Head, Hand and Heart: An Investigation of Attitude Change in Pre-service Teachers Towards Students with Disabilities.

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Abstract

This paper reports on a research project conducted over a period of five years, with final-year pre-service students at a small Australian Christian tertiary education college. The study examined the students' attitudes towards children with special needs, as measured before and after a mandatory special education course. This course focused on three aspects: the head, which constituted knowledge of characteristics of students with disabilities; the hand, which referred to knowledge of current research-based educational and supportive strategies matched to student needs; and the heart, which were attitudes of empathy, compassion, and support within a Christian framework. Strategies used by the lecturer to engender the attitude change revealed by the data are discussed.

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Students with disabilities (SWDs) have increasingly been included in regular (mainstream) classrooms with their peers over the last forty years in western educational contexts (Foreman & Arthur-Kelly, 2017). Throughout this time, various pieces of legislation have supported the inclusion movement, such as the ground-breaking Education for Handicapped Children Act of 1975 in the United States. Australian legislation to support inclusion followed later with the Disability Discrimination Act in 1992, and then the Australian Disability Standards for Education in 2005. Meanwhile, the Salamanca Statement of 1994, which was supported by representatives from over 90 countries under the auspices of UNESCO,

advocated inclusion as the best way to combat discrimination against people with disabilities.

In regular classrooms, teachers were initially very wary, even apprehensive, of having students with disabilities in their classrooms (Jenkinson, 2006). However, Australian universities began introducing pre-service subjects in special education in the 1990s, and McHatton and Parker (2013) noted that even short programs of special education at this level had a beneficial effect on teachers' attitudes. Avramidis, Bayliss, and Burden (2008) also found that professional development improved teachers' attitudes towards students with disabilities.

Nevertheless, international research studies are still reporting that many teachers have reservations about having students with disabilities in their classes and about their own efficacy to manage and educate them effectively (Able, Sreckovic, Schultz, Garwood, & Sherman, 2015). Interestingly, many of these teachers actually support the concept of inclusion, as Malki and Einat (2017) found, as long as they were not required to have SWDs in their own classes.

Vaz et al. (2015) explored teachers' attitudes towards inclusion and found that male teachers, teachers aged 55 and over, and teachers with low self-efficacy in teaching held more negative

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attitudes towards students with disabilities than other teachers in the study. However, those teachers who had undertaken training in disability studies held more positive attitudes. An earlier study conducted by Rice (2009) also found that generally, females were more supportive towards SWDs than males. Tindall, MacDonald, Carroll, and Moody (2015) investigated pre-service teachers' attitudes towards inclusion in Ireland and found that theory combined with practical experience led to more positive attitudes for their participants.

Given that teachers' attitudes and expectations towards students with disabilities are critical in obtaining successful outcomes for these students (McHatton & Parker, 2013), the importance of cultivating positive attitudes in pre-service teachers cannot be underestimated. The basis for attitudes is teachers' beliefs. Nelson and Guerra (2014) identify the importance of beliefs, noting that "beliefs are the deeply personal, individual truths one holds about physical and social reality and about self" (p. 70). Further, Nelson and Guerra go on to state that while these internal beliefs may even lack logic, they have a stronger influence on behavior than cognitive knowledge and can predict an individual's behavior. Thus, strategies to influence pre- service teachers' attitudes and beliefs need to be very effective to ensure their positive attitudes towards SWDs.

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Stephenson, O'Neill, and Carter (2009) investigated Australian University courses for pre-service teachers. The findings were disconcerting in that only 10% of the respondents reported that the content of the courses was evidence- or research-based, less than half the instructors had an active interest in special education, and few subjects aimed at promoting positive attitudes towards students with disabilities.

Current Status of Inclusion

The reality for many teachers is that educating students with disabilities is indeed very challenging. For example, the Association of Independent Schools in New South Wales (AISNS) (2017) states the following:

> A tension exists between the principle and practice, where teachers confront the difficulty of educating a wide range of students in the same setting, particularly at the point where they have to address the significant challenge of students whose behavior disrupts lessons (p. 8).

Further, the report also notes that the landscape of special education has changed:

> The striking feature of special needs education in all school sectors has been the great expansion in numbers of students with a disability or other learning difficulties enrolled in mainstream schools, reflecting a change in the nature of special education (p. 2).

Given this substantial increase in SWDs in regular classes, early research papers on inclusion likely reported success in included classrooms that were less diverse than today's classrooms. Effective teaching goes beyond having the knowledge of the curriculum or the skills of pedagogy; a critical factor is the teacher's attitude towards the students. "Teachers need to believe that they can have an impact on the learning of students with special needs" (Konza, 2008, p. 47). In fact, it is a positive attitude and principle-based commitment towards students with disabilities that will sustain the novice teacher through the challenges of their early teaching experience. Research has demonstrated that beginning teachers struggle to manage students with special needs in included classrooms (Konza, 2008). The cause of this difficulty may be due to a lack of self-efficacy, a lack of knowledge (the head) or requisite skills (the hands), or even negativity towards students with disabilities. Knowledge and skills can be taught, but what about attitudes (the heart)?

The symbolic trio of head, hand and heart has been used many times by a diverse range of people with a variety of meanings. It is the authors' contention that all three aspects, the head (knowledge), the hands (skills), and the heart (attitude) of a teacher are essential and

inseparable elements in the development of effective educational skills. Pre-service teachers need all three if they are to successfully educate students with disabilities.

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Sharma and Nuttal (2014) found that coursework and experience were both vital in producing the skills and attitudes necessary for effective inclusive education. These authors describe "direct contact" (p. 144) as critical in the development of positive attitudes towards SWD. However, Sokal and Sharma (2017) expressed a concern that practica needed to occur within high quality settings to ensure the transmission of positive attitudes and effective skills. High quality can be described as classrooms that are well-resourced, well-organized, and led by qualified, experienced teachers using research-based strategies.

Design and Method

Initially, the survey informing this research was designed by the lecturer to gain an understanding of the students' own perceived needs about inclusive teaching, as well as to gain feedback on its usefulness. However, it also became apparent that the survey was a potential source of information on pre-service students' attitudes about SWDs and how their attitudes changed, or not, over the course of a semester of instruction. Thus, the purpose of this study was to examine how pre-service students' attitudes toward inclusion changed while taking a special education course and to identify relevant features that may have led to this change. Data were gathered from courses offered over a period of eight years.

Ethics approval was sought and approved in order to intentionally monitor the attitudes of pre-service teachers undertaking a one-semester, final-year subject of special education at a small

Christian tertiary College in Australia. Australian mainstream classrooms often have a wide range of disabilities, which may include cognitive, behavioral, social-emotional, sensory, physical, and specific learning disabilities. Therefore, "students with disabilities" (SWD) in this study was defined as all students with special needs in mainstream classrooms.

At the beginning of each semester's study program, pre-service students were invited by the lecturer to fill out a mixed methods survey to determine their initial attitudes towards varying aspects of educational special needs, as well as their perceived confidence and self-efficacy towards educating and managing students with disabilities in an included classroom. The survey included quantitative components with a four-point Likert Scale, as well as qualitative questions with extended response opportunities. In the instructions, it was indicated that their responses were completely anonymous, apart from a code number to be used in matching their pre-survey ratings with their post-survey ratings, which were completed during the final lecture, for comparison purposes. In addition, the students were strongly urged to be honest in their responses rather than attempting to give politically correct responses.

Data Analysis

Individual responses were entered into an Excel spreadsheet. Altogether, 556 students filled out either the pre-survey, the post-survey, or both. Of the 556 students, 299 filled out both the pre-and post-surveys. Using SPSS, the data was analyzed using two-sample dependent t-tests to determine if there were differences on individual items from pre- to post-survey. Because a lower rating indicated more agreement with statements, the post-test means were subtracted from the pre-test means to determine the differences. The average of the differences was calculated for each item and the average difference was tested to see if it differed from zero. To adjust for the number of pair wise tests, Bonferroni correction was used to adjust the initial p-value of .05. The Bonferroni-adjusted p-value was .002.

In determining the size of the effect significance, Cohen's d was used. Effect sizes were calculated for the significant items. To account for the

correlations between the pre- and post- surveys, the pooled standard deviations were used (Morris, 2008). Effect sizes are expressed as the difference between the means expressed as a proportion of the standard deviation. According to Cohen, effect sizes between .20 and .50 are small, between .50 and .80 are medium, and greater than .80 are large (Cohen, 1977).

Results

Eighteen out of the twenty-three items were found to be significantly different between pre- and post-survey. Table 1 provides the 23 items in the survey. The items that were found to be significantly different pre- to post- are marked with an asterisk. The first 19 questions in Table 1 were written from a positive perspective, while the last four were written from a negative perspective. For the positively written items, the students' responses were significantly different from the pre-survey to the post-survey for 14 of the 19 items. The change for all 14 items was in the anticipated direction, indicating positive growth. The differences from the pre- to post-survey for all four negatively-phrased items were statistically significant and in the expected reverse direction. Thus, the change in attitude for all the items that were statistically significant indicated that candidates developed a more positive attitude toward inclusion during the course.

	Item	Pre-Post Mean	Std. Error Mean	t	df	Sig. (2-tailed)	Cohen's d
1	The regular school can give pupils with intellectual disabilities the same benefits provided by special Schools.	1.450	.128	11.249	297	.000*	.65
2	The inclusion of pupils with intellectual disabilities in regular classes in regular schools is beneficial to their progress.	.781	.095	8.195	296	.000*	.48
3	I feel positively about working with students with intellectual disabilities who may be included in my regular classroom. (NB this isn't asking about competence – just feelings)	.730	.094	7.731	292	.000*	.46
4	In a lot of ways, pupils with intellectual disabilities are equal to pupils without intellectual Disabilities.	.696	.101	6.883	295	.000*	.40
5	I feel positively about working with students with Autism or Asperger's Syndrome who may be included in my regular classroom.	.634	.095	6.657	294	.000*	.39
6	The majority of pupils with intellectual disabilities can successfully complete adapted curriculum in regular classes in regular schools.	.672	.100	6.723	295	.000*	.39

7	Pupils with intellectual disabilities can learn more in regular schools than in special schools.	.696	.107	6.486	292	.000*	.38
8	I expect I will be able to work with pupils with intellectual disabilities in my class.	.595	.091	6.542	295	.000*	.38
9	I feel positively about working with students with ADD or ADHD who may be included in my regular classroom.	.583	.094	6.230	294	.000*	.36
10	Pupils in regular schools can be prepared to accept students with intellectual disabilities in a reasonable and friendly way.	.438	.079	5.519	298	.000*	.32
11	The majority of pupils with intellectual disabilities can successfully complete part of the curriculum in a regular classroom of a regular school and the other part in special classes.	.492	.095	5.197	294	.000*	.30
12	Regular schools can be completely prepared to accept pupils with intellectual disabilities.	.481	.101	4.748	296	.000*	.28
13	Some pupils with intellectual disabilities can succeed in a regular school better than a lot of pupils without intellectual disabilities.	.243	.107	2.282	295	.023	---
14	Socializing with other pupils in regular school is more beneficial to pupils with intellectual disabilities than socializing with pupils with intellectual disabilities in special schools.	.460	.106	4.321	297	.000*	.25
15	Pupils without intellectual disabilities can have pupils with intellectual disabilities for friends.	.225	.116	1.944	297	.053	---
16	In regular schools, pupils with intellectual disabilities will be bullied by peers without intellectual disabilities.	.017	.126	.134	296	.894	---
17	Teachers have to be more sympathetic towards pupils with intellectual disabilities.	.136	.102	1.338	293	.182	---
18	Regular schools need special education professionals who are educated to work with pupils with educational disabilities.	-.177	.099	-1.782	293	.076	---

19	The majority of pupils with intellectual disabilities can successfully complete the curriculum in special classes in a regular school.	.390	.101	3.882	291	.000*	.23
20	Pupils with intellectual disabilities in regular schools can have a bad influence on the progress of the entire class.	-.973	.110	-8.876	297	.000*	.51
21	Pupils with intellectual disabilities in regular schools have a negative influence on the normal work in class.	-.740	.104	-7.090	295	.000*	.41
22	It would be best if all of the pupils with intellectual disabilities attended special schools.	-.732	.114	-6.423	298	.000*	.37
23	To work with pupils with intellectual disabilities, teachers would need to have additional education in special teaching methods.	-.447	.104	-4.305	294	.000*	.25

* The item was found to be significant at the Bonferroni-corrected level of significance, .002.

The results indicate that the pre-service teachers who took the class were more likely to believe that disabled students are not disadvantaged by being in a regular classroom. By participating in this class, the pre-service teachers were able to better understand that these students can complete at least part of an adapted curriculum in a regular classroom, or that they can complete some of the curriculum in special classes while attending a regular school. The class also appeared to help pre-service teachers understand that attending a regular classroom can be academically beneficial to students with learning disabilities, and that SWDs might actually learn more in regular classroom than they would in special-school classrooms.

These results indicate that pre-service teachers also felt more positively about having disabled students in their classrooms in general, because their confidence to teach students with disabilities increased. This included students with intellectual disabilities, Autism or Asperger's Syndrome, Attention Deficit Disorder (ADD), or Attention Deficit Hyperactivity Disorder (ADHD).

When considering practical significance, as measured by Cohen's d, the effect of the class would be considered small for most of the significant items. That is not unexpected, as this is one course. The class represents a start in changing attitudes. To effect greater, more permanent change, it would be important to follow up with other classes and experiences to further impact pre-service teachers' attitudes.

The two items that showed more than a small shift in attitude were item 1, *The regular school can give pupils with intellectual disabilities the same benefits provided by special schools*, with a Cohen's d value of .65, and item 20, *Pupils with intellectual disabilities in regular schools can have a bad influence on the progress of the entire class*, with a Cohen's d coefficient of .51. These are indeed significant changes in the perspectives of the preservice teachers. If the class can help teachers understand that the needs of students with intellectual disabilities can be met in a regular classroom and that their presence will not negatively impact the classroom, this points to the class having had a significant practical impact.

The positive attitude changes revealed by these results are critically important, for, as noted in the literature (McHatton & Parker, 2013), positive attitudes and expectations by teachers lead to improved outcomes for students with disabilities. In addition, the significant changes outlined in Table 1 indicate that some of their stereotypes, myths, and erroneous beliefs underwent a significant transformation during the semester's program.

Discussion

A number of features seem to be relevant to the outcomes of this research project. These have been sourced from the literature on disability studies and attitude change, from students' comments from the surveys, and from the authors' own experience. These features include the importance of boosting pre-service teachers' self-efficacy, practicum considerations, and social justice.

Strategies and increased self-efficacy

Self-efficacy, the confidence that teachers have or lack about their ability to effectively educate SWDs, is a serious issue for many (Finke et al., 2009; Lohrmann & Bambara, 2006; Vaz et al., 2015). Several student teachers reported having felt ineffective in included classrooms when trying to manage a student with disabilities, particularly when their supervising teacher lacked confidence. Therefore, being able to recognize and understand students' particular needs and then to implement valuable, appropriate strategies was essential content in this subject. The knowledge of current research-based strategies was addressed through teaching, demonstration, and assessment throughout the semester. As can be seen in in items three, five, eight and nine, students were able to articulate an increased confidence about being able to work with specific groups of SWDs.

It is noteworthy to recognize that these pre-service students had already completed three years of pedagogical study and at least 40 days of practicums in included classrooms prior to taking this course. Nevertheless, these students began this course with fairly negative attitudes towards SWDs. The subsequent coursework did seem to increase pre-service teachers' self-efficacy, with

regard to increased confidence and positive attitudes.

Initial Attitude Awareness-Raising

At the beginning of each semester's program, the first lecture involves an hour-long video. This video is based on a true, Australian story that took place in 1974. A new teacher commenced working at a government institution where she encountered a girl, Annie, with severe athetoid cerebral palsy. Although Annie was judged to be "severely mentally retarded," the teacher recognized her intelligence and developed a non-verbal communication program with her. The legal struggle to recognize her intelligence and to convince the authorities to release her from the institution was very difficult. However, Annie succeeded, going on to complete a university degree. For many of the pre-service teachers, this video was both confronting and challenging; it forced them to see SWDs as people with potential and to appreciate the positive contribution that teachers can make to such children's lives.

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Special Education Practicum

An integral part of students' program involves spending time with SWDs and their teachers in carefully selected schools. The schools are chosen as examples of how to educate children with extreme needs such as physical, intellectual, behavioral, and emotional (including autistic). These classes have been chosen in order that the particular pedagogical and management strategies used by the teachers become very apparent due to the students' disabilities and high-level needs. The teachers are caring, committed professionals and experts in their fields. Invariably, the pre-service teachers return to college expressing their awe, respect, and admiration for the work they have

observed. This experience also serves a networking function and can be a future contact for the pre-service teachers when they begin their careers.

Social Justice

An important part of the course included a study of social justice that involved awareness raising. This was accomplished through several means: application of social justice principles for SWDs through video examples that demonstrated examples of the verbal mistreatment of SWDs, understanding parents' perspectives, and guest lectures. This personalization of disability through scenarios and discussion guided the student teachers to a deeper understanding and acceptance of the concept of social justice, helping them to develop more positive attitudes.

Compassion and Caring

In order to assist in developing an attitude of compassion and caring, the lecturer commenced each class session with prayer, particularly for students in school with the disability that was to be studied that day. A blessing of empathy, skill, and patience was also prayed for the teachers, many of whom would have been recent graduates of the program who were working with these children. Prayer has been found to effect attitude change in a number of research studies (Koenig, 2009). These prayers helped students understand disability personally, along with inspiring video clips of parents sharing their stories and guest talks by parents. Examples from the life of Christ, as He accepted and supported people with disabilities whom others rejected, were also included in the course.

Legal Aspects

As mentioned earlier, within Australia and many other countries, legislation has been enacted to ensure that students with disabilities are provided with an appropriate education. Familiarization with the legislation and policies as well as an understanding of the classroom implications were addressed in the course. Sokal and Sharma (2017) noted that knowledge of mandated legislation and policy is vital in the development of beliefs and attitudes about inclusion and contributed to the

pre-service students' understanding and acceptance of the rights of SWDs.

Conclusions

Teachers having positive attitudes towards students with disabilities is critically important for to help these children to make satisfactory educational progress. However, this progress does not happen by chance. The intentional pattern of effective research-based teaching strategies together with a positive, caring, and empowering attitude on the part of the teacher are essential ingredients for success.

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