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Does Study of an Inclusive Education Subject Influence Pre-Service teachers' Concerns and Self-Efficacy about Inclusion?

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Abstract: Survey data were collected from pre-service teachers studying at a large regional Australian university. These data were examined with the purpose of determining whether pre-service teachers' views (and concerns) about inclusion and their confidence to teach in inclusive classrooms had changed as a result of studying an inclusive education subject and undertaking a practicum linked to that subject. The results of an analysis based on mean values indicated that the various concerns, namely, resources, acceptance, workplace, and academic standards, did not change markedly as a consequence of the subject and practicum experiences. This analysis also showed a hierarchy of concerns running from resources through to standards. Moreover, the results of a MANCOVA, with self-efficacy serving as the covariate and using the concerns measures as the dependent variables and pre/posttest condition as the independent variable, revealed no significant difference between the various measures on the condition. The implications of the results for teacher education programs are considered.

Introduction

Over recent years, moves towards the inclusion of students with special needs in mainstream classrooms have brought about greater attention on how teachers are trained and supported. Commensurate with this has been a growing interest in the way practising teachers and pre-service teachers perceive and respond to these students. Furthermore, there has been a focus on whether newly qualified teachers feel adequately prepared to provide effective and appropriate instruction for students with special needs. Australian researchers, including Lancaster and Bain (2007), have questioned whether the preparation pre-service teachers receive about inclusion is sufficient. Taken together, these issues foreground a need to understand the beliefs, attitudes, and concerns that pre-service teachers have about inclusive classrooms and to evaluate the effectiveness of current pre-service teacher education programs which incorporate inclusive education experiences.

In the current study, 'inclusion' and 'inclusive education' have been defined as follows. According to Ashman and Merrotsy (2009) inclusion "is about belonging, being rightly placed within a group of people and having the rights and qualities that characterise members of that particular group" (p. 73). In a similar vein, inclusive education refers to a concept of inclusion that is "based on the notion that schools should, without question, provide for the needs of all the children in their communities, whatever the level of their ability or disability" (Foreman, 2011, p. 548).

Literature review

Although professional development/learning remains a prominent approach to prepare in-service teachers for inclusive education, greater focus has been placed on university lecturers and course designers to prepare new teachers for teaching in inclusive classrooms (Van Laarhoven, Munk, Lynch, Bosma, & Rouse, 2007). If pre-service teachers enter the teaching profession with confidence and positive attitudes towards teaching in inclusive classrooms then this is likely to result in their use of more successful inclusive practices and a continuation of these good practices throughout their career (Haugh, 2003). Writers such as Lambe and Bones (2006) and Nes (2000) contend that the pre-service training stage of a teaching career can be the most effective time to nurture favourable attitudes and build confidence through the provision of high quality training.

In 1994, the United Nations Educational, Scientific, and Cultural Organisation (UNESCO) agreed on a set of principles regarding inclusive education expressed in the Salamanca Statement (UNESCO, 1994). The agreement of international recommendations to include content on inclusion as part of teacher training programs has effected changes with consequential altered requirements for these programs. Nevertheless, it is surprising that some teacher education courses offer little in the form of inclusive education and/or even fail to address key aspects of inclusion. This claim is supported by the fact that many new teachers express apprehension in regards to their ability to teach students with diverse needs in mainstream classrooms and apportion blame on their preparation for inclusion (Hemmings & Weaven, 2005; Jones, 2002; Scruggs & Mastropieri, 1996; Winter, 2006).

Most teacher preparation courses include a single introductory subject in the area of inclusive education (Carroll, Forlin, & Jobling, 2003). Research has shown that these introductory inclusive education subjects can have a positive influence on the attitudes and confidence of those studying these subjects (Bradshaw & Mundia, 2006; Campbell, Gilmore, & Cuskelly, 2003; Ellins & Porter, 2005; Subban & Sharma, 2006). To illustrate, studies undertaken by Carroll et al. (2003) and Lancaster and Bain (2007) show that participation in compulsory subjects dealing with inclusive education impacts favourably on discomfort levels, sympathy, uncertainty, fear, coping, and confidence. In addition, a study carried out by Burke and Sutherland (2004) found a statistically significant relationship between knowledge of students with disabilities and attitudes towards inclusion. Put simply, pre-service teachers with more knowledge held more positive attitudes.

Nevertheless, research has also demonstrated that these findings may be restricted. For example, Stella, Forlin, and Lan (2007) reported very little change in attitude towards inclusion following their study of a brief instructional module based on inclusive philosophy and inclusive practices. Interestingly, Tait and Purdie (2000) concluded that even a 12-month teacher training course had very little effect on pre-service teachers' views about disabilities and inclusion. These findings resonate with Nagata (2005) who asserts that a single subject dealing with inclusion cannot properly prepare beginning teachers to execute the multitude of tasks associated with inclusive practice, as well as cope with the demands of an inclusive classroom.

Some researchers (see, for example, Hastings, Hewes, Lock, & Witting, 1996; Sharma, Forlin, & Foreman, 2007) have been arguing that rather than focusing purely on an inclusive education subject to be included within a teacher education course, incorporating specific professional experience where the pre-service teachers gain knowledge and experience through working with students with special educational needs in the classroom can have a much more potent influence on their attitudes and efficacy, as well as reducing their anxiety and concerns. Moreover, Kurz and Paul (2005) and Nagata (2005) have claimed that there is a need to develop a well-structured program of subjects and experiences that give pre-service teachers opportunities to collaborate with key stakeholders such as teachers, support teachers, and teacher aides.

Both pre-service and newly qualified teachers appear to lack requisite skills and understandings of inclusive settings (Sharma et al., 2007). For example, West and Hudson (2010), in their study of early career special educators' views of teacher preparation program quality, identified resources related to assisting students and families emerged as one of the most highly ranked concerns for participants. This supports findings from previous research conducted by Heflin and Bullock (1999), Lambe and Bones (2006), and Sharma et al. (2007). These researchers emphasised that information about human and physical resources that support inclusion is pivotal to teacher training.

Concerns about resource selection and use seem to be lessened by organising visits to schools where classroom teachers are demonstrating effective inclusive practices (Leatherman & Niemeyer, 2005; Sharma et al., 2007). Incorporating more hands-on experiences can also lead to the development of more positive attitudes towards inclusion. To illustrate, Lambe and Bones (2007) found from their study of 125 pre-service teachers in Northern Ireland that the attitudes of the neophyte teachers had become more positive on completion of an eight-week teaching practice experience. The most significant changes in attitudes related to concerns (or anxieties) about how to share attention among children and manage instructional time effectively.

Lambe and Bones (2006) extended their study by holding focus group sessions with 41 of their participating pre-service teachers. From an analysis of these focus group interviews, it was identified that one of the most concerning aspects about inclusion was classroom congestion and the main way to alleviate this concern was through the support of a classroom assistant. However, these pre-service teachers stated that the class assistants need training and teachers and assistants also need training on how to work collaboratively.

It could be argued that as classrooms have become more diverse and inclusive, discipline issues for teachers have also increased. Classroom management/discipline issues are one of the primary reasons for teacher stress and teacher attrition (Boyer & Hamil, 2008; Bromfield, 2006). North American data have shown that fifteen percent of new teachers leave the profession within the first two years (Darling-Hammond, 1997), and as many as half of all teachers leave by the end of their fifth year (Jalongo & Heider, 2006). One of the main determinants of job satisfaction for teachers is teacher self-efficacy and strong teacher self-efficacy is viewed as a powerful stress buffer (Caprara, Barbaranelli, Borgogni, & Steca, 2003; Ware & Kitsantas, 2007). Teacher self-efficacy is defined as a teacher's "judgment of his or her capabilities to bring about desired outcomes of students' engagement and learning, even among those students who may be difficult or unmotivated" (Tschannen-Moran & Woolfolk-Hoy, 2001, p. 783). Given the strong relationship between teacher self-efficacy and teacher satisfaction, the attention of some researchers has turned recently to pre-service teachers and the creation of a firm foundation for future beliefs and learning (Woodcock, 2011). The assumption being that the most opportune time to change a teacher's belief is likely to be during the formative years of pre-service training (Woolfolk-Hoy & Spero, 2005).

According to Reupert, Hemmings, and Connors (2010), most teacher education programs in Australia give little prominence to inclusive education, except for a one-off introductory subject. The current study aimed to develop a better understanding of the concerns of pre-service teachers before and after they experience a one-off inclusive education subject and its related practicum. Additionally, the study monitored changes occurring in the self-efficacy beliefs, in relation to inclusive education, of these pre-service teachers. As a result of this study, it is anticipated that the findings will yield useful information to inform course managers and course designers as how teacher training in relation to inclusive education could be better supported.

Research Questions

Three research questions were framed to guide the study and these are as follows:
1.   What are the levels of concerns expressed by pre-service teachers prior to studying a subject in inclusive education? And, how do these measures relate to each other and self-efficacy?
2.   What are the levels of concerns expressed by pre-service teachers following completion of a subject in inclusive education? And, how do these measures relate to each other and self-efficacy?
3.   What changes, if any, occur in the level of concerns through the study of an inclusive education subject?

Method
Participants

Pre-service teachers enrolled in the third year of a primary teacher education course at a large Australian regional university participated in the study. Although there were 138 pre-service teachers who potentially could have participated in the study; useable responses to a survey were obtained from 97 pre-service teachers in the first phase of the study. The survey was re-administered five months later (second phase) to the same potential participants and useable responses from 102 pre-service teachers were obtained. Of the participants in the study, approximately 25% were male and 75% were female. This breakdown by gender is similar to the ratio of male and female primary teachers in Australia (Callan, 2004).

Instrumentation

A survey was the sole means of data gathering for this study. The survey was divided into a number of parts and used a variety of question formats e.g., Likert scales and open-ended questions. Even though the main focus of this article is the analysis of the Likert-scale responses, it needs to be emphasised that other sections of the survey were used in a more extensive project relating to pre-service teacher views and self-efficacy about inclusion. Detailed information about the survey can be sought from the authors of this article.

The Likert-scale items in the survey were drawn from two sources: the Concerns about Inclusive Education Scale (CIES) (Sharma & Desai, 2002); and, the Self-Efficacy toward future Interactions with People with Disabilities Scale (SEIPD) (Hickson, 1996). The CIES (Sharma & Desai, 2002) measures participants' degree of concern about implementing inclusive education. The scale has 21 items e.g., "I will have to do additional paperwork". Each item requires a response to a 4-point Likert-type classification with response choices ranging from *extremely concerned (3), very concerned (2), a little concerned (1)* to *not at all concerned (0)*. The CIES yields a total score which is calculated by adding the value of the responses on each item. The total score may range from 0 to 63. A higher CIES score indicates that a respondent is more concerned about his/her ability to implement inclusion. As noted by Sharma, Ee, and Desai (2003), the scale also produces scores on four factors, namely, *concerns about acceptance*; *concerns about workload*; *concerns about resources*; and, *concerns about academic standards*. Sharma and Desai (2002) and Sharma et al. (2003) have reported on the adequacy of the scale and its constituent factors.

In the current study, through the use a principal components analysis (PCA), it was revealed that four factors could be identified. Two extraction criteria were utilised: eigenvalues more than one and interpretability. The four factors were consistent with the Sharma and Desai (2002) constructs/factors and were labelled accordingly. However, it needs to be emphasised that one item did not load substantially on any of the dimensions and was

deleted from subsequent analysis. Four subscales were then derived from a grouping of the items as defined by the factors. The sub-scales were adequate in terms of their internal consistency with Cronbach's alpha results in the acceptable range (i.e., >.7).

The study also employed the SEIPD scale (Hickson, 1996) and this scale is made up of 15 items. The SEIPD employs an 8-point scale ranging from *definitely false* to *definitely true*, with participants responding to statements such as "I am able to plan and organise appropriate activities for my students". A mean alpha coefficient of .87 has been reported for the SEIPD (Hickson, 1996). In the current study, the 15 items were subjected to a PCA and a single dimension was identified. Consistent with the work of Hickson (1996) this factor was labelled *self-efficacy toward integration*. Scale development and subsequent analysis, based on this factor, revealed a Cronbach's alpha score of .80.

Procedure

As Rowan (1994) has highlighted, learning to teach is a complex task in which issues and concerns are progressively faced and new ones emerge over time. For this reason, the participants were invited to complete the same survey twice to assess if the same issues and concerns emerged and if new experiences, across a five-month period, impacted on their responses. The first survey administration (phase 1) was carried out in a lecture held at the beginning of their sixth session of study. This lecture formed part of an inclusive education subject which ran for the entire session and incorporated a four-week teaching practicum in a K-6 setting. The second survey administration (phase 2) occurred at the conclusion of the session in the final lecture of the same subject. The surveys were matched using a coding system thus maintaining the anonymity of the participants. With a few exceptions, the same students responded to both surveys. It needs noting that participation in both phases of the study was voluntary and the study was approved by the Human Research Ethics Committee of the participating University.

Results

Table 1 reports the means for concerns measured during phase 1 and phase 2 of the study. These resultant means show a hierarchy of concerns running from resources through to standards. It is worth noting that for three of the categories of concern, namely, acceptance, workload, and standards, the mean value indicated only a little concern or less. Only with the resource concern does the mean rise substantially above a little concern. These patterns in the results are consistent for both phases of the study.

Concern	Pretest	Posttest
Resources	1.51	1.36
Acceptance	1.00	1.01
Workload	.80	.83
Standards	.65	.55

Table 1: Means for concerns measured at phase 1 (pretest) and phase 2 (posttest)

Paired sample t-tests were applied to the means (identified in Table 1) using a Bonferroni adjustment to take account of the multiple contrasts being undertaken ($p•.005$). For the pretests, these analyses revealed significant differences between all four categories of concern, except for workloads compared with standards. In the case of the posttests, significant differences were found for all contrasts, except for that between acceptance and workload (refer to Table 2).

Measure	Acceptance	Pretest Workload	Standards	Acceptance	Posttest Workload	Standards
Resources	<.001	<.001	<.001	<.001	<.001	<.001
Acceptance		<.001	.003		ns	<.001
Workload			ns			<.001

Table 2: Probability values for paired t-tests on pretest and posttest concerns

An inspection of the correlations (reported in Table 3) between the pretest and posttest measures of concerns and self-efficacy indicated a moderate level of association between all four posttest concerns and a moderate degree of association between pretest workload concern and resources and standards respectively. Moreover, the self-efficacy measures were at least moderately correlated with the posttest resources and workload concerns.

Measure	1	2	3	4	5
1 Resources					
2 Acceptance	.28 (.45)				
3 Workload	.38 (.52)	.16 (.32)			
4 Standards	.16 (.37)	.31 (.50)	.45 (.39)		
5 Self-efficacy	.16 (.47)	.15 (.25)	.35 (.59)	.22 (.24)	

Table 3: Correlations for the concerns and self-efficacy measured at phase 1 (pretest) and phase 2 (posttest)

Note. The correlations in parentheses are those for the posttest.

Given the magnitude of these correlations it was determined that any pretest/posttest comparison needed to be undertaken using a multivariate analysis of covariance (MANCOVA) with self-efficacy serving as the covariate. The mean pretest self-efficacy score was 2.24 with a standard deviation of .84 and the posttest mean score was 2.24 with a standard deviation of .89, indicating that this variable was unsuitable for inclusion as a dependent variable. The four dependent variables for this analysis were the four concerns measures and the independent variable was the pre/posttest condition. Using Pillai's trace, the

results for self-efficacy in the MANCOVA were $F(4, 168) = 13.72$, $p<.001$, indicating that it was significantly related to the dependent measures. However, the pretest/posttest contrast yielded a multivariate value of $F(4, 168) = 1.15$, $p=.337$, revealing a non-significant difference between the concerns scores on the two separate occasions. In other words, there was no significant difference between the four dependent variables on the condition after controlling for the effects of self-efficacy.

Discussion

According to Lambe and Bones (2006) and Nes (2005), the pre-service teaching stage of a teaching career is an opportune time to intervene and promote more positive views and beliefs about inclusion and inclusive practices. The present study aimed to build a better understanding of the concerns of pre-service teachers before and after they experience a single inclusive education subject and its related practicum. The study also sought to monitor any changes, across the same timeline, occurring in the self-efficacy beliefs of these pre-service teachers.

In relation to the concerns expressed by pre-service teachers, the results of the study show that four general types of concern, namely, *acceptance*, *workload*, *resources*, and *academic standards*, were evident but that the levels of these concerns were quite low. In fact, at the beginning of the subject and at its conclusion the levels averaged around 1 (a little concerned) on a scale from 0 (not at all concerned) to 3 (extremely concerned). Interestingly, a hierarchy of concerns was apparent, with 'concern for resources' registering as the most concerning and 'concern for academic standards' registering as the least concerning. The hierarchical pattern for both data collection periods remained the same. With hindsight, interview data would have been a useful addition to give greater insight into these particular findings.

The results also demonstrated a degree of association between the four measures of concerns. At both the pre and posttest phases these correlations were generally at a moderate level. Given the extent of these relationships and that the most pressing concern was resourcing, teacher education courses and inclusion subjects would benefit from more attention being focused on these concerns/issues and how to address them. Course developers and subject designers would also need to take account of how to better balance practicum time so that the pre-service teachers see firsthand experienced practitioners overcoming challenges linked to their identified concerns.

Lancaster and Bain (2007) questioned whether the preparation pre-service teachers are provided about inclusion is adequate; arguing that more content and study time is required. The evidence obtained from the present study indicates that the self-efficacy of the neophyte teachers changed little, if at all, across a five-month course/subject experience. This is in line with findings reported by Stella et al. (2007) and Tait and Purdie (2000). Nevertheless, because a practical experience was included in the subject studied by the neophyte teachers, at the suggestion of Nagata (2005), it could be argued that this is a surprising finding given that an Australian study carried out by Carroll et al. (2003) demonstrated increases in pre-service teacher confidence. Obviously, contextual and socio-historical factors may be at play here.

Another possible explanation for the lack of change (in both self-efficacy and levels of concern, for that matter) recorded in the present study could be that the four-week practicum was too short and mostly involved collaboration with the classroom teacher. Anecdotal evidence, as well as the responses given to several open-ended questions points out that the collaboration was restricted to involvement with a single classroom teacher. Nagata (2005) maintained that collaboration with other key stakeholders such as counsellors and support teachers was needed in order to influence attitude and views. Or, did the

practicum experience, and its related subject content, simply increase the neophyte teachers' awareness of the difficulties and complexities they will face as practising teachers, and therefore nullify any attitudinal change that might have resulted?

Even though the level of reported self-efficacy did not change as a result of exposure to the subject and its related practicum, it needs to be noted that this level was rather low. This is consistent with research reported by Hemmings and Weaven (2005) and Winter (2006) who highlight that pre-service teachers express considerable apprehension about working with students with disabilities and other special needs. Since mastery experiences are the most effective source of self-efficacy (Bandura, 2001), any intervention which is derived needs to allow for the time to develop mastery. It would appear that the practicum experience did not offer sufficient time for many of the participants to strengthen their self-efficacy in relation to inclusive practices and, as a result, self-efficacy levels remained at very low levels. As documented by Bandura (2001), another way of promoting self-efficacy is by seeing and modelling the successful practice of others. Again, these opportunities would have been limited as the pre-service teachers were undertaking a third year practicum where they were often in the lead teaching role with their students. Course developers might draw on this point by suggesting that supervising teachers need to model more frequently approaches which can accommodate the needs of their diverse students. In other words, pre-service teachers would be better served if they are shown effective practices by their supervising teachers rather than simply experiencing teaching for teaching's sake. Gaining practice is useful but practising effective approaches is arguably more worthwhile. This point is supported by Hemmings and Woodcock (2011) who emphasised that readiness to teach in inclusive classrooms appears to be related to a number of things, including seeing others model best practice strategies in a classroom environment.

Another important feature of the study was that the two scales used, namely, the SEIPD and CIES, were reassessed. This reassessment showed that: one, the SEIPD was uni-dimensional and reflected properties reported by Hickson (1996); and two, the clustering of items in the CIES was consistent with earlier studies conducted by Sharma and his associates (see, for example, Sharma & Desai, 2002; Sharma, Ee & Desai, 2003). In short, both scales were revalidated in a different context and the reported Cronbach alphas deemed as meeting an acceptable level.

Given that the sample was based on one university's cohort, generalising from the findings is somewhat restricted. However, as all four-year pre-service primary teacher education courses in Australia have a mandatory inclusive education subject and associated practicum experiences, such a restriction may not be needed. Nevertheless, more study is warranted to investigate further why the sampled pre-service teachers expressed a hierarchy of concerns about inclusion and why their self-efficacy beliefs with respect to inclusion were in need of strengthening. A longitudinal study drawing on a number of universities and using both survey and interview methods would be beneficial as follow-up research.

Conclusion

The study of inclusive education plays an important role in preparing classroom teachers. The present study explored the concerns and beliefs of pre-service teachers and how these may change through exposure to practical experiences and content related to inclusive education. Although the results of the study, based on a sample of Australian pre-service teachers, have shown that the pre-service teachers' concerns and beliefs did not change much across a five-month period, the findings do add to the extant literature. Such an addition concentrates on the practical implications for stakeholders such as course developers, subject designers, and supervising teachers. In particular, these stakeholders need to draw on the study's findings when considering how pre-service teachers' concerns can best be addressed, how their self-efficacy beliefs can be strengthened, and how courses and subjects can offer a more appropriate balance between theory and practice.

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