staff on the ageing process;
- career-planning programs can boost commitment and productivity amongst older workers.

37. In spite of this encouragement the literature failed to produce a large range of actual initiatives taken by firms or details on how common these programs are. Little attempt has been made to document best practice or evaluate the effectiveness of those programs that do exist.

38. Relatively more effort has been spent in documenting national policy approaches to training for older persons. It is well recognised that governments can have a significant impact on the training of older persons. The OECD has called for a strategic approach to policy formulation that cuts across areas of responsibility of government departments and has also enunciated seven principles to guide policy development.

39. It is possible to categorise the approach of governments in terms of their relative emphasis on the importance of regulatory requirements, with options ranging from the more to the less regulated.

40. One approach, common in continental Europe is for central government to use local employer/industry associations (based on compulsory membership) to self regulate their members (Germany and France).

41. A second approach is for the central government to directly initiate programs requiring enterprises to fund these activities through levies (Singapore, Korea and Taiwan).

42. Governments in the UK, US, Canada and Australia operate within a less regulated framework. It is important to note that these governments differ in the extent to which they have established appropriate frameworks to encourage enterprises to improve their human resource management.

43. The authors suggest that the comprehensive set of policies and programs planned or being implemented in the UK may offer Australia the best source of new ideas on innovative policy, but the initiatives need to be evaluated in terms of efficacy for older workers. These initiatives include:

- incentives to encourage individuals to take more responsibility for funding their own training;
- provision of guides to enterprises on how best to meet the training needs of all their employees, including older workers;
- provision of government assistance to unemployed older workers through the extension of a mutual obligation program to cover persons aged 50 or over.

**DEPARTMENT OF EDUCATION,
TRAINING AND YOUTH AFFAIRS**

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Canberra Act 2601
Tel: (02) 6240 8111

I refer to the public hearing on 12 August 1999 at which a number of DETYA officers attended to answer questions by the Committee.

At that hearing the Committee requested further information on one of the DETYA initiatives -the consultancy project "Barriers to Training for Older Persons and Possible Policy Solutions". This is one of the departmental initiatives in support of the International Year of Older Persons (IYOP). The Committee requested a summary of a literature review carried out as part of the project. The summary is factual, not interpretative and is now forwarded for consideration by the Committee.

If you have any queries about this matter please contact Ms Dianne Peacock on 6240 8819.

Yours sincerely

Eileen Newmarch
A/g Assistant Secretary
Analysis and Equity Branch
13 December 1999

BARRIERS TO TRAINING FACING OLDER WORKERS

DETYA SUMMARY OF NILS LITERATURE REVIEW

Introduction

1. Along with other industrialised nations, Australia considers the creation of a highly skilled workforce essential to improving productivity and international competitiveness. In recent years the recognition of this need has led to a renewed focus on education and training.

2. Yet research indicates that training is not gained by all groups of workers on an equal basis. Training incidence varies according to various characteristics of workers, with one of these being the age of the worker. It is widely recognised that older workers are less likely to gain access to training than are their younger counterparts.

3. This raises equity and demographical issues. There is increasing concern that the economically active may not be able to support the growing numbers of older/ageing people in Australia. So it is highly desirable that older workers delay their exit from the workforce. Keeping their employment prospects at optimal levels means providing them with training opportunities. This is especially true given the changing nature of work ie. the rapid advance in technologies and the increasing emphasis on interpersonal skills.

4. The NILS consultancy literature review gathers together information from various disciplines (including labour economics, sociology, psychology, organisational behaviour, education and gerontology) to discuss three main issues:

1. the relationship between age and participation in training;
2. barriers to training for older workers; and
3. factors that enhance the access of older workers to training.

Below is a detailed discussion of each of these three main issues.

(1) The relationship between age and participation in training

Conclusions

5. Conclusions suggested by the research are:
- older workers are typically less likely to receive and participate in training;
 - the relationship between age and training varies with the type of training being considered;
 - the age training profiles differ between male and female workers;
 - there is evidence from the UK to suggest that the relative position of older workers may be improving over time, and such findings are consistent with the descriptive evidence available from the Australian surveys of training and education experience.

Discussion

6. Training is offered to workers when the costs of that training are lower than the expected long-term benefits accruing to the employer. Likewise, employees participate in those training activities they believe will be advantageous to them. In regard to the expected effectiveness of the training, older persons are considered less attractive

training propositions for employers. Thus it is possible that older workers are disadvantaged as a result of age-based discrimination. Conversely it can be argued that younger workers have a higher quit rate and that older workers exhibit greater employment stability, which would advantage older workers in terms of access to training.

7. While a fair number of studies have focussed specifically on access to training among younger workers, this is not the case for older workers. So less information is available on the participation patterns of older workers in training, especially when considering data on ageing and training. Nevertheless there are two valuable sources of information - the International Adult Literacy Survey (IALS) and three ABS surveys of training and education experience (1989, 1993 and 1997).

8. *The ABS Surveys:* The likelihood of receiving on-the-job training over a one-year period is much lower among older adults, compared with young adults. In the case of in-house and external training it is only the oldest cohort - aged 55-64 years - who appear to be at a sizeable disadvantage. Participation rates among 45 to 54 year olds are not substantially different from younger cohorts. Further, comparisons across three surveys suggest that the comparative position of older workers has improved over time.

9. *The International Adult Literacy Survey* - Findings of the International Adult Literacy Survey (IALS) in 1994 to 1995 in 11 countries, including Australia, reveal that Australia ranks slightly above average (38.1) in terms of the incidence of job-related training participation of employed persons. This compares with the ten-country mean of 34.4 per cent, with Australia ranking above Belgium, Canada, Ireland, the Netherlands, Poland and Switzerland, but below New Zealand, the UK and the US. Overall, such findings would appear to contradict the widely held view that Australia under-invests in training. That said, if the UK represents best practice (with 51.9% of all employed adults receiving training) then Australia is still a long way from best practice. There are also good reasons to believe that some of the countries not represented such as Japan and Germany, may have even higher rates of participation in training. However, for Australia, the Netherlands and the UK, inequality in training incidence between mid-career workers and older workers is greatest.

10. IALS data also suggest that time spent in training declines with age. This pattern holds for all but two of the countries considered (Belgium and Ireland).

11. *Type of training is important in age/training relationship* - Research also suggests that the relationship between age and training incidence is very dependent on the type of training under consideration. Overall, the evidence suggests that older workers are at a disadvantage in accessing formal structured types of training in the workplace. The provision of formal structured training is more costly, representing a greater investment and hence employers are more selective in who they offer this training to.

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men as they age than for women. Overall most of the research suggests the conclusion that the relationship between age and training incidence is strongest among men.

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19. Overall there are a large number of reasons that could explain why older workers are disadvantaged in the training process. In other words, rather than a function of age per se, the disadvantage older workers experience may simply reflect other characteristics. Unfortunately no empirical studies have attempted to quantify the relative importance of differences in the characteristics of older and younger workers from the influence of discriminatory behaviour by employers.

(2) Barriers to Training for older workers

Conclusions

20. The weight of evidence suggests that training performance is adversely affected by an ageing effect. Less clear is the cause, and importance of this effect. Its magnitude is moderated by a number of other intervening variables including pre-existing skills, the type of learning activity and the context in which the training is delivered. Further it has not been clearly established at what age this learning effect becomes noticeable, although there is some evidence that it is rarely apparent before the age of 60 years. The bottom-line is that in many settings and contexts, the additional cost of training an older worker compared with a younger worker may be very small.

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