

Changing student teachers' attitudes towards disability and inclusion

JENNIFER CAMPBELL, LINDA GILMORE

Centre for Innovation in Education, Queensland University of Technology, Australia

MONICA CUSKELLY

Fred and Eleanor Schonell Special Education Research Centre

Graduate School of Education, University of Queensland, Australia

Abstract

A total of 274 preservice teacher education students were surveyed at the beginning and end of a one-semester unit on Human Development and Education which combined formal instruction with structured fieldwork experiences. The latter included interviewing community members regarding their knowledge of Down syndrome and opinions on inclusive education, and writing an associated report. At the end of semester, not only had student teachers acquired more accurate knowledge of Down syndrome, together with more positive attitudes towards the inclusive education of children with Down syndrome, but their attitudes towards disability in general had also changed, and they reported greater ease when interacting with people with disabilities. The study illustrated the value of combining information-based instruction with structured fieldwork experiences in changing attitudes towards disability and inclusion. It also demonstrated that raising awareness of one disability may lead to changes in attitudes towards disability in general.

Influenced by Australian and international anti-discrimination legislation (e.g., Commonwealth of Australia, 1992; US Congress, 1997), Australian national and state educational authorities now advocate for the inclusion of children with special needs within regular classrooms. Such advocacy alone, however, cannot ensure that the policy is favourably accepted by those most responsible for its effective implementation, namely, classroom teachers. It has long been accepted that teachers' attitudes and expectations impact upon their students' educational outcomes (Good & Brophy, 1997), and this is of particular concern where teachers hold less than positive attitudes towards individuals with a disability or the educational policy of inclusion (see, for example, Buell, Hallam, Gamel-McCormick & Scheer, 1999; Forlin, Douglas & Hattie, 1996; Murphy, 1996).

Historically, teachers have not been favourably disposed to the policy of increased inclusion of children with special needs within the regular classroom (Center & Ward, 1987; Forlin et al., 1996). Their concerns include the amount of individualised time children with special needs might require, possibly to the detriment of other students; apprehension as to the quality of work produced by children with special needs; lack of adequate support services; and teachers' concerns about deficiencies in their own training and preparation in the skills required to support inclusive educational practice (Bender, Vial & Scott, 1995; Tait & Purdie, 2000).

Teachers' attitudes are additionally influenced by the level of disability they are asked to accommodate within their classroom. Center and Ward (1987) found that while the majority of teachers expressed a generalised agreement with the policy of inclusion, when asked specifically about their own willingness to include students with particular disabilities within their classrooms, they were only willing to accept the inclusion of students with mild physical disabilities. They were reluctant to include students with more severe physical disabilities, or students with intellectual disabilities. Such results, indicating that teacher support for inclusion varied with the severity of the disability, have been consistently reported in research studies in the United States (Rainforth, 2000; Scruggs & Mastropieri, 1996), and have been replicated by Forlin et al. (1996) with educators in Western Australia.

These attitudes to inclusion appear to have important correlates with actual classroom practice, although the direction of causality is not clear. Buell et al. (1999) reported a positive relationship between teachers' attitudes towards inclusion and their belief that they could influence the educational outcomes of children with special needs. Teachers with more positive views of inclusion had more confidence in their ability to support students in inclusive settings, and to adapt classroom materials and procedures to accommodate their needs. In all areas assessed, general classroom teachers rated their self-efficacy, ability, and understanding, in relation to inclusive practice, to be lower than did special education teachers, and expressed a greater need for related inservice training and increased support and resources. Similarly, Bender et al. (1995) found that teachers with more negative attitudes towards inclusion reported much less frequent use of instructional strategies known to facilitate the effective inclusion of children with learning disabilities. No relationship was found between attitudes towards inclusion and teachers' perceptions of their own efficacy in the general classroom. There are teachers with high self-efficacy who are not favourably disposed to inclusive practice. This emphasises the need to intervene to change teachers' attitudes to inclusion and their willingness to use associated effective instructional strategies.

While teachers' attitudes towards inclusion are clearly influential in the effective implementation of inclusive policy within the classroom, a related body of research has investigated teachers' attitudes towards disability per se, since these may affect teachers' attitudes towards inclusion, and the effectiveness of their inclusive practices. Several important research studies in

Australia have used the Interaction with Disabled Persons Scale (IDP) (Gething & Wheeler, 1992) in order to investigate attitudes towards disability of various professionals including preservice teachers (see, for example, Forlin, Tait, Carroll & Jobling, 1999b; Tait & Purdie, 2000). The research literature on teachers' attitudes towards disability suggests that negative attitudes "lead to low expectations of a person with a disability" (Forlin et al., 1999b, p. 209) which in turn could lead to reduced learning opportunities, beginning a cycle of impaired performance and further lowered expectations, both by the teacher and the child. Consequently, Tait and Purdie (2000) argued the importance of preservice teachers developing positive attitudes towards disability early in their professional development.

With this objective in mind, a number of studies have examined ways of promoting more positive attitudes in preservice teachers. There is general agreement that traditional university information-based courses, designed to prepare teachers to work with children with special needs, while increasing knowledge, have little impact on attitudes towards disability (Forlin et al., 1999b; Hastings, Hewes, Lock & Witting, 1996; Tait & Purdie, 2000). Nor does direct contact with people with disabilities necessarily lead to favourable changes in attitude (Rees, Spreen & Harnadek, 1991), although in general, level of contact has emerged as a significant factor in determining positive attitudes towards disability (Forlin, Fogarty & Carroll, 1999a; Gregory, 1997; Hastings et al., 1996). Several studies have indicated that the most effective way of altering attitudes in a favourable direction is to combine formal instruction either with structured and direct contact with people with disabilities (Ford, Pugach & Otis-Wilborn, 2001; Mayhew, 1994; Rees et al., 1991; Westwood, 1984), or with some other simulation or role playing activities that provide for more experiential learning (Forlin et al., 1999b; Pernice & Lys, 1996).

The present study was designed to explore additional methods by which student teachers' attitudes towards disability and inclusive educational practice could be favourably modified through university programmes which combine formal instruction with experiential learning activities. In particular, it investigated whether requiring students to explore one area of disability in some depth, through study and associated fieldwork activities, would lead not only to changes in knowledge about that particular disability, and more favourable attitudes towards inclusive educational practice for such children, but also to changes in student teachers' attitudes towards disability in general. To explore this question, Down syndrome was chosen as the disability for focus because previous research (Wishart & Manning, 1996) has demonstrated that student teachers hold a number of misconceptions about this disorder and its developmental consequences.

Method

Participants

A total of 274 preservice education students, at a large Australian university, participated in the present study. Students were enrolled in the first year of either a 4 year Bachelor of Education, or 2 year Graduate Bachelor of Education course, and were studying either early childhood, primary or secondary teacher education.

Instruments

A questionnaire based on one used by Wishart & Manning (1996) was constructed to investigate knowledge of Down syndrome, and attitudes towards inclusive education for children with Down syndrome. A copy of the instrument is available from the second author, and Australian norms are reported in Gilmore, Campbell & Cuskelly (2003). Items included questions on the cause and developmental outcomes of Down syndrome. Students were asked to nominate the stage at which the average child with Down syndrome would likely achieve basic childhood skills, such as toilet training, walking, understanding simple language, and early academic achievements such as basic number skills and ability to read simple words. For each developmental milestone, students were given a choice of five alternatives: pre-school, lower primary, upper primary, postprimary and never.

Stereotypical views of the personality of children with Down syndrome were assessed by asking students to compare the average child with Down syndrome, with typically developing children, on a set of personality characteristics such as "affectionate", "placid", "aggressive" and "unresponsive". A further set of questions related to views on the education of children with Down syndrome. Respondents were asked to rate on a 4-point scale (from "very beneficial" to "very detrimental") the impact of including a child with Down syndrome within a regular primary classroom. They were asked for separate ratings for the educational, social and emotional impact of such inclusion, both for the child with Down syndrome, and for the other children in the class. Respondents' opinions as to the optimal educational provision for the average child with Down syndrome were also canvassed.

In addition, the 20-item Likert scale, Interaction with Disabled Persons Scale (IDP) (Gething & Wheeler, 1992), was included to measure attitudes towards disability in general. Each item was rated on a 5-point scale (from "strongly agree" to "strongly disagree"). Appropriate levels of reliability and validity have been established for this scale. Gething (1991) reported the results of several test-retest reliability assessments, which included reliability coefficients of over 0.8 for periods of 1 or 2 weeks, and 0.71 over a 6 month period. High internal consistency has also been repeatedly demonstrated, with Gething (1991) documenting the results from 15 such assessments, where alpha coefficients ranged from 0.74 to 0.86. Construct validity for the IDP Scale has been further established through factor analysis of IDP scores on a number of occasions, in which six factor clusters emerged consistently over a variety of samples (Gething, 1991). More recently, Forlin et al. (1999a) have also identified the following six factors with a large sample of preservice teachers. "Discomfort" relates to the level of discomfort experienced in social interactions with people with disabilities. "Sympathy" measures the degree of sympathy for those with disabilities. "Uncertainty" encapsulates feelings of not knowing how to act with people with disabilities, while "fear" addresses personal fear of having a disability. "Coping" refers to being able to relate normally to people with a disability without being overwhelmed by the disability, and "vulnerability" relates to feelings as to how one would personally respond to having a disability.

Procedure

Students completed the above questionnaires during the first tutorial for a core unit on Human Development and Education.

During the 13 week semester, students were provided with formal instruction (a 1 hour lecture and a 2 hour tutorial per week) on human development. Throughout the study of typical developmental processes, the unit incorporated a strong focus on individual differences and inclusive education, and provided specific information about atypical development and disability. In addition to formal instruction, students were required to undertake fieldwork that involved interviewing 2 members of the community, using the above questionnaires, and writing a short (approximately 600-word) fieldwork report. Answers to questionnaire items were never directly discussed in class, and Down syndrome was only reviewed in lectures as one of a number of disabilities. However, students were given Wishart (1998) and Wishart & Manning (1996) as references to support their data analysis and report writing, and in their reports, students were asked to analyse the accuracy of their respondents' knowledge of Down syndrome, and reflect on their respondents' views regarding educational placement for children with Down syndrome, making explicit referenced links to the academic research literature. Students were not asked to reflect on responses to the IDP, and at no point was information on the structure and interpretation of this scale given to students. In the last tutorial for the subject, at the end of a 13 week semester, and after completion of the fieldwork task, students were asked to complete the same questionnaires for the second time. This was completely separate from any assessment work, and students were assured it would not be marked and would have no bearing on their grades. A total of 274 matched pairs of questionnaires were obtained from students who attended both the first and last tutorials.

Results

Knowledge of Down syndrome

Nature of Down syndrome

At the start of the semester, 80.6% of students were able to identify, from a choice of five alternatives, that Down syndrome was primarily a chromosomal disorder, indicating general, accurate initial knowledge. Significant further improvement in this figure was apparent by the end of semester, with 97.4% now nominating a chromosomal disorder (Wilcoxon signed ranks test, $z = -6.640$, $p < 0.001$).

Stereotypical perceptions of personality

At the start of the semester, student teachers held stereotypical views of children with Down syndrome. When asked to compare the average child with Down syndrome with other children, 75% thought that they were more "affectionate" and 72% thought they were more "friendly". Negative stereotypes were less frequently endorsed (for instance, 28% asserted that children with Down syndrome were more "aggressive"), although 50% thought children with Down syndrome were more "moody". By the end of the semester these figures were considerably reduced. A paired t-test comparing the total number of positive stereotypes each student endorsed revealed a significant difference between the beginning and end of the semester ($t = 6.447$, $df = 217$, $p < 0.001$). A second paired t-test comparing the total number of negative stereotypes endorsed by each student at the beginning as opposed to the end of semester was similarly significant ($t = 4.282$, $df = 208$, $p < 0.001$).

Developmental milestones

Student teachers, at the beginning of the semester, tended to underestimate the potential for development of children with Down syndrome. Only 46.6% nominated "pre-school" as the likely period at which toilet training would be achieved, 39.9% nominated "pre-school" for "using simple language" and 45.4% nominated "lower primary" for "simple writing". All of these represent the correct average age according to Wishart & Manning (1996). Paired t-tests comparing the stage of development nominated, for each of nine developmental milestones, by students at the beginning and end of the semester, revealed a significantly more positive, but still realistic, expectation by the end of the semester for every comparison (all comparisons were significant at $p < 0.001$, except for "writing spontaneously from own experience": $t = 2.476$, $df = 262$, $p < 0.01$).

Attitudes towards inclusion of children with Down syndrome

At the beginning of the semester, 28% of the sample thought that inclusion would be detrimental to the child with Down syndrome educationally, 25% thought it would be detrimental socially, and 38% thought it would be detrimental emotionally. Thirty-one percent thought it would be educationally detrimental to the other children in the class, although 93% and 89%, respectively, thought that it would be beneficial to the other children socially and emotionally. By the end of semester, students had a much more positive view of the benefits of inclusion, with 90% rating it as beneficial educationally, 95% socially, and 86% believing it to be beneficial emotionally for the child with Down syndrome. When students were given a total score, calculated by adding together their three separate scores for the educational, social and emotional benefits of inclusion for the child with Down syndrome, a paired t-test revealed a significant difference between students' scores at the beginning and end of the semester ($t = 9.932$, $df = 270$, $p < 0.001$).

A similar paired t-test for students' total scores for perceptions of the benefits of inclusion of a child with Down syndrome for the other children in the class also revealed a significant difference, with students' attitudes becoming more positive ($t = 4.752$, $df = 271$, $p < 0.001$).

Students' beliefs about the best educational setting for a child with Down syndrome also changed in a similar direction. At the beginning of the semester, 32% of students believed that the average child with Down syndrome would do better in a separate school for children with special needs. Forty percent nominated a regular primary classroom with younger children of similar developmental level, as the best educational setting, and only 15% believed that the average child with Down syndrome would do best in a regular primary classroom with children of the same age. By the end of the semester, students had revised their opinions. Twenty-nine percent now nominated a regular primary classroom with children of the same age, and only 15% believed a separate school was the most beneficial placement. Forty-seven percent nominated a regular primary classroom with younger children of similar developmental level.

Attitudes towards disability in general

A confirmatory factor analysis of the Interactions with Disabled Person's Scale (IDP) was conducted on the whole sample from the beginning of the semester, using LISREL 7 (version 7.17, Joreskog & Sorbom, 1991), to establish whether the six factor structure obtained by Forlin et al. (1999b) fitted the current data and could be used for subsequent data analysis. This analysis produced a goodness of fit index of 0.931, an adjusted goodness of fit index of 0.899, and a root mean square residual of 0.054. These findings supported use of this six factor model for data analysis in the current study. Students' scores on each of the six factors were calculated, and a repeated measures MANOVA compared their scores on each factor at the beginning and end of the semester. A significant multivariate result was obtained ($F(6, 248)=18.343, p<0.001$). Univariate tests revealed that by the end of the semester, students' attitudes towards disability had changed to showing significantly less "discomfort" ($F(1, 248)=4.244, p<0.04$), "sympathy" ($F(1, 248)=71.338, p<0.001$), "uncertainty" ($F(1, 248)=48.398, p<0.001$), "fear" ($F(1, 248)=10.272, p<0.002$), and "vulnerability" ($F(1, 248)=35.594, p<0.001$). In addition students showed significantly greater "coping" ($F(1, 248)=7.588, p<0.006$).

Discussion

This study was designed to investigate whether favourable changes in attitudes towards disability and inclusion could be fostered by combining formal instruction with structured fieldwork experiences. More particularly, it addressed the question of whether raising awareness of one disability (in this case Down syndrome), through integrated university study and fieldwork, could lead to changes not only to knowledge and attitudes regarding that particular disability, but also to attitudes towards disability in general. The findings were positive for both questions.

In the first instance, positive changes in knowledge and associated attitudes regarding Down syndrome were measured following the combined study and fieldwork. Student teachers' responses, prior to instruction, demonstrated the same misconceptions about children with Down syndrome as were found in Wishart and Manning's (1996) survey of UK trainee teachers. Student teachers in the current sample tended to endorse the same stereotypical views of children with Down syndrome, as being "affectionate" and "friendly", as were reported by Wishart and Manning. These stereotypes are counter to research which indicates that children with Down syndrome are as varied in their temperament as are typically developing children (see Ganiban, Wagner & Cicchetti, 1990; Gunn & Cuskelly, 1991). By the completion of their unit of study, however, the Australian student teachers' knowledge of Down syndrome had become more accurate and they had developed less stereotypical views, demonstrating a greater understanding of the individuality of each person with Down syndrome. Similarly, student teachers in both UK and Australian samples tended to underestimate the potential for development of children with Down syndrome, and overestimate the likely degree of learning disability. As Wishart (1998) and Wishart and Manning (1996) note, unduly pessimistic views regarding academic potential are likely to affect the value these prospective teachers place on education for children with Down syndrome, and their potential for inclusion within the regular classroom. This was borne out by the research findings. At the start of the semester, Australian student teachers' attitudes towards the benefits of inclusive educational practice for children with Down syndrome were very similar to those reported by Wishart and Manning (1996), with approximately one third of the students believing it to be detrimental and advocating a separate school for children with special needs as the optimum educational placement for children with Down syndrome. This is at variance with research findings which demonstrate that inclusion of children with Down syndrome is beneficial academically (Bochner, Outhred & Pieterse, 2001; Sloper, Cunningham, Turner & Knussen, 1990) and does not have negative social sequelae (Rietveld, 1988). By the completion of their unit of study, however, the current student teacher sample had developed more accurate and positive estimations regarding developmental milestones and academic achievements, and had also revised their opinions, in a more positive direction, as to the benefits of inclusive practice, both for the child with Down syndrome, and for the other children in the class.

The changes detailed above are not surprising, since there is general agreement that university information-based courses do lead to changes in knowledge (Forlin et al., 1999b; Hastings et al., 1996; Tait & Purdie, 2000). However, as Hastings et al. demonstrate, information-based courses do little to alter attitudes. It is therefore the changes in attitudes, found in the current study, that provide the most interesting result.

The positive changes in students' attitudes towards inclusion of children with Down syndrome could partially be explained by changes in students' knowledge regarding the likely developmental consequences of Down syndrome. By the end of semester, students had developed more positive (and accurate) views about the potential for development of children with Down syndrome, and hence, in line with findings from Center & Ward (1987), Forlin et al. (1996) and Scruggs and Mastropieri (1996), this should lead to a more accepting attitude towards inclusion of children with Down syndrome, as indeed was found. However, this may not be the only reason why students' attitudes towards inclusion changed. It has been argued that student teachers' attitudes towards inclusion are also related to their general attitudes towards disability (Tait & Purdie, 2000). In the present study, changes in attitudes towards inclusion were accompanied by changes in student teachers' attitudes towards disability in general (as measured by the IDP). It is of much greater importance to change attitudes towards inclusion as a result of becoming more at ease when interacting with people with disabilities, than to change attitudes towards inclusion as a result of perceiving the disability to be less of a barrier than originally thought.

Student teachers' scores on the IDP demonstrated that at the end of the semester compared to the start, they felt significantly greater coping, and significantly less discomfort, uncertainty, fear and vulnerability when interacting with people with disabilities. However, they also reported feeling less sympathy. A similar change in the "wrong" direction on the "sympathy" factor, after an educational programme, was reported by Tait and Purdie (2000). There is, however, in the literature, some confusion about the interpretation of this factor. For some researchers (Forlin et al., 1999a; MacLean & Gannon, 1995) the desire to help, indicated by some of the "sympathy" factor items, is seen as positive and desirable in professionals working with those with disabilities, while for the developers of the scale (Gething & Wheeler, 1992), very high scores on this factor indicated an overly "tragic" and ill at ease view of disability (a "succumbing orientation", p. 76) which is

less than helpful, and which tends to diminish as people become more comfortable when interacting with those with disabilities. Thus very high scores on this factor may reflect an unwarranted degree of unease, and overly low scores may indicate a lack of interest and concern. The reduction in "sympathy" scores after education, found by Tait and Purdie (2000) and the present study, may indicate a more desirable, relaxed approach to disability, while still retaining an interest in supporting people with disabilities. Clearly a more thorough investigation of this particular factor is necessary.

The present study has a number of limitations which suggest caution in interpreting the results. The first is that, through their course work during the semester, students may have become more aware of the social desirability of affirming positive attitudes both towards inclusive education for children with Down syndrome, and towards disability in general. As Kastner, Reppucci and Pezzoli (1979) point out, disability surveys tend to elicit responses biased towards socially or politically correct views. In the present study, however, the changes in attitudes towards disability found on the IDP were less likely to have been influenced by increased awareness, over the semester, of politically correct views, or by the desire to provide an improved outcome, since optimum responses to the IDP items are often not obvious. In addition, students were never asked to reflect on community members' responses to the IDP Scale. Nor did they do any reading, course work or hold discussions relating to the IDP Scale. Furthermore, the direction of changes on the "sympathy" factor, while making intuitive research sense, and confirming findings from a previous study (Tait & Purdie, 2000), suggests that students were not attempting to conform to presumed experimenter expectations when responding to the questionnaire.

Secondly, even if the observed changes over the semester are assumed to be an accurate reflection of attitudinal change, the one group pretest-posttest design restricts ability to assign direct causes to these changes. The students would have had a variety of learning experiences during the semester, in units other than the one reviewed here, which cumulatively could have contributed to positive attitude change. The findings, however, are nevertheless congruent with those of other research studies regarding the importance of structured, experiential learning activities, in addition to university information-based course work, in fostering attitude change regarding disability and inclusion. In previous studies this experiential learning has generally been provided through direct contact with children with disabilities (Mayhew, 1994; Pernice & Lys, 1996; Rees et al., 1991; Westwood, 1984). When this is hard to organise, in large units outside formal practicum arrangements, the current study suggests that fieldwork experiences in the general community, followed by tasks requiring reflection and integration of material, may also be beneficial.

Finally, while the changes in response observed on the Down syndrome questionnaire and the IDP suggest that raising awareness of one disability (in this case Down syndrome) could lead to changes in attitudes towards disability in general, it is also possible that these attitudinal changes may be transitory, and may not be maintained once these first year teacher education students are confronted with difficult classroom experiences with children with a range of behavioural and learning difficulties. The challenge is to educate future teachers in ways that promote and sustain understanding and acceptance of a range of disabilities, and provide them with the skills to support children with special needs in inclusive classroom settings.

Acknowledgements

We would like to thank the students who participated in this research, the tutors who helped with data collection, and our research assistant, Andrea McCrindle, for her exceptional contribution to data entry and analysis.

References

- Bender, W. N., Vial, C. O., & Scott, K. (1995). Teachers' attitudes toward increased mainstreaming: implementing effective instruction for students with learning disabilities. *Journal of Learning Disabilities*, 28(2), 87-94, 120.
- Bochner, S., Outhred, L., & Pieterse, M. (2001). A study of functional literacy skills in young adults with Down syndrome. *International Journal of Disability, Development and Education*, 48,67-90.
- Buell, M. J., Hallam, R., Gamel-McCormick, M., & Scheer, S. (1999). A survey of general and special education teachers' perceptions and inservice needs concerning inclusion. *International Journal of Disability, Development and Education*, 46(2), 143-156.
- Center, Y., & Ward, J. (1987). Teachers' attitudes towards the integration of disabled children into regular schools. *The Exceptional Child*, 34, 41-56.
- Commonwealth of Australia (1992). *Disability Discrimination Act*. Canberra, ACT: Australia Government Printer.
- Ford, A., Pugach, M. A., & Otis-Wilborn, A. (2001). Preparing general educators to work well with students who have disabilities: what's reasonable at the preservice level? *Learning Disability Quarterly*, 24(4), 275-285.
- Forlin, C., Douglas, G., & Hattie, J. (1996). Inclusive practices: How accepting are teachers? *International Journal of Disability, Development and Education*, 43(2), 119-133.
- Forlin, C., Fogarty, G., & Carroll, A. (1999a). Validation of the factor structure of the Interactions with Disabled Persons Scale. *Australian Journal of Psychology*, 51(1), 50-55.
- Forlin, C., Tait, K., Carroll, A., & Jobling, A. (1999b). Teacher education for diversity. *Queensland Journal of Educational Research*, 15(2), 207-225.
- Ganiban, J., Wagner, S., & Cicchetti, D. (1990). Temperament and Down syndrome. In D. Cicchetti & M. Beeghley (Eds.),

Children with Down syndrome (pp. 63-100). Cambridge: Cambridge University Press.

Gething, L. (1991). *Interaction with disabled persons scale*. Sydney: University of Sydney.

Gething, L., & Wheeler, B. (1992). The Interaction with Disabled Persons Scale: a new Australian instrument to measure attitudes towards people with disabilities. *Australian Journal of Psychology*, 44(2), 75-82.

Gilmore, L., Campbell, J., & Cuskelly, M. (2003). Developmental expectations, personality stereotypes, and attitudes towards inclusive education: community and teacher views of Down syndrome. *International Journal of Disability, Development and Education*, 50(1), 67-78.

Good, T. L., & Brophy, J. E. (1997). *Looking in classrooms*, 7e. New York: Longman. Gregory, D. (1997). Before and after the Americans with Disabilities Act: an analysis of attitude and knowledge of undergraduate music majors. *Journal of Music Therapy*, 24(2), 119-128.

Gunn, P., & Cuskelly, M. (1991). Down syndrome temperament: the stereotype at middle childhood and adolescence. *International Journal of Disability, Development and Education*, 38 (1), 59-70.

Hastings, R. P., Hewes, A., Lock, S., & Witting, A. (1996). Do special educational needs courses have any impact on student teachers' perceptions of children with severe learning difficulties? *British Journal of Special Education*, 23(3), 139-144.

Joreskog, K. G., & Sorbom, D. (1991). *MAC-LISREL 7.17*. Chicago: Scientific Software. Kastner, L. S., Reppucci, N. D., & Pezzoli, J. J. (1979). Assessing community attitudes toward mentally retarded persons. *American Journal of Mental Deficiency*, 84, 137-144.

MacLean, D., & Gannon, D. (1995). Measuring attitudes towards disabilities: the Interaction with Disabled Persons Scale revisited. *Journal of Social Behavior and Personality*, 10, 791-806.

Mayhew, J. (1994). Are preservice general educators being adequately prepared for inclusion? In D. Montgomery (Ed.), *Rural partnerships: working together*. Proceedings of the Annual National Conference of the American Council on Rural Special Education, Austin, TX. Murphy, D. M. (1996). Implications of inclusion for general and special education. *Elementary School Journal*, 96, 469-493.

Pernice, R., & Lys, K. (1996). Interventions for attitude change towards people with disabilities: how successful are they? *International Journal of Rehabilitation Research*, 19, 171-174.

Rainforth, B. (2000). Preparing teachers to educate students with severe disabilities in inclusive settings despite contextual constraints. *Journal of the Association for Persons with Severe Handicaps*, 25(2), 83-91.

Rees, L. M., Spreen, O., & Harnadek, M. (1991). Do attitudes towards persons with handicaps really shift over time? Comparison between 1975 and 1988. *Mental Retardation*, 29(2), 8186.

Rietveld, C. (1988). *Adjusting to school: eight children with Down syndrome*. In SET: Research Information for Teachers. Wellington: New Zealand Council for Educational Research.

Scruggs, T. E., & Mastropieri, M. A. (1996). Teacher perceptions of mainstreaming/inclusion, 1958-1995: a research synthesis. *Exceptional Children*, 63(1), 59-74.

Sloper, P., Cunningham, C., Turner, S., & Knussen, C. (1990). Factors related to the academic attainment of children with Down syndrome. *British Journal of Educational Psychology*, 60, 284-298.

Tait, K., & Purdie, N. (2000). Attitudes toward disability: teacher education for inclusive environments in an Australian university. *International Journal of Disability, Development and Education*, 47(1), 25-38.

Congress (1997). *Individuals with Disabilities Education Act Amendments, Public Law No. 105-117*. Washington, DC: US Government Printing Office.

Westwood, P. (1984). Attitude change in second-year teacher education students following an introductory special education course. *The South Pacific Journal of Teacher Education*, 12(2), 57-61.

Wishart, J. G. (1998). Development in children with Down Syndrome: facts, findings, the future. *International Journal of Disability, Development and Education*, 45(3), 343-363.

Wishart, J. G., & Manning, G. (1996). Trainee teachers' attitudes to inclusive education for children with Down's syndrome. *Journal of Intellectual Disability Research*, 40, 56-65.