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Primary Pre-Service Teachers' Attitudes Towards Inclusion Across the Training Years

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Abstract: Teachers are responsible for meeting the needs of increasingly diverse learners. Given their position as catalysts for educational change, teachers' positive attitudes towards inclusive education must be considered prerequisite to its success in Australian classrooms. This study investigated the extent to which pre-service training affects pre-service primary teachers' attitudes towards inclusive education. A survey was designed to examine such attitudes among primary pre-service teachers at all year levels of their Bachelor of Education (Primary). To reflect the increasingly broad definition of inclusion established in the literature, participants' attitudes towards gifted and talented students, those learning English as a second language or dialect and those with disabilities were considered. Using a sample of 56 primary pre-service teachers from three metropolitan universities in Australia, this study examined the nature of these attitudes according to child, teacher and environment related variables across the training years. Results showed that primary pre-service teachers' attitudes towards inclusion were generally positive and strengthened across the training years, though they varied according to demographic characteristics, constructs and areas of inclusion. The findings of this study have implications for teacher educators, teacher education institutions and future research.

Introduction

Education providers are increasingly addressing the quality of inclusive education. Some nations' policies (e.g., United States, United Kingdom) have impacted the development of inclusive policy in education elsewhere (Foreman, 2017). Despite these international developments, the review of the Disability Standards for Education 2005 (DEEWR, 2012a) and the federal government's response (DEEWR, 2012b) are the first Australian policy and legislative documents to refer explicitly to inclusive education. This marks a political push towards embedding the principles of inclusion in school and educator accountability.

The principles of inclusive education were made prominent as part of the Salamanca Statement (UNESCO, 1994). More recently, the United Nations General Comment No. 4 stressed the importance of the legally binding nature of the Convention on the Rights of Persons with Disabilities and the call for quality inclusive education. Inclusive education is based on the principle that schools "provide for the needs of all the children in the community, whatever their background, their ability or their disability" (Foreman, 2017, p.16). For this reason, mainstream classroom teachers are responsible for accommodating an increasingly diverse group of learners, some of whom may previously have been educated in segregated settings (Florian, 2017). Given their prime position in helping or hindering

inclusive education, general educators' attitudes are crucial (Avramidis & Norwich, 2002; Stemberger & Kiswarday, 2017). Research in this area has been conducted internationally, with an increasing body of literature in Australia (e.g., Varcoe & Boyle, 2014; Sharma & Jacobs, 2016).

Literature Review

Pre-service teacher education is a catalyst for inclusive classroom practice, and its enactment in tomorrow's classrooms. It is important to understand pre-service teachers' acquired attitudes towards inclusive education and how pre-service training programs influence these attitudes (D'Alonzo, Giordano, & Cross, 1996; Forlin, Loreman, Sharma, & Earle, 2009; Kim, 2011).

Inclusive Education

Inclusive education is underpinned by a principle of inclusion that all students should be supported in the neighbourhood classroom. Despite this, the literature defines 'inclusion' in various ways. Many conceptualisations rely only on the education of students with disabilities in mainstream classrooms (Avramidis & Norwich, 2002; McCray & McHatton, 2011). Hodkinson (2005), however, suggests that considering inclusion only from the perspective of students with disabilities is exclusionary.

Others aim for a broader definition. Some see inclusion as a global movement, involving universal issues of social justice and equity (Kozleski & Waitoller, 2010; Pearce, 2009). Some acknowledge that inclusion must cater for student diversity in ability, ethnicity, gender, social class, culture and religion (Bradshaw & Mundia, 2006; Forlin, Cedillo, Romero-Contreras, Fletcher & Hernandez, 2010). Ultimately, inclusion is a catalyst for overcoming "the barriers that inhibit children's choices and ability to achieve their full potential" (Hodkinson, 2005, p. 19).

Classroom teachers have commonly criticised inadequate training in inclusive education (Ashman, 2010; Symeonidou & Phtiaka, 2009). Although in-service professional development is beneficial (Hemmings & Woodcock, 2011), greater focus is being placed on general educators' pre-service training. There is consensus in the literature that "teachers' acceptance of the policy of inclusion is likely to affect their commitment to implementing it" (Bradshaw & Mundia, 2006, p. 35). Indeed, teachers set the tone of their classrooms. Those with positive attitudes are more likely to adapt their pedagogy to benefit all students, while also promoting inclusion among their colleagues (Sharma, Forlin, & Loreman, 2008). Investigating the effectiveness of pre-service training in promoting such attitudes in teachers is thus vital (Woodcock et al., 2012).

Teacher Attitudes

According to the predominant social constructivist perspective, teachers' attitudes are based on personal characteristics, including gender, cultural background and predispositions (Louden, 2008; Spandagou, Evans, & Little, 2008). Attitude formation is a 'learned process' influenced by contextual factors including contact with students with diverse needs, previous educational background and self-efficacy (Ahsan, Sharma, & Deppeler, 2012; Lambe & Bones, 2006; Lassig, 2009). Attitudes are therefore "context-dependent and responsive to factors within a socio-cultural environment" (Bradshaw & Mundia, 2005, p. 564). Scorgie

(2010) embeds attitude formation in 'transformative learning': the process by which engagement, including pre-service training, effects a substantial change in understanding. "Transformability" (Hart, Dixon, Drummond, & McIntyre, 2004, p. 166) relies on teachers' belief that children's capacity to learn is not fixed and that teachers can influence student learning (Florian, 2017).

In a review of international literature on teacher education, it was found that pre-service teachers' attitudes and beliefs were relatively static during teacher preparation (Kagan, 1992). Indeed, pre-service teachers enter training programs with beliefs about education that, once held unchallenged long term, are difficult to change (Fives & Buehl, 2008; Hudson, Hudson, Lewis, & Watters, 2010; Pajares, 1992; Woodcock, 2011). Nonetheless, initial training is a context in which beliefs, which inform attitudes, may be affected (Pearson, 2009; Tangen & Beutel, 2017; Varcoe & Boyle, 2014).

It is sustained throughout the literature that teachers' attitudes are prerequisite to the successful implementation of inclusive practices (Ahmmed, Sharma, & Deppeler, 2012; Forlin, 2010; Lambe & Bones, 2006). Avramidis and Norwich (2002) identified three major influences on teachers' attitudes: child-related, teacher-related and environment-related variables. This reflects the theory of affective, cognitive and behavioural components of attitudes used in numerous studies over the years (Ahmmed et al., 2012; de Boer, Pijl & Minnaert, 2011; Eagly & Chaiken, 1993).

Exposure to students with diverse learning needs arises as a key child-related variable. Literature on pre-service teachers' attitudes towards inclusion has tended to focus on the specific category of disability. Jordan, Schwartz and McGhie-Richmond (2009) assert that teachers' broad epistemological beliefs may affect their assumptions about ability and disability. Teachers' attitudes often vary according to the type or severity of disability (Levins, Bornholt & Lennon, 2005). Several studies have found that classroom teachers view students with mild disabilities favourably, but are hesitant about those with severe disabilities (Ashman, 2010; Sharma et al., 2008).

In one research synthesis, 65% of teachers supported the concept of inclusion, but this depended upon the types of disability presented (Scruggs & Mastropieri, 1996). This review, however, was only of American research and is somewhat outdated, limiting its application to the Australian context. Alternatively, teachers' attitudes towards gifted education can be prone to the 'tall poppy syndrome' as giftedness receives a significantly different response in schools compared to other additional needs (Bartley, 2014; Geake & Gross, 2008). A study of primary pre-service teachers in NSW revealed that participants deemed 'average' students to be more desirable to teach than their gifted peers (Carrington & Bailey, 2000). Other surveys have revealed pre-service teachers' stereotypic beliefs about culturally and linguistically diverse students, including their endorsement of deficit labels of students learning English as an additional language or dialect (EAL/D; de Courcy, 2007; Kumar & Hamer, 2013).

Attitudes are informed by personal experience and socio-cultural beliefs, values and practices (Scorgie, 2010). Louden (2008) also includes demographic and personality traits as teacher-related variables. Many researchers have aimed to account for teachers' attitudes using demographic characteristics, though findings have remained inconsistent (Avramidis, Bayliss, & Burden, 2000). For example, in a quantitative survey of final year pre-service teachers in Australia, older age was identified as a predictor of support for gifted and talented students (GAT students) and their education (Jung, 2014). Others have reported younger teachers' more positive attitudes towards the inclusion of students with disabilities (Avramidis et al., 2000). These and other studies of the impact of age, gender and exposure on teachers' attitudes vary greatly in location, context and sample size.

Other studies focus on longitudinal attitudinal change across an inclusive education unit of study in pre-service training (Spandagou et al., 2008; Woodcock et al., 2012).

However, teachers form beliefs about teaching and inclusion throughout all aspects of their training (Woodcock & Vialle, 2010). Rindfleisch, Malter, Ganesan, and Moorman (2008) warned against longitudinal research, given that "causes that are temporally distant from their effects [can be] more difficult to establish than those that are proximate" (p. 264). Cross-sectional design, however, allows for suggestive results and avoids some challenges of longitudinal studies, such as participant drop out (Cohen, Manion, & Morrison, 2011).

Research has also considered the educational environment. In a recent Australian study, pre-service teachers' greatest concern related to the adequacy of school resources for supporting inclusive education (Woodcock et al., 2012). Final year secondary education students have also expressed frustration at catering for culturally and linguistically diverse students, as their needs 'interfere' with classroom teaching (Premier & Miller, 2010). There is an apparent need to promote the notion that all student populations, including students with disabilities, GAT students and EAL/D students, should be equally supported in the education environment (Jung, 2014).

The potential of initial teacher training to change and/or support attitudes related to inclusion should be exploited, bearing in mind the heterogeneity of those entering the teaching profession (Mittler, 2000). Inclusive classrooms cater for "students with or without disabilities as well as students from diverse cultural and linguistic backgrounds" (Kim, 2011, p. 355). Research in the field must therefore reflect the increasingly broad definition of inclusion, recognised internationally as catering for *all* students, not exclusively those with disabilities (Ainscow & Cesar, 2006).

This research study examined pre-service teachers' attitudes towards inclusion in terms of disability, giftedness and second language learning. Research findings may allow training institutions to "differentiate their curricula to ensure that they meet the dissimilar needs of trainee teachers" (Forlin et al., 2009, p. 207). Therefore, this study aimed to investigate the questions: *What are the attitudes of primary pre-service teachers towards inclusive education?* and, *How do pre-service primary teachers' attitudes vary according to child-related, teacher-related and environment-related variables?*

Methodology
Research Design

The literature on teachers' attitudes towards inclusion has seen a "turn away from description and interpretation towards causal inferences" (Louden, 2008, p. 359). Recent studies have relied on quantitative methods to draw conclusions about pre-service teachers' attitudes towards inclusive education (Harvey, Yssel, Bauserman, & Merbler, 2010; Woodcock, 2011). Quantitative research aims to "identify cause-and-effect relationships that enable … predictions and generalizations" (Johnson, 2008, p. 35). A quantitative survey and cross-sectional design were used for this project. In cross-sectional designs, participation is more likely at single points in time and large samples allow for comparison of participant characteristics (Cohen et al., 2011).

Importantly, previous research of pre-service teachers' attitudes towards inclusion in Australia has focused on a single special education unit of study or has combined primary, secondary pre-service and postgraduate teachers into a single study (e.g., Forlin et al., 2009; Mergler, Carrington, Boman, Kimber & Bland, 2017; Woodcock et al., 2012). It has been acknowledged, however, that primary and secondary education contexts are substantially different and that there is a need for research focused specifically on the attitudes of primary pre-service teachers (Avramidis & Norwich, 2002; Varcoe & Boyle, 2014).

Participants

Pre-service teachers were drawn from three metropolitan universities in Australia. These institutions were chosen for their similarity in course structure and coverage of content. Participants were undertaking a four year Bachelor of Primary Education undergraduate degree at one of these institutions, preparing them to teach children from Kindergarten to Year 6, aged five to 12 years. Pre-service teachers were in their first, second, third or fourth (final) years of study at the universities, allowing for attitude comparison. First year students, therefore, had just commenced their teacher education programs and fourth year students were entering their final semester of study.

Variables	*n*
Gender	
Female	49
Male	7
Age	
Under 20	10
20-29	39
30-39	4
40-49	3
Birthplace	
Australia	48
Vietnam	2
England	1
USA	1
South Africa	3
Indonesia	1
Year of Study	
1st	16
2nd	4
3rd	6
4th	30

Table 1: Participant demographics

Participating Teacher Education Programs

Pre-service teachers complete on average 112 days of professional experience placement in primary schools as part of their pre-service training at the participating universities. Coverage of inclusive education in compulsory and elective units of study varied at each institution, but typically occurred in the third year of study. One program prioritised compulsory units of study in inclusive education and catering for multilingual students in the second half of the program, with elective study in EAL/D support available. Others provided a compulsory focus on teaching linguistically diverse students and students with special educational needs as a long-term specialisation throughout the degree, or as the context for professional experience.

Instrument

A survey was developed for this research. Surveys are "one of the most efficient research methods for [comparing participants'] knowledge, attitudes, beliefs and behaviours" (Woodcock, 2011, p. 25). The survey consisted of two sections. The first section elicited participants' demographic information, including gender, age, year of study and exposure to students with diverse needs. Forlin et al. (2009) found that "particular demographics … [significantly impacted] changes in preparing pre-service teachers for working in inclusive classrooms" (p.200). Collecting demographic information was therefore important as such variables may account for differences between pre-service teachers' attitudes towards inclusion.

The second section of the survey dealt with three constructs: child-related (student acceptance and academic ability); teacher-related (responsibility for inclusion and training); and environment-related (resources and support). The survey addressed each of these constructs as relevant to students with disabilities, GAT students and EAL/D students (ACARA, 2013). Items addressing students with disabilities were adapted from the *Concerns About Inclusive Education Scale* (CIES) (Sharma & Desai, 2002); Kim's (2011) *Teachers' Attitudes Towards Inclusion Scale;* and Ahmad's (2012) *Scale for Measuring Attitudes Towards Inclusive Education.* McCoach and Seigle's (2007) *Assessing Attitudes of Preservice Teachers Toward Giftedness* scale (as cited in Troxclair, 2013) was referred to in developing items related to GAT students and Ting and Gilmore's (2012) *Attitudes Towards Teaching Deaf and ESL Students* scale was considered for items concerning EAL/D students.

Each of these instruments used Likert-type questions, though they varied between 4-point and 5-point scales. It is recommended that Likert-scale questions feature no less than five response categories, therefore a 5-point scale was used in the survey developed for this study (Allen & Seaman, 2007; Jamieson, 2004). A pilot trial of the survey was conducted to ensure reliability and validity (Cohen et al., 2011), with 25 participants drawn from a convenience sample of second and third year pre-service teachers. Changes to wording were made to items that were identified by participants to be unclear or ambiguous (Muijs, 2011). The final internal reliability analysis (Cronbach's alpha) resulted in an alpha coefficient score of .761. This confirmed that the items in the survey were internally consistent (Cohen et al., 2011; Muijs, 2011).

The final survey collected demographic information about the participants, followed by 40 items that were rated on a 5-point Likert scale ranging from "strongly disagree" to "strongly agree".

Procedure

Ethics approval was obtained from the researchers' University Human Research Ethics Committee [Protocol: HREC 2014/268] prior to commencement of the study. Participants were recruited from three metropolitan universities in Australia. The survey and information regarding administration and analysis were emailed to the university program instructors. Pre-service teachers in their first, second, third and fourth years undertaking a Bachelor of Education (Primary) at the target universities were emailed the participant information, including the survey link, inviting them to participate. Participants were assured that their contribution was voluntary and that their responses would remain anonymous and confidential. They were advised that they could complete all or part of the survey and withdraw at any time. Consent was assumed by participants' online submission of responses.

The survey was made available to participants online using Google Drive. Internet-based surveys can reach a broad population while maintaining anonymity, and a diverse range of participants allows for greater generalizability (Cohen et al., 2011). Survey data was downloaded in an Excel file format. Scores were reverse coded for 18 of 40 survey items. While Weems and Onwuegbuzie (2001) recommend caution when including positively and negatively worded questions, given the risk of participant confusion or acquiescence, the "inclusion of reverse coded items motivates participants to process items more carefully" (Salkind, 2007, p.843). Therefore, after coding, a higher score indicated a more positive attitude.

Results

Data analysis was undertaken using the SPSS Statistics software package, including the calculation of means and standard deviations for comparison of responses to survey items. Descriptive analysis was undertaken according to the three constructs and areas of inclusion, using participants' demographic characteristics as extraneous variables (Rindfleisch et al., 2008). As established in the literature, demographic variables include age, gender and exposure to diverse students (Ahsan et al., 2012).

Prior to analysis being undertaken, data were checked for normal distribution (Shapiro-Wilk, $p = .560$). As a result of the data being normally distributed (Tabachnick & Fidell, 2007), univariate analyses were conducted to examine differences between pre-service teachers' attitudes towards inclusion according to child-related, teacher-related and environment-related variables.

A total of 56 primary pre-service teachers participated in the present study. Of the total data set, 87.5% of the participants were female ($n = 49$) and 12.5% were male ($n = 7$) primary pre-service teachers. The majority (69.6%) of participants were between 20-29 years of age ($n = 39$). Most participants (85.7%) indicated that their birthplace was within Australia ($n = 48$).

Table 2 shows the total mean inclusion scores according to the demographic variables. Most pertinent of these were primary pre-service teachers' exposure. Participants who had a disability themselves, had friends or family with a disability, had been enrolled in a class or school for GAT students, or whose parent(s) had completed a university degree had more positive attitudes towards inclusion.

Variables	n	Mean	Standard Deviation
I have a disability			
Yes	3	3.78	.28
No	47	3.66	.28
I have (a) friend/s with a disability			
Yes	16	3.76	.27
No	34	3.62	.28
I have (a) member/s of my family with a disability			
Yes	20	3.77	.29
No	30	3.60	.26

I had (a) friend/s with a disability in my class at my school			
Yes	27	3.68	.29
No	23	3.66	.28
There was a class for students with disabilities at my school			
Yes	16	3.71	.29
No	34	3.65	.28
I was enrolled in a class or school for gifted students			
Yes	13	3.77	.31
No	37	3.63	.28
One or both my parents have completed a university degree			
Yes	22	3.69	.22
No	28	3.65	.33

Table 2: Inclusion scores for Demographic Variables

Child-Related

Responses to items 12 (*By separating students into gifted and other groups, we increase the labelling of children as strong-weak, good-less good etc.*), 15 (*Gifted students cannot cope well socially in the regular school*) and 31 (*Teachers should commence planning for all students at the age related content area within the syllabus/curriculum*) were the most positive for this variable (M = 4.05, M = 4.04 and M = 4.07, respectively). Attitudes related to items 6 and 33, concerning planning for GAT students and EAL/D students, were the least positive (M = 2.66 and M = 2.73, respectively). The attitudes of participants in their final year of pre-service training for child-related items were slightly more positive (M = 3.69) than those of the first-year participants (M = 3.46).

Teacher-Related

Attitudes according to this variable were positive, with some of the highest means recorded for items 7, 10, 14 and 18 (M = 4.44, M = 4.39, M = 4.55 and M = 4.41, respectively). Responses to item 14 (*Regular classroom teachers should be required to receive training so they are professionally prepared to meet the needs of linguistic minorities*) indicated the most positive attitudes across the survey items. Pre-service teachers' attitudes according to teacher-related items were significantly higher for final year participants (M = 4.02) compared to those in their first year of study (M = 3.67).

Participants who had completed a mandatory unit of study in special and inclusive education or EAL/D recorded slightly more positive attitudes on the mean total inclusion scores. Alternatively, participants who had not taken an elective unit in gifted education had very slightly more positive attitudes than those who had elected to study in this area.

Year of Study

An exploratory analysis of variance showed a main effect for year of study ($F(3, 46) = 4.13$, $p = .011$, $\eta^2 = .212$). A post hoc analysis using Tukey's HSD showed that total attitude

scores for fourth year pre-service teachers were significantly more positive than for first year teachers (p = .039). The effect size was similarly large for first and fourth year pre-service teachers attitudes towards EAL/D students (F(3, 46) = 4.90, p = .005, η^2 = .235; p = .046) and for teacher-related variables (F(3, 46) = 4.32, p = .009, η^2 = .216; p =. 015). A moderate effect size, but not statistically significant (p > .05), was found for the difference between first and fourth year participants' attitudes towards GAT students (η^2 = .53), students with disabilities (η^2 = .069), child-related variables (η^2 = .119) and environment (η^2 = .041).

Variables	Mandatory			Elective		
	n	Mean	Standard Deviation	*n*	Mean	Standard Deviation
Special and inclusive education unit of study						
Yes	26	3.78	.26	15	3.66	.32
No	24	3.54	.25	35	3.67	.26
Gifted education unit of study						
Yes	2	3.63	.25	3	3.51	.46
No	40	3.65	.29	39	3.66	.28
English as an additional language or dialect unit of study						
Yes	15	3.85	.28	9	3.70	.23
No	30	3.57	.24	35	3.66	.30

Table 3: Inclusion scores for Demographic Variables

Environment-Related

Attitudes according to this construct were varied. Those indicated by items 3, 11 and 17, which dealt with learning support and educational setting, were particularly positive (M = 4.54, M = 4.49 and M = 4.34, respectively). Items 5, 16, 27 and 39, however, which concerned adequate resourcing for supporting students with additional learning needs, were less positive (M = 2.21, M = 2.70, M = 2.46 and M = 2.13, respectively). Attitudes according to item 39 (*Special education teachers are best equipped to meet the needs of students with disability*) were the least positive across all survey items.

Discussion

This research study aimed to investigate primary pre-service teachers' attitudes towards inclusion across the training years. It is widely acknowledged that pre-service education is a critical time during which attitudes towards inclusive education may be enhanced (Lambe & Bones, 2006; Varcoe & Boyle, 2014; Woodcock et al., 2012). Pre-service teachers entering the primary teaching profession with positive attitudes towards inclusive education are more likely to implement strategies that promote an inclusive paradigm in their classrooms (McCray & McHatton, 2011; Sharma, Forlin, Loreman & Earle, 2006; Woodcock & Vialle, 2010). However, pre-service teachers enter initial training with beliefs about teaching and demographic characteristics that may influence how they develop their attitudes towards inclusion (Ahsan et al., 2012; Fives & Buehl, 2008; Pajares, 1992).

The first aim of this study was to examine the attitudes of primary pre-service teachers towards inclusive education. Inclusion was defined broadly to reflect international discourse, "from a perspective of diversity rather than disability" (Forlin, 2010, p. 650). Participants were required to consider their attitudes towards the inclusion of students with disabilities, GAT students and EAL/D students, in mainstream classrooms (ACARA, 2013). Given that the success of inclusive education is generally assumed to be determined by teachers' attitudes (Sharma et al., 2006; Varcoe & Boyle, 2014), the findings of the present study are encouraging for teacher training institutions. The attitudes of participating pre-service primary teachers were generally positive. For the majority of survey items, responses indicated neutral to positive attitudes towards inclusion. This echoes findings throughout the relevant literature (Beacham & Rouse, 2012; Hsien, Brown & Bortoli, 2009; Kraska & Boyle, 2014; Rae, Murray, & Mckenzie, 2010; Swain, Nordness, & Leader-Janssen, 2012). It is important to note, however, that many studies in this field have focused on a change in attitudes of primary and secondary teachers across a single unit of study (e.g., Forlin et al., 2009; Hemmings & Woodcock, 2011; McCray & McHatton, 2011). The majority of those studies has also conceptualised inclusion only in terms of disability, rather than from a position of promoting education for diversity (Forlin et al., 2010; Hodkinson, 2005; Symeonidou & Phtiaka, 2009).

The second aim of this study was to examine how primary pre-service teachers' attitudes varied according to child-related, teacher-related and environment-related constructs. Child-related variables included exposure to children or persons with diverse learning needs and beliefs about the nature of ability (Avramidis & Norwich, 2002; de Boer et al., 2011). Participants' attitudes according to child-related variables overall were neutral to positive, but showed some variation according to the area of inclusion. Attitude scores for items relating to EAL/D students were more positive than for those in the other two areas. It has previously been found that pre-service teachers struggle to construct positive views of disability and that they may be unsupportive of the needs of GAT students (Bradshaw & Mundia, 2005; Carrington & Bailey, 2000; Troxclair, 2013). There is, however, limited research on pre-service teachers' attitudes towards students with EAL/D (Youngs & Youngs, 2001).

In an Australian study, pre-service teachers were found to have lower expectations of, and be less confident about teaching, EAL/D students than students who are deaf (Ting & Gilmore, 2012). This conflicts with the finding of the present study, though other research has demonstrated teachers' positive attitudes towards the inclusion of EAL/D students in mainstream classrooms (Reeves, 2006; Youngs & Youngs, 2001). The results may be explained by examining the structure of the pre-service training programs undertaken by the participants. The coverage of content, especially in the area of giftedness, did not appear to be as consistent as for EAL/D and disability across all three target institutions' programs. Indeed, very few Australian institutions feature a compulsory unit on gifted education in primary pre-service training (Gallagher, 2007; Taylor & Milton, 2006).

Teacher-related variables include pre-service teachers' beliefs about their responsibility to cater for diverse students, their training and demographic characteristics (Avramidis & Norwich, 2002). Participants' attitudes according to teacher-related variables were in the neutral to positive range. Attitudes relating to teachers' responsibility for GAT students, EAL/D students and students with a disability and the need for specific training were particularly positive. This awareness of all students is important, as "teachers who believe it is their responsibility to instruct students with special education needs in their inclusive classes are more effective overall" (Jordan et al., 2009, p.538).

The demographic information of participating primary pre-service teachers was collected as extraneous variables that may influence their attitudes towards inclusive

education. Female participants had slightly more positive attitudes overall compared to the male participants. This is consistent with some previous research (e.g., Ahsan et al., 2012; Bartley, 2014; Youngs & Youngs, 2001). However, others have found the opposite result and argued that findings according to gender have remained too inconsistent to suggest any causal relationship (Ahmmed et al., 2012; Sharma, Shaukat, & Furlonger, 2015).

It has been argued that direct experiences with people with special educational needs cannot be assumed, universally, to foster inclusive attitudes (Lancaster & Bain, 2007). Exposure was, however, a predictor of more positive attitudes towards inclusion in this study. Substantial literature has focused on the strong influence of exposure on teachers' inclusive attitudes, especially towards students with disabilities (Ahmmed et al., 2012; Caroll et al., 2003; Forlin et al., 2009; Jung, 2014; Lambe & Bones, 2006). Stemberger and Kiswarday (2017) reported in a study of 252 teachers that there was no significant relationship between exposure and attitudes. Despite this, teachers reported positive attitudes towards inclusion of students with disabilities.

Across all constructs, final year primary pre-service teachers' attitudes were significantly more positive overall than their first year counterparts, suggesting some positive change brought about by the training years. This mirrors similar recent research on pre-service teacher attitudes according to year of study (Kraska & Boyle, 2014). The change was statistically significant for first and fourth year participants' attitudes towards EAL/D students and according to teacher-related variables. This result mirrors the findings of Flores and Smith (2009) which demonstrated teachers' positive attitudes towards their training and responsibility for linguistically and culturally diverse students.

Pre-service teachers' beliefs about educational settings and access to support and resources were considered to be environment-related variables (Avramidis & Norwich, 2002). Attitudes according to this construct were the least positive compared to the child and teacher-related variables. This is consistent with the findings of a recent study of pre-service primary and secondary teachers, a third of whom indicated uncertainty about or a lack of support for an inclusive classroom setting even after taking a course in inclusive education (McCray & McHatton, 2011). Ambivalent attitudes towards inclusive settings specifically for GAT students have also previously been found (Gallagher, 2007). The results suggest a need for training institutions to more explicitly address issues of inclusive setting, resourcing and support in their teacher education programs (Avramidis et al., 2000).

Limitations

This study has several limitations. The teacher preparation programs from which participants were drawn were geographically limited to metropolitan Australia. Though further Australian research is required, generalisation of these results may be limited, given the unique student population (Kim, 2011). Importantly, the study is cross-sectional and direct causal inferences should not be made about relationships identified in the data, such as between the attitudes of first and fourth year participants (Jung, 2014). Trends that may have been elucidated by a longitudinal design may also be lacking (Woodcock, 2011).

Participation in this study was voluntary, and therefore the sample is slightly skewed. Substantially more fourth year primary pre-service teachers participated in the study, compared to students in first year, limiting interpretation of the results. Given that an online survey was used, participants may have found a pattern or responded in what they perceived to be the expected or 'correct' way (Beacham & Rouse, 2012). It is also important to note that the results of this study only reflect participants' understanding of and attitudes towards the theory and principles of inclusion. Pre-service teachers' perceptions do not necessarily

match the reality of their classroom practice (Gravett, Henning, & Eiselen, 2011). Participants may have claimed positive attitudes towards the notion of inclusion, but remain concerned about their lack of knowledge about applying this paradigm to pedagogy in the classroom setting (Hodkinson, 2005).

The understanding of different institutions' primary pre-service training programs, including the number of days of professional experience, has mostly been elicited from the universities' websites. The program and course descriptions provide only brief information about the nature and pedagogy of these courses and may not be entirely representative of actual practice (Kim, 2011). Additionally, while course structures were noted from this available information, integration of content on inclusive education and inclusion of students with disabilities, GAT students and EAL/D students may not have been explicitly advertised on the universities' websites. It was intended, as part of this study, to compare the number of professional experience days between the university programs as a teacher-related variable. However, the results were not substantial enough in sample size to draw any conclusions with regard to attitudes according to training programs. It is recommended that future research address this issue, as previously suggested in the literature (Florian, Young, & Rouse, 2010; Swain et al., 2012).

Conclusion

This study examined primary pre-service teachers' attitudes towards inclusive education across the training years. It is important that pre-service teachers emerge from their training with positive attitudes towards inclusion and equity, as these may predict inclusive classroom practice and negative attitudes are difficult to reverse (Bradshaw & Mundia, 2006; Pearce, 2009; Swain et al., 2012). Results indicate that a positive change in attitudes was brought about by pre-service training, between the first and final years of study. Attitudes were particularly positive towards EAL/D students and according to teacher-related variables. It was revealed that attitudes towards the inclusion of GAT students and students with disabilities, and in terms of the educational setting, resourcing and support, may require attention from teacher educators.

It has previously been recommended in the literature that pre-service teacher training be differentiated in order to cater for the dissimilar needs, experiences and demographic characteristics of trainee teachers (Forlin et al., 2010; Forlin et al., 2009; Varcoe & Boyle, 2014). Given the heterogeneous population of pre-service teachers entering training (Gomez, 1994; Pearson, 2009), and the impact of their differences on inclusive attitudes, the findings of this study seem to support this suggestion. The Australian Curriculum stipulates that primary teachers are responsible for meeting the learning needs of GAT students, EAL/D students and students with disabilities as part of an inclusive philosophy for education (ACARA, 2013). The results of the present study suggest that these areas are not being equally addressed in pre-service education, the purpose of which should be to foster teachers' positive attitudes towards prioritising inclusion as they enter into the teaching profession (Symeonidou & Phtiaka, 2009; Woodcock et al., 2012). Future research using a larger sample size may help to further inform and enhance Australian primary teacher education programs.

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Appendices
Appendix 1: Survey Instrument

Pre-Service Teachers' Attitudes towards Inclusion

SECTION 1

Gender: Male ☐ Female ☐

Age: _____ years

Birthplace: City: _____
Country: _____
Cultural Background: _____

Personal Background:

I have a disability:	Yes ☐	No ☐
I have (a) friend/s with a disability:	Yes ☐	No ☐
I have (a) members of my family with a disability:	Yes ☐	No ☐
I had (a) friend/s with a disability in my class at my school:	Yes ☐	No ☐
There was a class for students with disabilities at my school:	Yes ☐	No ☐
I was enrolled in a class or school for gifted students:	Yes ☐	No ☐
One or both my parents have completed a university degree:	Yes ☐	No ☐

Program:

Bachelor of Education (Primary) at: _____

Year of Study: 1st ☐ 2nd ☐ 3rd ☐ 4th ☐

I have completed a: Mandatory unit of study   Elective unit of study

Special and inclusive education:	Yes ☐	No ☐	Yes ☐	No ☐
Gifted education:	Yes ☐	No ☐	Yes ☐	No ☐
English as an additional language or dialect:	Yes ☐	No ☐	Yes ☐	No ☐

I have completed a practical experience/fieldwork focused in:

Special and inclusive education ☐ Gifted education ☐ EAL/D ☐

In undertaking study in the following curriculum areas, I have been shown how to personalise learning for students with diverse learning needs:

	Not completed	Gifted	Disability	EAL/D
English	☐	☐	☐	☐
Mathematics	☐	☐	☐	☐
Science	☐	☐	☐	☐
History/HSIE	☐	☐	☐	☐

SECTION 2

Please provide your level of agreement with the following statements; **circle the number** to represent your level of agreement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1 All classroom teachers are teachers of English as an additional language or dialect.	1	2	3	4	5
2 The best way to meet the needs of the gifted students is to enroll them in special classes and/or schools.	1	2	3	4	5

Please provide your level of agreement with the following statements; **circle the number** to represent your level of agreement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3 Learning support processes should be in every school to assist students with additional learning needs.	1	2	3	4	5
4 Prior to enrolling in the regular school, students should learn to become proficient in English.	1	2	3	4	5
5 All schools are adequately resourced to meet the needs of the gifted.	1	2	3	4	5
6 When planning to meet the needs of students with English as an additional language dialect, you start from the content in the syllabus that corresponds to their chronological age.	1	2	3	4	5
7 Planning to allow students to engage with learning through a range of flexibly designed activities maximises a teacher's ability to accommodate all students' needs in the regular classroom.	1	2	3	4	5
8 Students learning English as an additional language are as likely as their peers to apply themselves to their school work.	1	2	3	4	5
9 All teachers are teachers of the gifted.	1	2	3	4	5
10 The education of students with a disability is the responsibility of the whole school community.	1	2	3	4	5
Adaptations to the physical school environment may be required for the inclusion of students with disabilities.	1	2	3	4	5
By separating students into gifted and other groups, we increase the labelling of children as strong-weak, good-less good etc.	1	2	3	4	5
Regular classroom teachers are responsible for making decisions about adjustments to assessments for students with disabilities.	1	2	3	4	5
Regular classroom teachers should be required to receive training so they are professionally prepared to meet the needs of linguistic minorities.	1	2	3	4	5

15 Gifted students can not cope well socially in the regular school.	1	2	3	4	5
Regular schools do not have the resources to cater for students with significant disabilities.	1	2	3	4	5
Collaboration with a learning support team is key to designing quality learning activities for students with diverse learning needs.	1	2	3	4	5
Planning to meet the needs of students in the classroom is a moral responsibility of the class teacher.	1	2	3	4	5
Personalising learning within the regular classroom is the responsibility of a specialist teacher.	1	2	3	4	5

Please provide your level of agreement with the following statements; **circle the number** to represent your level of agreement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
20 Students with disabilities will improve their social skills when placed in a regular education classroom.	1	2	3	4	5
Catering for a student with limited-English in the classroom is detrimental to the learning of the other students.	1	2	3	4	5
We have a greater moral responsibility to give special help to children with disabilities than to gifted children.	1	2	3	4	5
Students with disabilities have the right to be educated in the regular classroom regardless of the severity or type of disability.	1	2	3	4	5
Grade skipping should be used as a strategy to accommodate the needs of students with specific gifts and talents.	1	2	3	4	5
25 Some teachers feel their authority threatened by gifted children.	1	2	3	4	5
Parents should have the major responsibility for helping their child develop their specific gifts and talents.	1	2	3	4	5
Specialist schools should be made available to enroll students with diverse learning needs.	1	2	3	4	5
Students learning English as a second language will need content from earlier or easier levels of the syllabus/curricula.	1	2	3	4	5
It is unreasonable to expect a regular classroom teacher to teach a child with limited English.	1	2	3	4	5
30 Teachers should commence planning for all students at the age related content area within the syllabus/curriculum.	1	2	3	4	5

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Teachers enhance their planning for the gifted through encouraging the use of higher order literacy and numeracy skills.	1	2	3	4	5
Students learning English as an additional language have difficulty making friends in the regular school.	1	2	3	4	5
Teachers plan from higher grade level content to accommodate the needs of gifted students.	1	2	3	4	5
A specialist teacher should be solely responsible for teaching students with English as an additional language in regular schools.	1	2	3	4	5
35 Regular classroom teachers are responsible for the education of students with disabilities.	1	2	3	4	5
Teachers catering for a student with EAL/D personalise their planning using the EAL/D Learning Progression.	1	2	3	4	5

Please provide your level of agreement with the following statements; **circle the number** to represent your level of agreement.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
We should invest supplementary funds and support for gifted and talented students.	1	2	3	4	5
Teachers commence planning for students with disabilities from content in lower stages.	1	2	3	4	5
Special education teachers are best equipped to meet the needs of students with disability.	1	2	3	4	5
Students with disabilities are more disruptive than students without disabilities.	1	2	3	4	5

THANK YOU