

Secondary school students' knowledge of and attitudes towards older people: does an education intervention programme make a difference?

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ABSTRACT

It is now increasingly recognised that if we are to combat ageism the attitudes and knowledge of young people need to be more positively constructed so that they do not hold stereotypic views of ageing. This study evaluates the impact of an educational intervention programme on the attitudes and knowledge of students aged 17–18 years from six secondary schools in Melbourne, Australia. Using Palmore's Facts on Aging Quiz to assess knowledge about and attitudes towards ageing in a quasi-experimental pre-test and post-test design, the results reveal that, in general, students hold low knowledge about older people and negative attitudes about ageing. However, the pre-test mean knowledge scores differed significantly between male and female students and across the various schools, and students who had greater contact with grandparents possessed slightly more knowledge. The post-test results show that the intervention education programme was not successful in raising the student's level of knowledge. The results also show that, in general, the students hold negative attitudes towards older people and that there was little change in their attitudes following the intervention programme. The paper discusses the implications of these results regarding curriculum development in education programmes on ageing intended for young people.

KEY WORDS – ageism, students, attitudes, knowledge, ageing, intervention.

Introduction

The term 'ageism', coined by Robert Butler in 1969, has stimulated a number of studies on attitudes towards ageing and older people (Rodeheaver 1990). Ageism reflects a deep-seated uneasiness on the

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part of the young and middle-aged; a personal revulsion to and distaste for growing old, disease, disability and a fear of powerlessness, uselessness and death (Butler 1975). Research has shown that ignorance about ageing and older people has reinforced false beliefs that ageing causes inevitable and irreversible changes (Ferraro 1992; Minichiello *et al.* 1992). For this reason education and intergenerational activity programmes which are aimed at addressing prejudicial views play an important role in reversing the formation of ageist attitudes in the community. An important point, however, needs to be made here regarding the impact that such programmes play in the wider context of changing ageist behaviour. Stereotypes about old age and older people are the products of the social structure within which ageing occurs. For example, some studies have found that the media perpetuate stereotypes which reinforce prejudice, discrimination and age-based segregation of older people, and that ageism results from the economic arrangements which devalue the social position of older people (Walker and Minichiello 1996).

If we accept this argument then several points are worth raising regarding studies which are designed to reverse negative attitudes towards older people. First, intervention programmes which are directed at changing knowledge about ageing and older people will not by themselves significantly alter social attitudes, unless the institutional arrangements in society also promote similar change. Second, programmes which are aimed at altering knowledge levels must recognise that essential to the formulation of attitudes are beliefs. Beliefs are cumulative and serve as an 'information base', so that new beliefs are built upon prior beliefs and any significant and long-term changes to beliefs will seldom be the result of 'laboratory' intervention manipulation. Third, studies which examine the effects of positive attitudes towards older people face the complex question of what is an appropriate or 'correct' attitude toward ageing. Any attempt to measure such a 'correct' attitude into a scale will oversimplify the topic because ageism is socially constructed and based upon ever-changing structural and culturally-based beliefs about the ageing experience. Intervention studies, within this context, can at best measure people's knowledge of the experience of biological and social ageing, and obtain estimates of general attitudes towards older people which can statistically be aggregated to be either positive or negative. For example, a number of studies in this field have used Palmore's test to measure young people's knowledge about older people, to reveal misconceptions about ageing and to measure bias towards the aged (Harris and Chngas 1994). A pre- and post-test statistically

constructed measure is then used to determine the impact of, for example, an education programme on the knowledge level, and as a rough measure of changes to the attitudes held by the study population toward older adults.

Studies have consistently found that negative perceptions about older people and lack of knowledge about ageing is common among all age groups and these results are similar across different countries (Palmore 1988). Reviewing research into attitudes towards older people, McTavish found that generally speaking older people are perceived stereotypically and negatively. They are regarded as 'generally ill, tired, mentally slower, forgetful, less able to learn new things, grouchy, withdrawn, feeling sorry for themselves, less likely to participate in activities (except, perhaps, religion), isolated, in the least happy or fortunate time of life, unproductive and defensive' (McTavish 1971). Older people are also generally thought to be asexual (Deacon *et al.* 1996). Such negative perceptions about older people continue to be found in more recent studies (Rodeheaver 1990).

While the attitudes and knowledge levels of health professionals towards older people have been extensively studied, more recent studies show that young people's attitudes towards older people are generally negative (Aday *et al.* 1991; Thomas and Hallebone 1996). For example, older people are often perceived by young people to be socially alienated and physically impaired (Falchikov 1990). Other studies have revealed that young children's attitudes toward older people become less positive as they become adolescents (Isaccs and Bearison 1986; Smith and Mack 1993). An Australian study which compared a group of eleven-year-old students with fifteen-year-olds found that the older group showed more prejudice towards older people than the younger group (Thomas and Hallebone 1996). These studies have also identified some of the factors which may contribute to young people's negative attitudes: lack of intergenerational contact, misperceptions of and misinformation about the ageing process, and the social construction of ageing as a 'social problem'. Similar results have been reported in studies conducted in the United States where, for example, Levin (1988) reports that young people show a strong and consistent degree of ageist stereotyping. In another study Isaccs and Bearison (1986) found that prejudice against older people was found in the verbal and non-verbal behaviour of six-year-old children. Biggs (1992) explains these findings in terms of younger people using predominantly negative stereotypes and misinformation about older people which surrounds them in the wider society.

In an attempt to reverse society's negative views of older people a

number of initiatives have been introduced to improve the attitudes of young people towards ageing. For example, schools have introduced activities whereby students come in contact with healthy and active older people living in the community, and several studies have employed a pre-post test methodology to gauge the change in children's attitudes after some form of interaction with older people (Smith and Mack 1993). The effectiveness of these studies in improving the students' attitudes and knowledge levels have been contradictory. One study found that an eight-week counsellor-led guidance programme on ageing and older persons was effective in creating a more positive attitude towards older people and ageing with third-grade students (Rich *et al.* 1983). Other similar studies which examine the influence of intergenerational interaction and used education programmes, which included diverse contact forums such as dances, songs, storytelling and pairing of students with older adults for discussion, have reported only slightly positive increases in attitude and knowledge measures (Berkson and Griggs 1986; Dellmann-Jenkins *et al.* 1991), while one study reported a negative change (Corbin *et al.* 1987).

This study investigates first, the effect of an education intervention on knowledge about and attitudes to ageing in secondary school students, and secondly the influence of a number of variables (gender, contact with grandparents, ethnic and socioeconomic background) on knowledge about and attitudes to ageing in secondary school students.

Method

Participants

The sample for this study was drawn from six schools in the Melbourne Metropolitan area, Australia. Three state schools and three private schools were chosen to ensure a wide spread of socio-economic background of the participants. The state schools and two of the private schools were co-educational. The remaining school was a single-sex girls school. Two schools were in an industrial area, two in a modern residential suburb and two were near the city centre. Schools were contacted by a letter to the Principal requesting permission to visit the schools and survey the students, and to gain the cooperation of the teaching staff. The sample was surveyed twice, before and after an intervention designed to increase students' knowledge of ageing. The sample size of pre-intervention was 155, and at post-intervention was 129.

Materials

A questionnaire was designed to assess knowledge about and attitudes toward ageing. It also included socio-demographic questions, including ethnic background and socio-economic background. The amount of contact students had with their grandparents was also measured. The questionnaire included a series of 30 questions based on the Palmore Facts on Aging Quiz (FAQ), using some of Luszcz's amendments for Australian students (Palmore 1977; Luszcz 1982). The students were asked to respond to the FAQ by deciding whether the given statements were true or false.

Design and procedure

The study investigates the effect of an educational intervention programme, entitled 'Adulthood to Old Age', on the attitudes of students aged 17 to 18 years (year 12) toward ageing. A quasi experimental pre-test post-test design was used. The effect of the intervention programme was measured through questionnaires which assessed knowledge and attitudes towards ageing and older people before and after the intervention. The intervention was designed to increase the knowledge of students about the ageing process in terms of biological and psychological changes associated with growing older and the social determinants of ageing. The curriculum which formed the intervention was taught over nine sessions of one hour's duration. The intervention occurred in the last three weeks of the school year.

It is important to note that, while the 'intervention' may have been conceptualised as a single entity, in fact there were six different interventions conducted at the participating schools. Each intervention involved a different teacher and a different social milieu. To disentangle these dimensions would have involved a design and participant number of several orders greater than the already large number of participants in the present study. Thus the research design did not include such parameters. However, in order to investigate the influence of the intervention environment, the variable 'school' was included in the analyses.

The questionnaire was administered to the students at the start of the course by one of the authors. The questionnaire was completed in the classroom in the presence of the researcher and member of the teaching staff. On average the questionnaire took the students about 20 minutes to complete. The questionnaire was administered a second time by one of the authors in the last teaching week of the semester before the

examinations and after the completion of the intervention. The scheduling of the post-intervention questionnaire had to be arranged at a time which was convenient to the schools.

Scoring of the questionnaire

The variable 'contact with grandparents' was formed by allotting scores to reported contact with grandparents. For each grandparent seen the scores ranged from 0 to 4 reflecting increasing contact. Given that each student could have up to four grandparents, the contact score ranged from 0 to 16. The socio-economic background of the students was measured by scoring the occupations of the parents according to the Status Scores for Occupations prepared by the Australian National University (1996). This scale ranged from 1 (high socio-economic background) to 17 (low socio-economic background).

Ninety-five per cent of the students were born in Australia. As a result, the birth places of the grandparents were examined to establish an ethnic-background variable. It was possible to divide the sample into four groups, consisting of those grandparents born in Australia and New Zealand, those born in Northern Europe (predominantly the United Kingdom and Holland), those born in Mediterranean countries, and those born in Asia.

The dependent variables in this study are knowledge about ageing and attitudes toward ageing as measured by the FAQ (Palmore 1977, 1988; Luszc 1982). Three dependent variables were constructed to assess knowledge about ageing, and three to assess attitudes toward ageing.

The first variable, the total of pre-intervention correct answers, was the number of correct answers given by each student to the pre-intervention questionnaire. The second variable was the number of correct answers to the post-intervention questionnaire. The maximum possible number of correct answers was 30 for each administration of the questionnaire. The third variable, was the difference in the number of correct answers given by each student pre- and post-intervention. As suggested by Palmore (1988), if any questions were not answered they were treated as wrong answers when calculating these variables.

The FAQ is also designed to measure attitudes towards ageing. A pro-aged bias score is obtained by respondents who answer certain questions incorrectly, and an anti-aged bias if they answer certain other questions incorrectly (see Table 2). The pro-aged score is the percentage of the positive bias items marked wrong and the anti-aged score is the percentage of the negative bias items marked wrong. The

TABLE 1. Sex distribution of participants at pre- and post-intervention

Data Collection Time	Male	Female	Totals
Pre-intervention	34 (21.9)	121 (78.1)	155 (100.0)
Post-intervention	30 (23.3)	99 (76.7)	129 (100.0)

final attitude scores used in the analyses were calculated by subtracting the anti-aged score from the pro-aged bias score at pre-intervention and post-intervention respectively. A third change in attitude score was calculated by subtracting the pre-intervention score from the post-intervention score. Any questions which the student did not answer were treated as correct when computing this variable because the student did not show either positive or negative bias. Palmore advises that for practical purposes, any individual's attitudes score in the range of one pro-aged item, is probably not significantly different from zero and should be considered a neutral score (Palmore 1977).

Results

Table 1 shows the sex distribution of the sample at pre- and post-intervention. A total of 155 students completed the first questionnaire and 129 students the second, giving a drop-out rate of 16 per cent. Drop out was due to several factors, including the proximity of the final examinations and a number of students who were taking time off school to complete their work. Others had left school as jobs and apprenticeships had become available and some were off school with illness. These factors were outside the control of the researchers as the scheduling of the intervention programme in the curriculum was set by the school authorities.

Table 2 shows the pre- and post-intervention percentage of correct scores for each question of the FAQ. The questions are arranged so that the first pair of statements are true; the second pair are false. This pattern continues throughout the questionnaire ending with a pair of true statements. Errors on the items marked + and - in Table 2 indicate positive and negative bias towards ageing respectively.

The most common misconception held by the students, before the intervention, was that medical practitioners tend to give high priority to older people (88 per cent said this was true), when in fact geriatric practice is assigned a low status among health professionals. The three other most common misconceptions found were that over 15 per cent

TABLE 2. *The pre and post-intervention scores for the FAQ*

	Question	Correct Answers (%)		Bias	Correct Answer
		Pre-intervention	Post-intervention		
1	All five senses tend to decline in old age	55	58	+	T
2	Lung capacity tends to decline in old age	68	68	+	T
3	The majority of old people are senile	93	91	-	F
4	The majority of old people have no interest in or capacity for sexual relations	79	87	-	F
5	Physical strength tends to decline in old age	95	92	+	T
6	Old people usually take longer to learn something new	48	49	+	T
7	The majority of old people feel miserable most of the time	94	93	-	F
8	At least one tenth of the aged are living in long stay institutions	21	21	-	F
9	Aged drivers have fewer accidents per person than drivers under 65	44	55	-	T
10	80% of the aged are healthy enough to carry out their normal activities	75	84	-	T
11	Most older workers cannot work as effectively as younger workers	45	53	-	F
12	Most old people are set in their ways and unable to change	37	45	-	F
13	The reaction time of most old people tends to be slower than the reaction time of younger people	86	91	+	T
14	The majority of old people are seldom bored	35	37	-	T
15	It is almost impossible for most old people to learn anything new	95	93	+	F
16	In general old people are pretty much alike	76	82		F
17	Older workers have fewer accidents than younger people	34	32	-	T
18	Most medical practitioners tend to give low priority to the elderly	12	13		T
19	The majority of old people are socially isolated and lonely	71	73	-	F
20	Over 15% of the population of this country is now aged 65 or more	19	8		F

TABLE 2. (cont.)

	Question	Correct Answers (%)		Bias	Correct Answer
		Pre-intervention	Post-intervention		
21	The majority of old people are working or would like to have some work to do (including volunteer work)	87	94		T
22	The majority of old people are seldom irritated or angry	23	25		T
23	The majority of old people have incomes below the poverty level	34	65	–	F
24	Older people tend to become more religious	48	46		F
25	The health and socioeconomic status of older people (65+) compared with younger people in the year 2000 will probably be about the same	35	40	–	T
26	The proportion of widowed is decreasing among the aged	52	54		T
27	The majority of the aged live alone	45	48	–	F
28	When the last child leaves home the majority of parents have serious problems adjusting to their 'empty nests'	25	27	–	F
29	Supplemental social security benefits guarantee a minimum income for the needy aged	74	80		T
30	More older people have chronic illnesses that limit their activity than younger people	81	72	+	T

of the population was over 65 years of age (81 per cent said this statement was true), that at least one-tenth of older people live in long-stay institutions (79 per cent said this statement was true) and that the majority of older people are often irritated or angry (77 per cent said this statement was true). Interestingly, young people in this study held a number of misconceptions about the abilities of older people, often portraying them as lacking characteristics which are valued in youth culture. These included views that older people were: bad drivers, not 'cool' (*e.g.* set in their ways, boring, unable to change), and not reliable workers. Comparing the percentage of correct answers at pre- and post-intervention it was evident that the intervention had little impact on the misconceptions of students about ageing.

TABLE 3. *Mean number of correct answers to FAQ (knowledge scores) for each school at pre- and post-intervention*

School	Pre-intervention		Post-intervention	
	n	M	n	M
1	31	18.3	24	18.4
2	24	16.2	22	16.9
3	9	15.8	5	15.4
4	23	16.9	21	19.5
5	17	16.8	14	17.1
6	51	16.8	43	17.6
Totals	155	17.0	129	17.6

Knowledge of ageing data

Table 3 shows the mean number of correct answers to the FAQ at pre-intervention and post-intervention for each school. The mean number of correct answers pre-intervention was 17.0 out of a possible score of 30, with a standard deviation of 2.6. The mean number of correct answers ranged from 15.8 to 18.3 across the schools. This finding is worth highlighting because it reveals the relatively low knowledge level of young people about older people. The difference observed between schools in terms of ageing knowledge at pre-intervention could have been the result of differing sex ratios between the schools. However, a two-way non-orthogonal analysis of variance between schools and sexes found that the differences were due to schools ($F_{(5,148)} = 2.51, p < .05$) and not gender.

A total of 129 students completed the post-intervention administration of the questionnaire. A comparison of mean correct scores at pre- and post-intervention showed that those completing the post-intervention questionnaire can be considered a random sample of the total group. The mean number of correct answers at post-intervention was 17.6 with a standard deviation of 2.6. A paired t-test revealed that knowledge scores had increased following the intervention ($t = 2.66, p < .01$). It must be pointed out, however, that while the change of knowledge level is statistically significant, the change in the number of items scored correctly after the intervention programme, in real knowledge terms, is at best an increase in only one item. For a number of students their knowledge scores decreased after the intervention.

A stepwise multiple regression analysis was performed using the number of correct answers to the FAQ at pre-intervention as the dependent variable and all other variables (school, sex, contact with grandparents, ethnic background and socio-economic background) as

TABLE 4. Mean attitude scores from the FAQ for each school at pre- and post-intervention

School	Pre-intervention		Post-intervention	
	n	M	n	M
1	31	-15.6	24	-16.1
2	24	-27.8	22	-27.8
3	9	-28.1	5	-6.4
4	23	-6.8	21	0.4
5	17	-29.1	14	-22.3
6	51	-18.8	43	-21.5
Totals	155	-19.5	129	-17.5

the independent variables. This analysis showed that the school, contact with grandparents and the ethnic background of the students had an impact on the number of correct answers given by the students prior to the intervention. The number of correct answers increased 0.18 (± 0.08) for each unit in contact with grandparents and decreased by 0.40 (± 0.20) for each change in ethnic background. In other words, knowledge about ageing increased as a result of frequent contact with grandparents. Students with an Australian or New Zealand background had slightly more knowledge about the ageing process, while those of Asian background had least ($F_{(1,144)} = 3.87, p < 0.05$).

A stepwise multiple regression analysis was performed using change in knowledge as the dependent variable, and all the other variables (sex, school, contact with grandparents, ethnic background and socio-economic background) as the independent variables. The results indicated that socio-economic background of the students had a significant effect on change in knowledge ($F_{(1,123)} = 5.41, p < .05$). Knowledge increased by an average of 0.21 (± 0.08) for each decrease in socio-economic background scale. Students from a higher socio-economic background improved their knowledge scores more than those who were less financially privileged.

Attitudes to ageing data

Table 4 shows the mean attitude scores from the FAQ for each school at pre- and post-intervention. Analysis of variance showed that there were significant differences between schools ($F_{(5,149)} = 2.62, p < 0.05$) in terms of attitudes to ageing at pre-intervention. Students in school 4 held the least negative attitudes towards ageing. Schools 2, 3 and 5 were the most negative. Analysis of variance also showed that gender made a statistically significant impact on attitudes held at pre-

intervention ($F_{(1,153)} = 5.30, p < .05$), with female students holding less negative attitudes than males.

There was no difference between the ethnic background groups in terms of attitudes to ageing. Contact with grandparents also had no effect on the students' attitudes towards older people.

Again analyses were run to examine whether there were significant differences in pre-intervention attitudes between the total sample who completed the pre-intervention questionnaire and those who also completed the post-intervention questionnaire. None of the differences were found to be statistically significant and the reduced sample of those completing the second questionnaire may in this regard be taken as a random sample of the total pre-intervention group.

The two independent variables, school and sex, which had shown statistically significant effects on the pre-intervention attitude scores were used in a two-way non-orthogonal analysis of variance using the post-intervention attitude score as the dependent variable, so that their effects could be examined independently. This analysis showed that together they were statistically significant but, while schools maintained statistically significant differences ($F_{(5,122)} = 3.58, p < .05$), sex on its own was not statistically significant. A paired t-test showed that the attitude score had not changed between pre-intervention and post-intervention ($t = .81, n.s.$). These results suggest that the intervention had no effect on the attitudes of students toward older people.

A multiple regression analysis was performed using the change in attitude score (post-intervention attitude score minus the pre-intervention attitude score) as the dependent variable and all other variables (sex, school, contact with grandparents, ethnic background and socio-economic background) as the independent variables. None of the independent variables had a significant effect on the change in attitude score.

Conclusion

This study reveals that students in secondary schools generally possess low knowledge about older people, and hold a number of alarming misconceptions about growing old; these misconceptions were not changed as a result of the knowledge gained through a course which included information about ageing. Using Palmore's Facts on Aging Quiz (FAQ) the average knowledge score of 17.0 at pre-intervention was much lower than expected, and represents only two correct answers above the average which might have been expected by chance.

However, the pre-test knowledge means of the schools differed significantly and this difference was caused by the effect of the school. Female students were also slightly more knowledgeable than their male counterparts. The closer the contact with grandparents the greater the knowledge about ageing. The post-test administration of the FAQ revealed that the intervention did not increase in real terms the overall level of knowledge about older people and ageing. The results also revealed that students generally held negative attitudes towards older people, and that they continued to hold such negative attitudes after the intervention programme, although the attitudes of male students were more negative than female students.

Two limitations of the study are worth mentioning here. First, it is possible that more positive-attitude results might have been obtained if the intervention programme had been offered earlier in the school curriculum, and had comprised a more integrated approach. This could have included examples of 'successful' interventions, using drama, films, art and music throughout the education programme supported by relevant learning resources for younger people. This could have provided the students with greater opportunities to reflect upon and change their existing assumptions about older people. Second, this study measured attitudes rather than behaviour. It is possible that the research instrument used may have been capturing the stereotyped views held about older people. As a result the negative attitudes findings may be partly explained by the focus of the FAQ and related instruments on attitudes and knowledge about older people in general rather than individuals' personal experiences of or about ageing; that is, they measure ignorance and therefore may overestimate the prevalence of negative attitudes. Further studies need to examine the utility of other scales which measure attitudes as a check against the Palmore FAQ test, and which use intervention programmes (*e.g.* exposure to life histories with direct one-to-one interaction between an older person and students) that more directly capture actual behavioural changes towards older people. For example, the 'Confronting Ageing' approach described by Biggs (1992) can be used to challenge some of the views younger people construct about older people.

This study supports the results of similar studies which have found that content teaching and learning may not be the most effective way to change young people's attitudes towards older people (Thomas and Hallebone 1996). This suggests that we need to examine more carefully the limitations of traditional classroom teaching curricula. Research has clearly shown that educational programmes which include an

experiential component such as intergenerational contact are more successful in promoting positive attitudes towards older people. That direct contact with older people is important to young people's perceptions about older people is supported by the finding that those who had more contact with their grandparents possessed more knowledge and positive attitudes than their counterparts. A recommendation emerging from this study is that any programme aimed at teaching students about the ageing process must have this experiential interactive component with older people built into the curriculum. It has been shown that attitudes on ageing are formed as early as eight years of age and that the stereotypes formed by that age are generally negative (Rodeheaver 1990). There is good evidence to suggest that such a programme should be taught at an earlier stage in the school career, perhaps as early as primary school, and that the focus should be on the contributions of older people in society rather than simply biological ageing.

A number of obstacles were reported by the teachers involved with the ageing education programme, and these are worth discussing here for they raise important implications for developing more effective teaching programmes. Most of the teachers expressed reservations about the position of the intervention programme in relation to the whole final year syllabus. 'Adulthood to Old Age' was taught during the last three weeks of the school year, a time when academic pressures, such as preparing for the final year examination, were foremost in the minds of the students. Yet the final examination paper contained only one question on the subject and that particular question was not relevant to people over 65 years of age. There is a real danger that when a course on the total lifespan is taught and the ageing component is placed at the end and given low priority (*e.g.* in terms of an exam question) that it may reinforce the view that society does not attach as much significance to older people and associates decline and uselessness with growing old.

Another issue is the obvious lack of teacher training in gerontology. All teaching staff held a bachelor of education or equivalent qualification but none had any specific in-service training in gerontological education. The staff also complained about locating suitable teaching material in gerontology for secondary school students, and as a result focused on the physiology of ageing, where material was more readily available. Not surprisingly we found that, as a result of this lack of training, the attitudes of the teachers towards older people varied considerably. Staff also completed the FAQ and the results show that three of them displayed positive attitudes, four were neither

positive nor negative, while three were negative. This suggests the urgent need to expand teachers' knowledge on ageing, and to go beyond the biological notions of physical change. At present the curriculum of the present intervention programme is heavily focused on the biological aspects of ageing, possibly because information is more readily available on this subject. There is an urgent need to teach them about concepts which gerontologists have come to take for granted, such as 'healthy and successful ageing', and to provide educators with knowledge about appropriate teaching material and strategies which are effective in changing attitudes towards older people and growing old. This study suggests that teachers would benefit from a conference on learning and teaching about older people with an emphasis on providing up-to-date information on the social, cultural, psychological and physiological aspects of ageing, and on how to disseminate this knowledge in ways which are relevant and appropriate for younger people.

Unless we design education programmes which have the desired effect of first, improving general knowledge and attitudes about growing old, and secondly, narrowing the intergenerational gap between youth culture and older people, ageism will be made much more difficult to overcome. It needs to be said, however, that the school is not the only educational agent in the fight against ageism. For example, the assumptions and beliefs of the parents about growing old need to be taken into account as part of how knowledge about older people is socially reproduced in the school environment. The finding that the socio-economic background of the students played a part in their ability to increase their knowledge of ageing, despite the school and teacher, provides some support for the importance of environmental influences. Furthermore, we cannot assume that older people are passive victims in the production of ageist behaviour and stereotyped attitudes.

A word of caution needs to be said about the intervention programme used in this study. Intervention programmes used in studies of change in the knowledge and attitudes of younger people towards older people fall into two categories. One group of studies relies on direct instruction about ageing issues; the other focuses on direct interactional experience with older people as an effective means of attitude change. In reality young people form their perceptions about older adults as a result of exposure to information and life experiences, and intervention studies which incorporate the interplay between these two social processes are more likely to yield a better understanding of the complex processes which underpin how children form their attitudes towards growing old.

Such studies may be more likely to show us how a diversity of programmes can be identified and developed and used in changing young people's inference processes about old age. At a conceptual level we need to acknowledge that while such programmes may have some utility in changing individual attitudes, either positively or negatively, their overall impact on changing attitudes will be limited without major complementary changes taken at a broader social level. Further studies need also to investigate older people's attitudes and behaviour towards their own ageing, and to examine the cultural and social process by which older and younger people accept or reject ageist attitudes.

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