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INCLUSIVE EDUCATION, SUPPORT PROVISIONS AND EARLY CHILDHOOD EDUCATIONAL PATHWAYS IN THE CONTEXT OF SWEDEN: A LONGITUDINAL STUDY

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The purpose of this study was to investigate the educational pathways of a group of children with and without special educational needs from the last year in preschool to 1st grade. Fifty-six children participated and 65 educational settings were visited. A longitudinal and mixed method approach was adopted. Data was collected via observations, conversations, interviews and a questionnaire. Over the early school years, the number of children with special educational needs increased. Their need of support ranged from some needs, to high and to very high needs. The support was integrated into ongoing activities and offered among peers, as well as provided in the form of one-on-one training and therapy, one-on-one conversation and after school training. The settings were comprehensive or specialised in a certain diagnosis, and the application of inclusion ranged from non-existent, to integrated activities and partial and full inclusion. The findings are related to national and international discussions on the topics of inclusive education, support provisions and early childhood educational pathways.

Introduction

Inclusive education and support provisions

Inclusive education is considered important for children's social and academic development, for combating discrimination and for creating welcoming communities (Booth & Ainscow, 2002; Odom et al., 2004; United Nations Convention on the Rights of Persons with Disabilities, UN CRPD, 2006; World Conference on special needs education; access and quality, The Salamanca statement, 1994). Inclusive education is a broad concept that can be related both to practical and philosophical aspects. In a practical sense, it refers to the participation of children with and without special educational needs and disabilities in the same educational activities, routines and play and to their provision of support (Sandall et al., 2008; Soukakou, 2012). In a philosophical sense, it refers to human rights, social togetherness and an appreciation of diversity. The forms and levels of inclusive education may vary from integrated activities to partial inclusion or full inclusion (Guralnick, Neville, Hammond & Connor, 2008; Hanson et al., 2001). The educational settings where staff member do not apply any elements of inclusive education can be referred to as self-contained programmes, special classes or segregated programmes (Hanson et al., 2001). Even though considerable attention is paid to inclusive education in policies and in research, sceptical opinions are being declared. Hanson et al. reported that "support for inclusive educational placements for children with disabilities has not been without controversy regarding its benefits for all children" (2001, p. 66).

Support provisions for children with special educational needs in educational settings can be described as 'additional help and attention', 'special needs support' or as 'special support' designed to enhance participation in activities, routine and play, and to improve and facilitate learning (Swedish Education Act; 2010:800; Sandall et al., 2008; Sandberg, Lillvist, Eriksson, Björck-Åkesson & Granlund, 2010). Children

with special educational needs may need curriculum modifications and adaptations, explicit child-focused instructional strategies, ample feedback and augmentative and alternative communication methods and tools in order to belong, thrive, participate and learn in educational settings (Sandall, Schwartz & Joseph, 2001; Sandall et al., 2008; Soukakou, 2012). The lack of adequate additional help and attention might therefore create situations where children with special educational needs cannot benefit from their education and belong to a class.

Early childhood educational pathways in the context of Sweden

The concept of educational pathways refers to children's education and care over time and to the transitions that are taking place between different school forms (Hanson et al., 2001). Such transitions entail changes in activities and relationships (Bronfenbrenner, 1979), which can be critical for children (Ekström, Garpelin & Kallberg, 2008). In Sweden, the early childhood educational pathway encompasses two main transitions (Swedish Education Act, 2010:800). The first transition takes place when the children move from preschool to the preschool-class and leisure-time centre, and the second takes place when children start compulsory school 1st grade.

Access to preschool, which is the first stage of education, is a right of all children aged one to five years old (Swedish Education Act, 2010:800; Swedish National Agency for Education, SNAE, 2011a). Approximately 83% of the children aged 1-5 years old (SNAE, 2013a) attend preschool when their parents work or study. An estimation is that circa 17% of the children enrolled in preschool (Lillvist & Granlund, 2010) need additional help and attention. The main tasks of preschools are to educate and care for children, provide ample opportunities for play and social togetherness, and to prepare children for school. In preschool, and in all the following stages of the early school years education, children with special educational needs have a right to support provisions. The national policy for preschool does not make explicit use of the concept of inclusive education as a vision, goal or method, but states each child's right to education, support and attending a preschool close to home. It also underpins that children with difficulties and disabilities shall be offered a place in preschool without delay (Swedish Education Act, 2010:800). Preschool-class (e.g., pre-primary class) follows after preschool (Swedish Education Act, 2010:800; SNAE, 2011b) and is one year in length. It offers three hours of educational activities and playing in the morning and is often located in compulsory school buildings. Approximately 95% of all 6 years old attend preschool-class (SNAE, 2013a). Its main tasks are to stimulate development and learning, provide opportunities for play and social togetherness, and to prepare children for school. The preschool-class policy is interwoven into the policy for school and leisure-time centre. After preschool-class, children start compulsory school 1st grade (Swedish Education Act, 2010:800; SNAE, 2011b) (Figure 1). Approximately 20% of the children in a class receive additional help and attention, and a total of 40% receive support at some point over their school years (Giota & Lundberg, 2007). Children with intellectual disabilities can attend a 'compulsory school for children with learning disabilities' and children with intellectual disabilities who have a more considerable need of support provisions and additional help and attention can attend a 'compulsory school for children with learning disabilities with a training school orientation' (SNAE, 2011c). Approximately 1% of the children are enrolled in an alternative school (SNAE, 2013a). A child registered in the compulsory school for children with learning disabilities can, however, receive education within a regular school if the responsible authorities, head-teachers and parents agree on this (SNAE, 2013b). In Sweden, there are also special schools for children who are deaf, deaf-blind, or who have profound language disorders, a visual impairment or additional disabilities (Swedish Education Act, 2010:800; SNAE, 2011d). Since the daily duration of preschool-class and school is not as long as parents' work or study, children go to a leisure-time centre in the afternoons. The children from 1st grade and the preschool-class commonly attend the same leisure-time centre (Figure 1). Its main tasks are to complement the preschool-class and school in terms of stimulating children's development and learning, and it is also to offer children a meaningful recreation and leisure time (Swedish Education Act, 2010:800; SNAE, 2011b; 2011c; 2011d). Children with intellectual disabilities are commonly enrolled in leisure-time centres located in the compulsory schools for children with learning disabilities.

The United Nations Committee on the Rights of Persons with Disabilities (2014) have commended Sweden for its inclusive education system, where only few children (circa 1%) are educated outside the regular schools in agreement with parents. However, the Committee has also reported concerns. In Sweden, and in particular in its education system and amongst decision makers, there is lack of knowledge about different disabilities, such as relevant factors and accommodation needs related to disabilities. They urge Sweden to "guarantee the inclusion of all children with disabilities in the mainstream education system and ensure that they have the required support" (UN, 2014, p. 6).

Phase 1 Transition 1 <ul style="list-style-type: none"> • Preschool 	Phase 2 Transition 2 <ul style="list-style-type: none"> • Preschool-class 	Phase 3 <ul style="list-style-type: none"> • 1st grade • 1st grade for children with learning disabilities • 1st grade for children with learning disabilities with a training school orientation • Special school 1st grade for children who cannot attend regular schools or schools for children with learning disabilities due to disabilities or other reasons, who are deaf, deaf-blind, or who have profound language disorders, visual impairment or additional disabilities.
	<ul style="list-style-type: none"> • Leisure-time centre in the afternoons 	

Figure 1. The three initial phases of the education system in Sweden and the two main transitions made between these phases.

Previous research on educational pathways

Early childhood educational pathways in the context of Sweden have been investigated previously, but there appears to be limited research on the educational pathways of children with special educational needs. Via ethnographic approaches, Swedish education researchers have described pathways from preschool-class to 1st grade (Sandberg, 2012), children's perspectives of transitions to and from preschool-class (Ackesjö, 2014), transitions from preschool-class to 1st grade and how children become familiar with and make sense of school (Lago, 2014). In these studies, the early childhood education transitions and pathways are related to both challenges and opportunities. Sandberg (2012) found that preschool-class teachers commonly organised and provided support to children with special educational needs by themselves in ongoing activities, whilst in school the children were provided support on the side. She also found that the teachers were generally positive towards inclusive education but that they hold some reservations. Moreover, she reported that leaving classrooms for training could be a negative experience for the children who were pulled-out.

Educational pathways from preschool to school have been previously investigated in other contexts (Guralnick et al., 2008; Hanson et al., 2001). In the United States Hanson et al. (2001) examined 33 young children's participation in inclusive programmes over their early school years. They reported that the forms of inclusive education varied. The children's educational settings were fully inclusive, partially inclusive or adopting integrated activities. Hanson et al. (2001, p. 71) defined these forms of inclusive education as follows: In full inclusion placements, "children with disabilities participated as full members of the general education class". In partial inclusion placements, children with disabilities participated in typical age appropriate programmes for at least 50 % of their school day and part of the school day in separate experiences with other children with disabilities. Settings adopting integrated activities "were those programs in which children with disabilities were predominately in self-contained experiences but participated in joint classes of activities with age appropriate typically developing children". These activities "occurred on a regular basis and were planned to support interactions between the two groups of children". The children's educational settings were also in the form of segregated programmes. In these programmes, "the only contact between children with and without disabilities was incidental in public areas" (Hanson et al., 2001, p. 71). Hanson et al. (2001) described that the placements in segregated programmes occurred when the children with disabilities started kindergarten, but placements into segregated programmes also occurred and even increased when the children started 1st grade. Thus, the most dramatic shift towards segregation occurred between kindergarten and 1st grade. In total, 60 % of the children with delays and disabilities that had been placed in some level of inclusive setting in preschool remained in inclusive education until the end of 2nd grade. Guralnick et al. (2008) investigated the continuity and change of 90 children with mild development delays in the United States from full inclusion early childhood programmes through the early elementary period. They reported that most of those children remained in some level of inclusion over time, but the full inclusion placements decreased and the partially inclusive settings increased substantially in the transitions to 1st and 2nd grade. In their study, there were no children who attended segregated programmes in the early school years. They also reported that the children's characteristics, such as the level of cognitive and language development, were associated with less inclusive placements in the early school years. They put forward that "placement in full-inclusion programs during the early childhood years creates a momentum to continue maximum participation in inclusive settings over time" (Guralnick et al., 2008, p. 237).

Aim, research questions and rationale

The purpose of this study is to investigate the educational pathways of a group of children with and without special educational needs from the last year of preschool inclusive education to school 1st grade in several Swedish municipalities. A study on early childhood educational pathways concerning children with and without special educational needs is motivated by the still limited research and knowledge on the topic. It is also motivated by its ability to provide reports and implications for research, policy and practice about early school year settings, as well as the forms of inclusion applied and the support presently employed over these years. The provision of such reports and implications may have particular importance for practice, since these could support the planning and application of inclusive education, increase the didactical knowledge on support provisions and special educational needs, and provide insights concerning children's experiences of transitions between educational settings. It may also shed light on variables that tend to obstruct inclusive education and are considered positive aspects of segregated programmes. A study on early childhood educational pathways can also form basis for interesting comparison with other contexts and enable mutual learning on these topics. The following questions are addressed: How do the special educational needs and abilities of the children change from the last year in preschool to compulsory 1st grade? Which types of support provisions are provided to the children and are there any changes from the preschool period in this regard? What types of educational settings are the children enrolled in after preschool? Which changes in activities and relationships occur in the early childhood education transitions? Will the placements in inclusive settings change (decrease or increase) over the early school years? Which variables seem to be associated with a decreased/ increased propensity to inclusive education?

Method

The present study is part of a longitudinal study on the early school years in Sweden, framed by a bioecological model for human development (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 1998), in which the same set of children was followed from the last year in preschool to compulsory 1st grade. The preschools where the study started were purposely selected to represent socio-economic variation, a variation of geographical locations, sizes, pedagogical profiles and local authorities, and to ensure that children in need of support provisions were enrolled.

During the study verbal and written information about the study was given to the head teachers, staff, parents and children and consents were obtained from all the participants. Fifty-six children (28 boys and 28 girls) and 65 educational settings (preschools, n=8; preschool-classes, n=17; leisure-time centres, n=20; 1st grade classes, n=20) in five municipalities in the middle east of Sweden were enrolled. During this period three children without reported special educational needs left the study. The eight preschools were visited by the first author in the years 2012 and 2013 for a total period of two months; the preschool-classes and leisure-time centres were visited in the spring 2014 for a total period of one month; the compulsory 1st grades were visited in the autumn 2014 and the spring 2015 for a total period of one and a half months. The majority of the leisure-time centres were visited during the preschool-class data collection period but some were visited during 1st grade data collections.

Previous research on the settings and children enrolled in the study

A description of the preschools such as their support provision, resources and organisational typologies and the children enrolled in this study can be obtained in XXX (*blinded for review*) and in XXX (*blinded for review*). A short presentation of the transition from preschool to preschool-class can be obtained in a conference presentation (XXX, *blinded for review*). Results from these studies are taken advantage of in this study so as to enable longitudinal descriptions and analyses of the educational pathways from preschool to 1st grade. In short, the preschools were 'comprehensive and fully inclusive' (n= 6), 'specialised and partially inclusive' (n= 1) or 'specialised and adopting integrated activities' (n= 1). In the comprehensive and fully inclusive preschool units, typically developing children as well as children with various special educational needs participated in the same activities, routines and play throughout the days. In the specialised and partially inclusive unit, typically developing children as well as children with the same type of disability participated in the same activities, routines and play, but the children with disabilities were on a regular basis pulled out for one-on-one training and speech therapy. In the specialised unit that adopted integrated activities, the children with the same types of disabilities regularly met typically developing children in, for example; outdoor play, gross motor activities and song times, but spent the most time in a self-contained programme. The abilities of the 56 preschool children varied and their need of support provisions ranged from some needs to high and very high needs. A majority of the children were considered as typically developing in the sense that they were not regarded as having a need of support provisions. The children with some need of support provisions had difficulties in certain areas such as social skills and/or learning, but had

no case of disability diagnosis. The children with a high need of support provisions had difficulties in the areas of social skills, speech, communication and/or learning, and had in some cases a disability diagnosis. The children with a very high need of support provisions showed low levels of ability in several areas: social skills, learning, limbs, communication, muscle tone, health and vision (ABILITIES Index, Simeonsson & Bailey, 1991). They had intellectual disability, autism and Down syndrome and were provided considerable support during educational activities, routines and play. The preschool support provisions aimed to enhance participation and learning and were environmental, that is, related to objects, modification and adaptations in the settings and interpersonal, that is, related to staff and peers. In the specialised preschool units, the children were also pulled-out and provided one-on-one training and speech therapy, and in some cases, an extended timeframe in preschool were provided. After preschool, a majority of the children ($n=43$) moved to fully inclusive preschool-classes, while a handful ($n=5$) went to a partially inclusive preschool-class and three children, who had previously attended a fully inclusive preschool unit, moved to a segregated preschool-class programme. Three children who had high or very high need of support provisions had an extended timeframe in preschool and, for this reason, did not have a regular transition to preschool-class and 1st grade.

Data collection methods

A mixed methods approach (Johnson, Onwuegbuzie & Tumer, 2007; Teddlie & Tashakkori, 2010) was adopted. The data was collected via direct observations in the settings, from researcher to staff conversations during fieldwork and from shorter case study interviews (Yin, 2014) at a time and place chosen by the staff. Field notes were made. Data was also collected via the ABILITIES Index questionnaire (Granlund & Roll-Pettersson, 2001; Roll-Pettersson, Granlund & Steenson, 1999; Simeonsson & Bailey, 1991; Simeonsson, Chen & Hu, 1995). Via the questionnaire, data on children's functional and developmental status were collected and the comparable profiles obtained were calculated (ABILITIES Index: Research Composite Score (AIRCS), R.J. Simeonsson, personal communication, May 28, 2014). The ABILITIES Index has 18 subdivisions on a 5-point scale in which a high number indicates many problems and low abilities regarding audition, behaviour, social skills, cognitive ability, limbs, communication, muscle tone, health and vision. The ratings were done with assistance from the first author by staff who knew the children well. In a few cases the first author determined the ratings out of available data and fieldworks.

Analyses

Frequencies and percentage were used to describe the children's statuses concerning special educational needs. Means and ranges were used to describe the children's ability levels. A one-way between-groups ANOVA was adopted to investigate the relation between AIRCS scores and the children's need's groups. In this study, a value of $p < .05$ denoted significance and the eta squared was calculated and considered as small (.01), moderate (.06) or large (0.14 or above) (Cohen, 1988). Moreover, a thematic analysis approach (Braun & Clarke, 2006) was applied in the data analyses. The categories of full inclusion, partial inclusion, integrated activities and segregated programmes obtained from Hanson et al. (2001) were employed in the thematic analysis. In addition, the terms some, a high and a very high need of support provisions, integrated support provisions, one-on-one training and speech therapy, extended timeframes and comprehensive and specialised organisational typologies obtained from XXX and XXX (*blinded for review*) were employed in the thematic analysis.

Validity

In an attempt to ensure the trustworthiness of the study we adopted multi-method data collections to enable triangulations, visited the settings on days that the staff considered to be representative and visited each setting for at least one full day in order to observe indoor and outdoor educational activities, routines and play. During the observations the data collector was careful to not interrupt activities, routines and play. We also made efforts to follow all the children with and without special educational needs from preschool to school. Moreover, the staff was supported during the application of the questionnaires to decrease the risk for errors in the interpretation of the questionnaire's items.

Results

The result begins with a description of the children's statuses concerning special educational needs, need levels and ability levels during their early school years. This is followed by descriptions of the preschool-classes, 1st grade classes and leisure-time centres. The preschools have been described in previous studies (XXX *Blinded for review*; XXX *Blinded for review*). The result section concludes with an overview of the children's educational pathways from preschool to school. In keeping with the bioecological model, child characteristics such as abilities and needs are considered part of the biosystem, classroom characteristics are considered part of the microsystem, allocation of resources is considered part the exosystem and changes over time are considered part of the chronosystem.

A description of the children's statuses, needs and abilities

An overview of the children's abilities and needs is presented in Table 1. Approximately half of the children ($n=29$, 52%) were regarded as having special educational needs. Almost half of those ($n=14$, 48%) were in need of support provisions throughout their early school years. During the early school years the total number of children without a formal disability diagnosis (SEN) considered to have special educational needs doubled from 9 to eighteen children. The total number of children with a formal disability diagnosis (SEND) considered to have special educational needs was more constant. There were some children who 'stepped into' as well as 'stepped out of' considerations as a child in need of support. Just as in preschool, classification of the children's special educational needs ranged from some need of support provisions to a high or very high need of support provisions in the preschool-classes, leisure-time centres and school classes. The children with high and very high needs, with few exceptions, remained in the same need group over their early school years. The children's ability levels varied and ranged from an AIRCS of 0 up to a score of 71. On a group level, the estimated AIRCS of the children with SEN were lower than the scores of the children with SEND, but there were children with disability diagnose who had low AIRCS and children with SEN who had somewhat high scores.

A one-way between-groups ANOVA analysis of variance was conducted to explore the difference in AIRCS as measured by the ABILITIES Index for children with special educational needs. Children were divided into three groups according to their need's levels (Group 1: some needs; Group 2: high needs; Group 3: very high needs). There was a statistically significant difference at the $p < .05$ level in AIRCS for the three groups: $F(2, 58) = 185.6$, $p = .000$. The differences in mean scores between the groups were large. The effect size, calculated using eta squared, was .86. Post-hoc comparisons using Turkey HSD test indicated that the mean scores for Group 1 ($M = 4$, $SD = 2.66$), Group 2 ($M = 18.9$, $SD = 10.5$) and Group 3 ($M = 51.7$, $SD = 11.4$) were significantly different from each other. A higher AIRCS was associated with higher levels of needs and support provisions.

A description of the preschool-classes

After at least some level of preschool inclusion, the children, with exception of those who had an extended timeframe in preschool, moved to preschool-class and the leisure-time centre. In the transitions from preschool to preschool-class, all children received new staff and teachers, and also some new peer relationships. A majority of the preschool-classes ($n=13$, 77%) enrolled children with special educational needs who participated in this study. These preschool-classes were divided into four groups: (1) 'comprehensive and fully inclusive' ($n=9$, 53%), which means that typically developing children and children with various difficulties and diagnoses were enrolled in the same activities, routines and play throughout the days; (2) 'modified, comprehensive and fully inclusive' ($n=1$, 6%), which means that typically developing children and children with various difficulties and diagnoses were enrolled in a small class and the same activities, routines and play throughout the days; (3) 'comprehensive and partially inclusive' ($n=1$, 6%), which means that typically developing children and children with various difficulties and diagnoses were enrolled in the same activities, routines and play, but the children with disabilities were on a regular basis pulled out for one-on-one training and speech therapy; and (4) 'specialised in a certain disability diagnosis and segregated' ($n=2$, 12%). A comprehensive preschool-class could have up to 25 children and one teacher to 21 children (1:21). The modified comprehensive setting had few children enrolled ($n=10$) and had one teacher and one teacher-aide. The segregated preschool-classes were located within, next to or separated from regular schools, but during the observations the only contact between the children in the segregated programmes and the children in the regular schools was incidental in public areas. The number of children in these classes was low (>8) and the staff to child ratios were high (1:1). The children that were enrolled in these segregated programmes had intellectual disabilities and a very high need of support provisions. In contrast to the preschool units, there were no preschool-classes that were inclusively oriented and that were specialised in certain difficulties or disability diagnoses. As in preschool, the children were provided 'integrated environmental and interpersonal support' and 'one-on-one training and speech therapy'. In addition, they were also engaged in 'one-on-one conversations' in which the staff boosted the self-esteem of the child with ample positive feedback, intended to reduce unappropriated behaviours of child or clarify preschool-class activities and routines. None of the children had an extended time frame in preschool-class. In Table 2, some examples of preschool-class support provisions are provided.

Table 1. (1) Frequencies of total numbers of children, (2) frequencies (and percentages) of typically developing children, (3) frequencies (and percentages) of children in need of support provisions and their needs' levels, and (4) the children's mean and (range) AIRCS score over the early school years.

Data on the children's needs and abilities		Preschool	Preschool-class and leisure-time centre	School 1st grade and leisure-time centre
		Frequencies (%)	Frequencies (%)	Frequencies (%)
1	Total number of children	56	51	53
2	Typically developing children	40 (71)	34 (66.5)	28 (53)
3	SEN	9 (16)	12 (23.5)	18 (34)
	Some need of support	6 (11)	9 (17.5)	14 (26)
	High need of support	3 (5)	3 (6)	4 (8)
	SEND	7 (13)	5 (10)	7 (13)
	Some need of support		1 (2)	1 (2)
	High need of support	2 (4)	1 (2)	1 (2)
	Very high need of support	5 (9)	3 (6)	5 (9)
4	AIRCS	mean (range)	mean (range)	mean (range)
	SEN	7 (4, 20)	8 (0, 32)	8 (0, 40)
	Some need of support	5 (4, 6)	4 (0, 11)	4 (0, 10)
	High need of support	14 (6, 20)	21 (6, 32)	22 (3, 40)
	Very high need of support			
	SEND	40 (18, 71)	40 (3, 75)	41 (5, 56)
	Some need of support		3	5
	High need of support	18.5 (18, 19)	21	22
	Very high need of support	49 (29, 71)	59 (53, 75)	52 (49, 56)

Note. Children with Special Educational Needs *without* formal disability diagnosis, (SEN). Children with Special Educational Needs *with* a formal disability Diagnosis, (SEND).

A description of the school-classes

After preschool-class, or an extended time frame in preschool, the children started 1st grade. The children, with the exception of three children in a segregated preschool-class, changed staff relationships when they started 1st grade, but commonly the children kept the peer relationships from preschool-class. A majority of the school-classes (n=16, 80%) enrolled children with special educational needs who participated in this study. These were 'comprehensive and fully inclusive' (n=4, 20%), 'comprehensive and partially inclusive' (n=7, 35%) or 'specialised and segregated' (n=5, 25 %). There were no 1st grades that were inclusively oriented *and* that were specialised in certain difficulties or disability diagnoses. A comprehensive class could enrol up to 25 children and provide one staff to 25 children (ratio 1:25). Just as in preschool, the children were provided 'integrated environmental and interpersonal support' and 'one-on-one training and speech therapy'. They were also provided 'one-on-one conversations' as in preschool-class. In addition, they were provided 'after school trainings' in which staff gave additional help and attention in academics during leisure-time centre time, in small groups or individually. In Table 2 some examples of school support provisions are presented. One-on-one training and speech therapy was not provided in the fully inclusive settings, but the one-on-one training was common in the partially inclusive and segregated programmes. During the observation of one-on-one training some children showed interest in the activities taking place in the classroom. One child also left her training for a moment in order to be able to see what her peers did, and to be sure that they were still there. During the observation of one-on-one trainings it also happened that children returned to classes in the middle of an ongoing activity such as a story circle time or a song time.

A description of the leisure-time centres

The children, with few exceptions, attended leisure-time centres in the afternoons, after preschool-class and school. The staff in the leisure-time centres commonly worked in the preschool-classes in the mornings. The children from the same class often attend the same leisure-time centre, and they also commonly attend the same leisure-time centre as of the preschool-class. A majority of the leisure-time centres (n=17, 85%) enrolled children with special educational needs who participated in this study. These were 'comprehensive or fully inclusive' (n=11, 55%) or 'specialised and segregated' (n= 6, 30%). The children who attended specialised and segregated preschool-classes and 1st grade classes also attend specialised and segregated

leisure-time centres. The support provisions in the leisure-time centres could be grouped as 'integrated environmental and interpersonal support' and 'one-on-one training'. One-on-one training was not provided in the comprehensive leisure-time centres. A comprehensive leisure-time centre could have up to a hundred children and provide one staff for every 22 children (ratio 1:22). A couple of children with special educational needs in comprehensive leisure-time centres had one-on-one assistance and separate activities such as artwork with a staff member. The number of children in the segregated leisure-time centres were low (> 8) and the staff to child ratios were high (1:1). The children enrolled in these had intellectual disabilities and very high needs of support provisions.

A description of the educational pathways from the final year in preschool to school 1st grade

In Figure 2 the educational pathways of the children with special educational needs are illustrated. Over the early school years, the application of full inclusive education decreased and the application of partial inclusion and segregated programmes increased. The application of inclusive education for the children with low abilities, a very high need of support provisions and intellectual disability decreased the most. In fact, for these children any form of inclusive education terminated after preschool. The application of inclusive education for the children with some or a high need of support provisions was more constant: it changed from full to partial inclusion, or vice versa. In total, 69% of the children with special educational needs (n=11) who had been placed in some level of inclusion in preschool remained included, at the time of observation in 1st grade. In total, 29 % of the children with a formal disability diagnosis (n=2) who had been placed in some level of inclusion in preschool, remained included at the time of field work in school-classes 1st grade. These two children did not have a very high need of support provisions or intellectual disabilities. None of the children with a very high need of support and intellectual disability who experienced some level of inclusion in preschool remained included in 1st grade. Examples of four educational pathways (Figure 2) are as follows: (A) From comprehensive full preschool inclusion to comprehensive full preschool-class and leisure-time inclusion to comprehensive full school inclusion; (B) From comprehensive full preschool inclusion to specialised segregated preschool-class and leisure-time to specialised segregated school; (C) From specialised partial preschool inclusion to comprehensive full preschool-class and leisure-time inclusion (an up going arrow in Figure 2) to comprehensive partial school inclusion; (D) From specialised preschool adopting integrated activities to retention in the same preschool setting for one year to specialised segregated school and leisure-time.

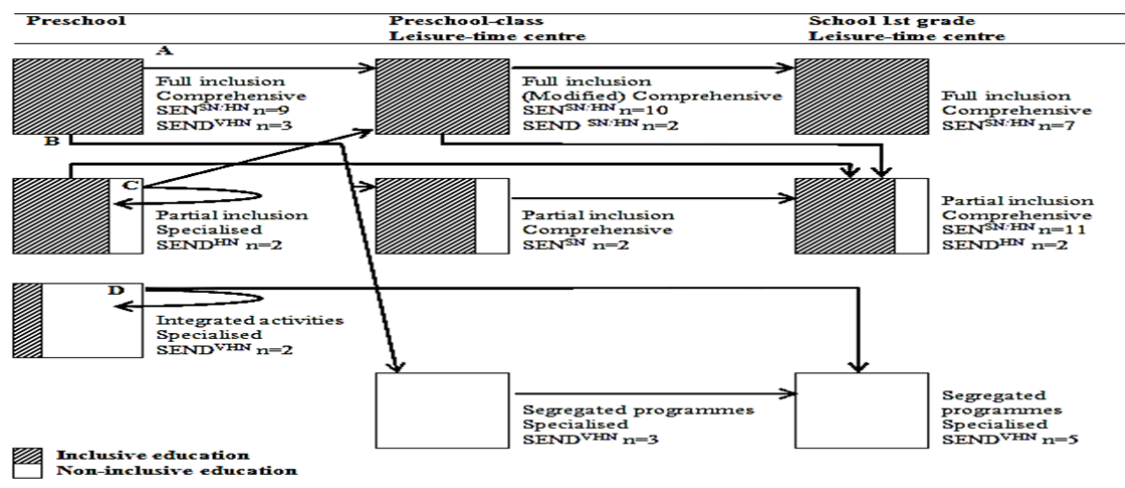


Figure 2. The forms of inclusion, the segregated programmes and the early childhood educational pathways from the last year in preschool to 1st grade for the children with special educational needs.

Note. Some Need of support provisions (SN). High Need of support provisions, (HN). Very High Need of support provisions, (VHN). Children with Special Educational Needs without formal disability diagnosis, (SEN). Children with Special Educational Needs with a formal disability Diagnosis, (SEND).

Table 2. The support types and some examples obtained from the preschool-classes, leisure-time centres and compulsory 1st grade classes, by Comprehensive Typology (CT) and Specialised Typology (ST).

Support types

Examples from the preschool-classes, leisure-time centres and compulsory 1st grade classes.

Environmentally oriented integrated support provisions

- Hearing protectors (CT).
- Time visualisations (CT; ST).
- Visualised schedules, encompassing illustrations and photographs, placed on the wall or at a child's school desk designed to describe a school day (CT; ST).
- Objects attached to the visual schedule for a child who had difficulties with visual perception in order to be able to 'feel' activities coming up during the day (ST).
- A decreased number of tasks during lessons (CT).
- Shortened circle times and lectures (CT; ST).
- Half-class education (CT).
- Ability grouped half-class education (CT).
- The opportunity to start outdoor recesses ahead of others since it took time to get dressed (CT).
- A desk close to staff (CT).
- Rewards such as tablet time and play time (CT).
- Reward systems, in the form of star or sticker collections which could be exchanged into a joyful activity with parents (CT).
- Picture Exchange Communication Systems® (ST).

Interpersonally oriented integrated support provisions

- The staff members provided kind verbal and gentle physical prompts to support participation in activities, routines, play, training and therapy, and sat next to the child with needs in circle times (CT; ST).
- The staff members were nearby during play to be able to support play and conflict resolution (CT; ST).
- The staff members provided ample positive feedback (CT; ST).
- The staff members provided ample individual step-by-step directions during transitions and schoolwork (CT; ST).
- The peers spontaneously provided positive feedback (CT).
- The peers spontaneously provided individual step-by-step directions during schoolwork (CT).
- One-on-one assistance during activities, routines, transitions and play, indoors and outdoors (CT; ST).
- The staff initiated play activities (CT; ST) and supported purposeful use of toys (ST).
- Adoption of children's augmentative and alternative communication strategies such as sign instructions (CT; ST).
- Team teaching: a special educator and a teacher worked within the class to support participation and learning (CT).

Academic, social and functional oriented one-on-one training and speech therapy

- Trainings provided by child-minders, teachers, assistant nurses, special educators and/or speech and language therapists.
- Children trained to respond on their names with a staff (ST). Children trained to communicate via spoken words, signs and pictures with a staff (CT; ST). Children were offered therapy in speech and language (CT; ST). Children trained fine and gross motor skills with a staff, labelling and grouping of fruits, labelling and grouping of animals, labelling and grouping of infrastructures, labelling and grouping of clothes, writing such as making big circles, reading such as turn pages in a book and recognise letters and maths such as counting to ten (ST). Children trained reading, maths and mother tongue with a staff (CT). Children trained eating and toileting with a staff member embedded in mealtimes and toileting (ST). Children trained to open doors, turn on lamps, find the way to the taxi, climb stairs, and get dressed for outdoor play with staff embedded in routines and transitions (ST).
- These were provided daily (ST), a couple of days per week (CT) or weekly (CT), for approximately 20-50 minutes each.

One-on-one conversations:

- Conversation provided by teachers or special educator. Teacher or special educator and child discussed the forthcoming day in order to inform and prepare child for his/her school day (CT).
- Teacher or special educator to child meetings with the intention of increase self-esteem of child (CT).
- Social stories designed as comics intended to reduce unappropriated behaviours of child (CT).

After school trainings:

- One-on-one training or small group training in school subjects during leisure-time provided weekly by teachers for approximately 30 minutes (CT).

Note. Several of the examples of support provisions such as individual schedules, sign instructions and speech therapy in the preschool-classes, leisure-times and 1st grades were also adopted during the preschool period.

Discussion

In this study, the educational pathways of a group of children with and without special educational needs from the last year in preschool inclusive education to 1st grade in several Swedish municipalities were

investigated in order to provide reports, insights and implications for research, policy and practice about early school year settings, as well as the forms of inclusion applied, the transitions and the support presently employed over these years.

Special educational needs in early school years

The findings suggest that the number of children who need additional help and attention may increase over the early school years and that the children with special educational needs may be a heterogeneous group with different abilities and needs in early school year settings. This means that the concept of special educational needs can refer to both children with some need of support provisions and to children with a very high need of support provisions. The concept can be considered multidimensional and applicable in many situations, but could at the same time be considered vague since it carries different meanings. The findings suggest also that the needs of children are not necessarily the same over the early school years and instead possibly changing. This means that it can be difficult to predict which children will be regarded as being in need of support in the future, from the experiences of a previous school phase. There seems to be a noteworthy exception in this regard. Children with a high need of support provisions and children with a very high need of support provisions appear likely to be regarded as having about the same levels of needs during their early school years. These insights can be important to take into account during transitions and in support provisions planning.

It is possible to hypothesise that the increased number of children in need of additional help and attention in the settings investigated was related to the fact that the educational demands on the children increased over the early school years. Therefore, an increased focus on individual children's academic achievements in preschools and evaluations of how the children in preschool make use of their opportunities for learning in preschool activities, routines and play would likely increase the number of children in preschool regarded as having special educational needs. One could also hypothesise, without referring to the increased educational demands, that the staff in the participating preschool-classes, leisure-time centres and schools drew a narrower line concerning the concept of typically developing children. Possibly this line was more generous in the inclusive preschools since several staff in these had experiences of children with considerable needs and thereby had developed a broader perspective and a different understanding of the phenomenon of special educational needs. Thus, the increased number of children with special educational needs may not only be related to increased educational demands, but also to perspectives and experiences of staff.

Support provisions

The findings propose that a number of support provisions can be needed in early childhood educational settings for enhancing and facilitating participation and learning of children with special educational needs. Those might be in need of 'integrated environmental and interpersonal support', 'academically, socially and/or functionally oriented one-on-one training and therapy', 'one-on-one conversations' and 'after school trainings'. This means that support provisions and likewise special educational needs can be understood as a multidimensional concept and suggests that early school years staff needs to have wide-ranging knowledge in support provisions in order to meet the needs of all children. The findings also propose that an extended timeframe is not considered as needed in preschool-classes and that the need of one-on-one provision may increase over the early school years. The fact that one-on-one provisions increased could be related to the increase in educational demands and focus on academic achievements, but may also be related to low commitment to fully inclusive education among staff. This assumption is supported by the fact that team teaching (see Table 2) between special educators, therapists and teachers was not common in this context.

In line with the research of Sandberg (2012) there seems to not only be potential benefits with pulled-out provisions, but also possible negative consequences. For example, one child during one-on-one training returned to her classroom in the middle of a story time and another seemed concerned over not knowing what her peers did. This result suggests that children who leave their peers and classrooms for one-on-one provisions can miss out on opportunities for learning with peers, a sense of belonging in class and a coherent school day. Such negative consequences could perhaps explain why some staff offered after school training.

Organisational typologies and inclusive education

Early school year settings may take the form of 'comprehensive and fully inclusive', 'modified, comprehensive and fully inclusive', 'comprehensive and partially inclusive' or 'specialised and segregated' settings. In comparison to preschool units, school settings seem not likely to take the form of a 'specialised and inclusive' setting. This means that preschool-classes, leisure-time centres or school-classes adopting some form of inclusive education seem unlikely to have a specialisation in certain difficulties and diagnoses.

After the preschool period in the context investigated the segregated programmes were started and all the children with low abilities, very high needs and intellectual disabilities moved to these programmes. This means that children with special educational needs who have some needs or a high need of support provisions are likely to attend more or less inclusive settings after preschool, whereas children with low abilities, a very high need of support provisions and intellectually disability seem likely to attend segregated school classes and leisure-time centres after at least some form of inclusive preschool education. In these settings, they certainly train several useful and valuable skills with staff and are provided ample support, but in these segregated programmes the children will come to lack opportunities for support, meetings and connections with typically developing children. Thus, in contrast to what happened during the preschool period, there was a separate and alternative pathway for the children with low abilities, very high needs and intellectual disabilities in the preschool-classes, leisure-time centres and schools. Therefore, the biosystem of children could be considered as a key factor for placements in inclusive or segregated preschool-classes, leisure-time centres and schools.

Since the school policy (Swedish Education Act 2010:800; SNAE, 2011c, 2011d), and not the preschool policy (Swedish Education Act 2010:800; SNAE, 2011a), proposes alternatives to regular education for children with intellectual disabilities, segregation after preschool seems to be likely for this group of children. It was, however, unexpected to find that the alternative preschool-classes, leisure-time centres and schools enrolled in the study all implemented 'full' segregation. In the segregated programmes the children were completely separated from the typically developing children and there were no efforts at adopting integrated activities during observations. In an age when inclusive education is recommended and can positively impact child development (Booth & Ainscow, 2002; Odom et al., 2004; UN CRPD, 2006; World Conference on special needs education; access and quality, The Salamanca statement, 1994) a goal of offering participation experiences and learning in activities with typically developing peers could be expected and also interpreted as desirable. An *absolute* division into different educational settings of children with and without low abilities, very high needs and intellectual disabilities could be interpreted with concern. When children are divided into different school groups they do not get to know each other and they do not gain an understanding of diversity, and those who attend preschool together may lose their contact.

Seeing that some of the children enrolled had low levels of cognitive ability, did not communicate through speech, had intellectual disabilities and considerable caring needs, an application of full inclusion could have seemed difficult to achieve for the teachers and other staff. On the other hand, an application of integrated activities, and possibly of partial inclusion, would have been possible to plan and realise without insurmountable difficulties. With integrated activities and partial inclusion, the children with disabilities would have opportunities to meet other children for support, activities, routines and play, and the other children will have the opportunity to continue meeting them as they did in preschool. We did not have the opportunity to examine any form of inclusive education for children with low abilities, a very high need of support provisions and intellectual disability in preschool-class, leisure-time and school 1st grade since all those started segregated programmes after preschool.

When this study is being compared with the study of Hanson et al. (2001) several similarities emerge. The educational settings could be described as segregated programmes, settings adopting integrated activities, partially inclusive settings and fully inclusive settings. Both the studies also found a curbing trend in the application of inclusive education over the early school years and that more than half of the children (60%; 69%) who have attended some form of inclusive education in preschool remained included in school. Comparing with the study of Guralnick et al. (2008) there are several differences. In the Swedish context, segregated programmes were adopted, an association between non-inclusive placements and cognitive disability and language difficulties was found, and initial full inclusion placements of children with developmental delays were not associated with a continuing placement in inclusive educations. In comparison to the study of Guralnick et al. (2008), the trust in inclusive education appears low in the investigated Swedish context.

Changes in activities and relationships

It can be assumed that both children with and without special educational needs will receive new staff and peers in the early school years transitions, and that children with special educational needs may come to gain new experiences concerning support provisions. It can also be assumed that children with low abilities, very high needs and with intellectual disabilities can be those who experience major changes. In this study, those children did not follow typically developing peers and friends to regular preschool-class, leisure-time and school, and some of them also started to receive one-on-one training after preschool. Indeed, early childhood

transitions can be regarded as critical events for children (Ekström, Garpelin & Kallberg, 2008) and infer changes in activities and relationships (Bronfenbrenner, 1979).

Limitations and suggestions for future research

This study has some limitations. The preschools in which the study started were purposefully chosen and the settings enrolled are not necessarily representative for other settings. Additional research on the topic of educational pathways needs to be conducted in Sweden. The validation and/or widening of the support provisions, organisational typologies and pathways patterns described could be a relevant task for future research. The study maps into the bioecological model (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 1998) since it takes into account variables and influences related to nature, nurture and time for child development, although the present design and data collection do not consent an examination of the effects of the educational settings. The examination of linkage between transition patterns, support provisions, organisational typologies and child outcomes is an important task for future (inclusive) education researchers in Sweden. One more limitation of the study is that no child with low abilities, a very high need of support provisions and intellectual disabilities started inclusive preschool-classes, leisure-time centres and schools, which created a research situation where only children with some or high needs could be observed in inclusive settings after preschool. The examination of inclusive school settings enrolling children with low abilities, very high needs and intellectual disabilities could be a relevant task for future research.

Relevance and implications for practice and policy

The study contributes with a description of early childhood educational pathways of children with and without special educational needs, and also provides descriptions of special educational needs, inclusive education and support provisions. One implication is to carefully consider the transformation of segregated programmes into settings adopting integrated activities in order to ensure at least some meetings and connections between children with and without low abilities, very high needs and intellectual disabilities. An additional implication concerns the coordination of one-on-one provisions and classrooms activities. In settings where pull-out provisions are provided, staff should pay attention to the coordinating of pull-out training and classroom activities, and consider the provision of training embedded among peers and the application of team teaching. The staff may also consider informing the child about classrooms-activities taking place during and after pull-out training. The impressions from the observations made in the settings suggest that doing so would positively influence the children with special educational needs' membership in class, task orientation in pulled-out training, and learning within class since they would be less likely to return in the middle or at the end of activities. One more implication concerns the development of systematic collaborations between staff in preschools, preschool-classes, leisure-time centres and schools on the topics of inclusive education, support and educational pathways. Such collaborations would possibly enable the sharing of experiences and facilitate the mutual learning among staff and build teacher capacity concerning, for example, inclusive education, support provisions and integrated activities.

Ethical considerations

Guidelines and recommendations from the Swedish Research Council (2011) have been followed. In 2012, the study was approved by the Regional Ethical Review Board at Karolinska Institute in Stockholm (XXX).

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Competing interests

The authors declare that they have no competing interests.

Authors' contributions

XXX conceptualised the study, gathered the data and wrote-up the article. XXX conceptualised the study and contributed to the write-up of the article and to the revision of final manuscript.

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(XXX Three references have been removed to make the article anonymous).

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EXPLORING COMMUNICATION TECHNOLOGY BEHAVIOUR OF ADOLESCENTS WITH CEREBRAL PALSY IN SINGAPORE

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Communication among adolescents with cerebral palsy can be restricted with traditional Augmentative and Alternative Communication (AAC) device coupled with environmental and social barriers. The advance of communication technology offer solutions to reduce such barriers. Given that there is limited research in communication behaviours of adolescents with cerebral palsy using communication technology devices in Singapore, this study investigated the change in behaviour of adolescents with cerebral palsy as a result of using communication technology devices. A total of nine adolescents with cerebral palsy (N = 9, Males = 7 and Females = 2, Age = 14 – 18 years) were recruited from a special school in Singapore. A modified interview questionnaire (Lund & Light, 2007) was administered to determine if communication technology devices changed communication behaviours among adolescents with cerebral palsy. Using a qualitative approach, data were analysed by open and axial coding software, HyperRESEARCH (Hesse-Biber, Kinder & Dupuis, 1990). Four core categories emerged from this study which included (1) Desire and ability to communicate, (2) Navigation of devices (3) online self-disclosure and (4) Devices and applications. Overall, adolescents with cerebral palsy use social media and mobile chat to stay in touch with peers and family for school-related purposes and personal reasons. Based on the findings of this study, the authors suggest that the use of communication devices can expand the social network of adolescents with cerebral palsy.

Introduction

Communication Technology Devices and Platforms for Communication and Friendships

Communication is defined as the process of sharing information and ideas. Communication can be successfully achieved through communicative functions such as seeking social interactions, making requests and negotiations of an object or social interactions (Hallahan, Kaufman & Pullen, 2012, p. 267).

Communication technology devices are a category of Augmentative and Alternative Communication (AAC) and one which individuals with disabilities use to communicate. There are several types of AAC devices ranging from low-technological options such as gestures, visuals, and sign language to high-technological devices such as Speech Generating Devices (SGD) and Voice Output Communication Aids (VOCA).

In the last decade, there has been a rise of generic communication technology devices. Bryen (2006) defined generic communication technology devices as the use of land-line telephones, email, Internet (eg. Group chat, instant messaging, interactive gaming), cell phones, fax machines and specialized AAC devices. More recently, Smartphone and computer tablets have gained a large market share for mobile technology. This increase has given consumers numerous options to share ideas and chat in real time regardless of where they are in the world at a touch of the button. Social media sites have revolutionized communication allowing people to communicate instantly across time-zones in real time. The low cost of using these sites has also been another reason for its popularity. Most of these sites have a free sign up that allows users to link to other social networking sites. Users can access these sites with a communication technology device that allows

them to access the Internet. The sites provide the individuals a means to communicate in private and without the demands of instant reciprocity when using their natural voice.

Use of Communication Technology among Individuals with Physical Disabilities

Successful communication using AAC devices largely depends on the function of the technology, the severity of the individuals' disabilities with regards to their physical, sensory and cognitive functions. The ability of their carers or aides to intervene for individuals with physical disabilities whenever there was a communication lapse between the AAC user and another person is a determining factor on a successful two-way communication using AAC devices (Higginbotham, Shane, Russell, & Caves 2007).

Factors that promote the communication for individuals with physical disabilities are willingness of non-disabled persons to interact with individuals with disabilities, addressing similarities between the two groups generated better outcomes of acceptance with individuals with disabilities. By contrast, factors which reduced interaction opportunities between the disabled and non-disabled population included the type of AAC devices used by the individuals with physical disabilities (Lilienfeld & Alant, 2005; Lund, 2006; McCarthy & Light, 2007). Non-disabled adults preferred to interact with individuals with disabilities who possess AAC devices with voice output as compared to low-tech systems such as message boards attributed to the lower number of opportunities of interactions for individuals with physical disabilities (Lund & Light, 2006). Attitudes of the society and the comfort level of the AAC user are influential to communication. McCarthy and Light (2005) discussed the impact of attitudes on the opportunities and societal participation for the physically disabled. The authors reported that positive attitudes provide support to these individuals while negative barriers restrict do not promote an inclusive society.

Ease of Access to Communication Technology Devices

The ability to successfully navigate in a social media site is dependent on the user's confidence to access the social media site. Adolescents with cerebral palsy may possess the desire to want to communicate on social media sites but may not have the knowledge of what is the etiquette of beginning communication on social media sites. Raghavendra, Newman, Grace and Wood (2013) reported that the participants in their study did not know how to initiate or respond to communication on Facebook. The poor response was due to the lack of exposure to the platform, low expectations of the participants to use social media sites and parents preventing their children from exploring social media sites. The authors emphasized on the importance of technical knowledge when operating communication technology devices (Raghavendra et al., 2013).

Literacy Competence Using AAC and Communication Technology Devices

The level of literacy to communicate with others to establish online relationships may hinder the use of AAC and or communication technology devices (McNaughton, Rackensperger, Benedek-Wood, Krezman, Williams & Light, 2008; Raghavendra et al., 2013). Selecting the appropriate vocabulary and sentence structure can be difficult for some users (McNaughton et al., 2008; Raghavendra et al., 2013). The user's current age, exposure to language, vocabulary expectancy for his chronological age would be factors which affect the literacy levels of the user. McNaughton et al., (2008) reported that a child with a physical disability required time to learn where the words were stored in his AAC device. The participant had to figure out the sequence of the word order to form sentences to communicate. Stoner, Angell and Bailey's (2010) single case study of a 16-year-old male adolescent with athetoid cerebral palsy reported that the participant was successful in using his AAC device because he had above average cognitive skills with reading and math skills at grade level.

Challenges Faced by Individuals with Cerebral Palsy when Using Traditional AAC Devices

Understanding the purpose, benefits and limitations of traditional AAC devices such as SGD and VOCA can help to further reiterate the benefits of using communication technology devices for socializing. Lund and Light's (2007) longitudinal study of young adults with cerebral palsy and complex communication needs (Age range = 19 - 23) reported that social support such as an inclusive community and strong parental advocacy could promote greater opportunities for interaction. In addition, the expectations of success and family involvement in intervention can contribute positive outcomes towards the experience of the AAC user (Lund & Light, 2007). Similarly, Dattilo, Estrella, Estrella, Light, McNaughton and Seabury's (2008) study in an online forum for individuals with cerebral palsy aged between 27 to 44 years old (N = 8; Females; n = 4, Males; n = 4) reported that their AAC devices provided support as well as restrictions when they wanted to engage in leisure activities. Two of the participants attributed part of their independence to the AAC devices that they had which promoted independence and a life more fulfilled with the use of their communication devices. However, certain features of the AAC devices limited the participants' ability to fully participate in outdoor activities. Communication technology devices such as Smartphones, computer tablets and computers

can reduce the language barriers as there are many different pre-set language inputs in the devices. These devices are readily available in Singapore from mobile service providers and computer retail outlets. Communication technology devices are used by the disabled and non-disabled population.

Few studies have reported favourable feedback from AAC users with physical disabilities on the use of communication technology devices online (McNaughton & Bryen, 2007; Rackensperger, Krezman, McNaughton, Williams & D'silva, 2005; Raghavendra, et al., 2013). The feedback included increased opportunities to learn and socialize within the family, community and globally as a result of having the environmental and social barriers significantly reduced when communicating online (McNaughton & Bryen, 2007; Rackensperger et al., 2005; Raghavendra, et al., 2013).

Traditionally, AAC are used mainly for face-to-face communication and several studies have reported mixed results on the success of high technical equipment on the communication used by users with physical disabilities with communication needs (Beck et al., 2010; Lilienfeld & Alant, 2005; Lund, 2006; Trembath, et al., 2010). However, there are a few studies which have reported success among users with physical disabilities on their experience when using the computer to log on to the Internet to email friends and families (Dattilo et al., 2008; McNaughton & Bryen, 2007; Sundqvist & Rönnerberg, 2010).

Communication technology devices can provide meaningful social participation among individuals with cerebral palsy. Obst and Stafurik (2010) reported that websites catering to individuals with physical disabilities have increased the levels of social support among the users. These websites targeted to individuals with physical disabilities provide avenues to share, guide and foster new friendships through online forums and newsgroups. Sundqvist and Rönnerberg (2010) noted the significant contribution that the Internet has provided for communication. The authors wrote that it paved the way for individuals with disabilities to stay in touch with what is happening around them and maintaining and establishing old and new networks (Sundqvist & Rönnerberg, 2010).

Wilson, Washington, Engel, Ciol, and Jensen, (2006) assessed the level of motor functioning through the use of a modified version of Gross Motor Functioning Classification Scale (GMFCS; Palisano, Rosenbaum, Walter, Russell, Wood and Galuppi, 1997). When conducting interviews with the participants parents or guardians. There were five levels in this scale in which Level I was the ability to walk without restrictions but would have difficulties in higher gross motor skills. Level V was severely limited mobility with the use of assistive technology for example, power wheelchair. Levels II to IV have increasing limitations in functioning. The authors reported that adolescents with milder types of physical disabilities, who were participants at Level I in the GMFCS, were more mobile and therefore had more opportunities to engage in social activities such as extracurricular activities, outings with peers and received encouragement from their social circle (Wilson et al., 2006).

In summary, there is limited information about the perceptions of adolescents with cerebral palsy using communication technology devices. Studies show favourable feedback experienced from the participants when traditional AAC devices were not able to fulfil their communication needs (Lidström, Ahlsten & Hemmingsson, 2010; Mavrou, 2011; Raghavendra, et al., 2013). Communication technology devices allow for real-time communication that does not require its users to be face-to-face. Instead, users can be at their current location to communicate immediately with their communication partners.

This study explored the communication behaviours of adolescents with cerebral palsy in Singapore when using communication technology devices. Specifically this study asked how do communication behaviours of adolescents with cerebral palsy change when using communication technology devices.

Method

The Participants

Nine adolescents (Age Range = 14 to 18 year olds) were recruited using convenience sampling from local special schools (see Table 1). Letters of consent was obtained prior to commencement of the research. This research was approved by the Institutional Review Board (IRB, Early Childhood and Special Needs, The National Institute of Education, Nanyang Technological University, 2012).

Table 1
Description of the Participants

Participants	Age	Gender	Disability	Devices Used
P1	17	Male	^a Cerebral Palsy	Computer, laptop, iPhone
P2	18	Female	^b Cerebral Palsy	iPhone 4
P3	17	Male	^c Mild Cerebral Palsy	Galaxy Note, iPad, laptop, PS3
P4	18	Male	^c Diplegia with left Hemiplegia	Laptop, 2G handphone (no Smartphone functions and Data bundle)
P5	16	Male	^c Spastic Diplegia	IBM laptop, Samsung Galaxy Ace connected through WIFI
P6	15	Male	^c Spastic Diplegia	iPhone, Samsung Galaxy Ace 2, laptop, computer

Note. a Obtained medical diagnosis from Green Cross Medical Centre, Singapore

bNo referral letter found - last reference to diagnosis on file from doctor conducting in the school Orthoclinic

c Obtained medical diagnosis from Kandang Kerbau Women's and Children's Hospital (KKH), Singapore

dObtained medical diagnosis from Lifeline Loyang Point Medical Clinic, Singapore

Table 1 (continued)
Description of the Participants

Participants	Age	Gender	Disability	Devices Used
P7	15	Male	^c Spastic Diplegia	Samsung Smartphone, iPad, laptop
P8	14	Male	^c Left Hemiplegic Cerebral Palsy	Computer, 2G handphone (no Smartphone functions and data bundle)
P9	18	Female	^d Spastic Cerebral Palsy	Smartphone, laptop, computer

Note. a Obtained medical diagnosis from Green Cross Medical Centre, Singapore

e No referral letter found - last reference to diagnosis on file from doctor conducting in the school Orthoclinic

f Obtained medical diagnosis from Kandang Kerbau Women's and Children's Hospital (KKH), Singapore

g Obtained medical diagnosis from Lifeline Loyang Point Medical Clinic, Singapore

Procedures

The face-to-face interview. All individual face-to-face interviews were conducted at the school premises. With the exception of one participant who used an iPad 2 to communicate text-to-speech, eight participants communicated with the researcher. The face-to-face interview took 90 minutes to complete and was conducted in a quiet therapy room equipped with a computer with internet access.

(i) The interview process. The participants' responses in the questionnaire were recorded on the interview questionnaire. After the participants answered each question, confirmation to ascertain the authenticity was carried out to ensure that the information recorded was accurate

Assessment Instrument - Modified Interview Survey Questionnaire

(i) The interview questionnaire. Based on a pilot study, the questions in Lund and Light (2007) were modified to include contingent questions and further refinement to facilitate the participants to expand on their initial response. The questions were rephrased clearly and specifically relating to communication technology devices. The modified questionnaire considered the level of English of the participants. Irrelevant questions in relation to this study were removed. Based on the pilot study, questions on online self-disclosure to ascertain the communication behaviours and level of safety taken by the participants online was added to the modified questionnaire. In addition, a senior Speech and Language Therapist (SLT) from the special school reviewed the modified questionnaire prior to the final use of the questionnaire in this study.

The Reduction and Analysis of Data

(i) Face-to-face interviews. All the data from the face-to-face interviews were transcribed individually. The responses were analysed through the use of the qualitative approach of data analysis by coding the data (Lund & Light, 2007). The types of questions in the questionnaire generated categories used in open coding. The

categories were generated from the interview transcripts.

(ii) **Core categories and emergent themes.** The transcribed data were reviewed and analysed further to include emergent themes. The four core categories that emerged from the coding corresponded with the five questions and sub-questions. A total of four core categories corresponded with four different questions and these included: Question one was Devices and Applications, Question two was Navigation of device, Questions three and four were Desire and ability to communicate and Question five was Self-disclosure. The method of open coding was used to categorize concepts which were recurrent in the participants' responses (Creswell, 2008, p. 434-437). The questions were formulated to have a general focal point. For example, question one discusses the types of communication technology devices and the applications used. Question two discusses the usability of the communication devices. Question three and four dealt with the emotions and skills when using communication devices to interact with others. Question five discusses the online safety measures when communicating online. The responses received were in tandem with the categories formulated from the questions. At the end of the open coding process, outlines of the categories were generated as the main headings which were directly related to the questions.

(iii) **Sub-themes.** The second level of coding was axial coding. This coding was done to justify the emergent categories based on the responses given. Responses from the sub-questions of the core categories were further analysed to derive emergent sub-themes. These emergent sub-themes which were similar were clustered together. This process of coding, categorizing and developing of themes were done for all transcripts individually after which all the core categories and themes were merged together. For example, for the first core category of Desire and ability to communicate, seven sub-themes emerged from the participants' responses: disclosure of disability- impact of communication, face- to- face communication - face-to-face communication vs online communication, feelings- establishing social support, frequency of communication, online communication- face-to-face communication vs online communication and people participants communicate with – expansion of social network. The frequency derived from the core categories and sub-themes were calculated from the number of times the participants mentioned the salient points within the core categories and emergent themes after coding and categorizing the data.

Data were analysed using HyperRESEARCH, a Computer-Aided Qualitative Data Analysis Software (CAQDAS), (Hesse-Biber, Kinder & Dupuis, 1990). This software enabled coding, retrieving and building on emergent themes. The responses were categorized based on the emergent themes and further analysed to the sub-themes within the software.

Results

Four Core Categories

Four core categories emerged from this study. These included (1) Desire and ability to communicate (2) Navigation of devices, (3) Online self-disclosure and (4) Devices and applications. The four core categories were from the most to the least influential when asked questions pertaining to the participants' communication behaviours when using communication technology devices (see Table 2).

Desire and ability to communicate. All the participants (N = 9, 100%) responded that the majority of the people they communicated with online were peers and volunteers from their school (see Table 3). Four of the participants (44%) responded that they formed friendships online with other adolescents whom they have never met or met only after some time of communicating online. The results showed that the participants communicated with people with and without physical disabilities. Five of the participants (56%) revealed their disabilities to individuals they never met online. Four of the participants' (44%) disclosed of their disability to their online communication partners which had an impact on the participants' communication outcomes (see Table 3).

Table 2. Summary of Sub-Themes Contribution to Participants' Socialization (N = 9).

Core Category	Sub-Theme	Percentage Mentioned % (n)	Sub-total of Frequency Mentioned
Desire and ability to	Disclosure of disability -	89 (8)	45

communicate	Impact of communication		
	Face-to-face Communication -	56 (5)	Sub-total of Frequency Mentioned
		Percentage Mentioned % (n)	
	Face-to-face vs online communication		
	Feelings - Establishing social support	100 (9)	
	Frequency of communication	100 (9)	
	Online communication - Face-to-face vs online communication	33 (3)	
	People participants communicate with - Expansion of social network	100 (9)	
Navigation of devices	Phone communication	11 (1)	45
	Accessing applications - Convenience	100 (9)	
	Challenges	100 (9)	
	Convenience	100 (9)	
	Duration	100 (9)	
	Ease on devices - Using devices with ease	100 (9)	

Table 2 (continued)

Summary of Sub-Themes Contribution to Participants' Socialization (N = 9).

Core Category	Sub-Theme		
Online Self-disclosure	Strangers	100 (9)	36

	Familiar people	100 (9)	
	General self-disclosure	100 (9)	
	Socializing with online friends	100 (9)	
Devices and applications	Communication devices	100 (9)	27
	Mobile applications	100 (9)	
	Social media sites	100 (9)	

Note: Total frequency score =153

The frequency that the participants spent online had a direct influence with their expansive social network. A longer time spent online meant that they had current information about their online friend's activities. It also enabled them to communicate more quickly and easily when they were connected online. Six of the participants (67%) responded that social media sites were used to gain updates of their online friends via news feed, chat and play online games (see Table 3).

In terms of establishing emotional support, five of the participants (56%) responded that social media sites enabled them to seek emotional support and to share their feelings. For example, Participant nine (P9) attributed her preference for online communication to her shy disposition due to her occasional unclear speech. On the other hand, Participant five (P5) reported that face-to-face communication were essential to build relationships and it allowed the participant to see the facial reactions of the communication partners (see Table 3). The results showed that the participants had various reasons to communicate using social media sites as well as mobile chat applications. These reasons included, establishing friendships, expanding social networks and a platform for emotional support (see Table 3).

Navigation of devices.

The results showed that the participants had several platforms to communicate using communication technology devices which included mobile chat applications and social media sites. All the participants (N = 9, 100%) responded that they could communicate with ease using communication technology devices (see Table 4). For example, Participant two (P2) reported that it was easy to navigate her Smartphone to access social media sites and mobile chat applications. Eight of the participants (89%) reported that they were able to navigate the social media sites and mobile chat applications with ease. Easy access enabled participant one (P1) to navigate multiple social media sites and mobile chat applications from his laptop and Smartphone. Seven of the participants (78%) reported that social media and mobile chat applications enabled them to overcome their social barriers such as instant reciprocity during face-to-face communication or environmental barriers such as navigating around places that have no barrier-free access or travelling in public transport that are not wheelchair-friendly (see Table 4). The results showed that eight of the participants (89%) have utilised a communication device for at least one year (see Table 4).

Table 3. Summary Sub-themes in Core Category of Desire and Ability to Communicate

People participants communicated with	Face-to-face vs online communication	Expansion of social network	Establishing social support	Impact of Communication
Friends from school, Volunteers from JC, YMCA camps, church friends. People never met, just know online, from other apps other countries. Talk about interest. Who start not important. (P1)	More confident online. Because if I talk to a person face-to-face I don't know how will the person react. I am afraid they will run or change topic based on my condition. It doesn't matter whether I'm in a chair or wheelchair behind the computer I am just P2. (P2)	I usually Whatsapp and Facebook. Sometimes everyday. Usually 2-3 times a week. (P3)	Yes. Don't need to think I am lonely anymore both on Facebook and Whatsapp. (P2)	For people I have never met, I will tell them about my condition, ask them if they don't mind. If I don't tell them now later, they will know. Depends on them. So if they don't want to be friends, they don't answer. (P1)
Friends from school, some from outside. Friends from outside are Facebook friends. They just add me. Some from other schools, rest not sure. For those on	Online. It's just a feeling. You can't see them and they can't see you, just see avatar. If see each other face-to-face, they tend to ask more of they questions. (P6)	Sister, need basis, relatives from overseas, - not so frequent school friends. Not really unless school holidays (everyday). Volunteers introduction from other people to new people to Facebook. When have something happiness updates on my blog etc. (P5)	Sometimes, when I happy I just SMS or during emergency (P4)	Tell some people I have never met on Facebook I have a physical disability, type on chat. Some can continue to be friends some run away. They think I'm just like any other girl. (P2)
Facebook I don't know, I think from Singapore. (P2)				

Table 3 (continued)

People participants communicated with	Face-to-face vs online communication	Expansion of social network	Establishing social support	Impact of Communication
School friends, outside friends (mother's friend son) so many.	Online. Shy, more understood as verbally [people] may not understand. (P9)	Normally on facebook to check news feed to see if I have messages or friend requests. Daily-2 hours interval or all day if there's something. Play games on Facebook such as Candy Crush. (P6)	Yes, eg. How are you today? 30 minutes rant [when have] Something to share. (P5)	They are accepting, most of them. There are some who say I look funny, walk weird, why you walk like this? Just delete them off Facebook. (P6)
Neighbourhood friends. (P3)				
My friends from school only. (P4) Sometimes they are busy online. Face-to-face outside [to meet]. (P3)	Face- to- face. Very easy to talk and understand. (P3)	Friends (all the time, no homework or what...just communicate with them). Use Facebook everyday at least twice, at least 2 hours each. To chat and read news. (P7)	Ya feel very happy. Because they also sometimes give me advise, motivation and support when I give up or I am sad. (P7)	They do know I have a disability. They just say don't mind be friends. I feel ok. (P9)
Sister, relatives from overseas, school friends, volunteers to keep in touch. (P5)	Face-to-face, more things to talk about it. (P4)	Facebook more than 5 times in a week. SMS when need to. (P8)	Okay because still keep in touch. (P8)	

Summary Sub-themes in Core Category of Desire and Ability to Communicate

People participants communicated with	Face-to-face vs online communication	Expansion of social network	Establishing social support	Impact of Communication
Friends (school mates, person that I meet outside with similar interests don't reveal too much information). Family (uncle on Facebook stays far away, uncle initiates chat) (P6)	Face-to-face, can see reaction. Real-life relationships can do things together. Family relationship important. (P5)	When I get a text, personal message, but will still go on Facebook to read news feeds. (P9)		
Friends (outside friends, classmates), family, cousins (P7)	Face –to-face. Facebook because I know all these person so I feel comfortable. (P7)			
My mum, my friends sometimes I need to know where they go and when they come back. (P8)	Face-to-face because they are friends and I like them. (P8)			
Friends from outside (Facebook), school friends and teachers. (P9)				

Note: Impact of communication is categorized within Disclosure of Disability sub-theme; Face-to-face vs online communication is categorized within Face-to-face Communication and Online Communication; Establishing social support is categorized within Feelings sub-theme; Expansion of social network is categorized within People participants communicate with sub-theme.

Table 4. Summary Sub-themes in Core Category of Navigation of Devices

Convenience	Duration	Using devices with ease	Challenges
In front of computer more comfortable talking. I'm a bit shy.	Facebook more than 3 years. Instagram about 1-2 years, YouTube	Whatsapp on phone is convenient. Computer easy to play games to	Sometimes, iPhone keyboard hard to type. I want to type one

(P2)	about 1 year, Twitter about 3 years. (P2)	see. Facebook ok, whatsapp convenient to talk and share photos. (P1)	word but keep pressing the wrong key. (P2)
Just have to type. Very easy. (P3)	Galaxy Note about 7 mths, iPad 2 about 1 year, laptop about 4 years, PS 3 very long use to connect to Internet. (P3)	Very easy and very fast. (P3)	No difficulty, sometimes tired typing and texting. (P4)
A bit easy helps to chat with other people. (P4)	Laptop about 2 years , phone about 3-4 years (P4)	Very easy to explore around. No difficulty sending text and whatsapp. So log on to Facebook, Instagram, YouTube, Twitter via iPhone. Convenient because it is all from one device. (P2)	When I start getting a phone, I need 1 day if difficult programming, 1 week. No difficulty typing. (P6)
Social media is a good thing. Can connect with friends because of the mobility issue. Check Facebook every day. (P5)	Laptop about 2 years, Samsung Galaxy ACE less than 1 year (P5)	Started email at 7 years , send journals to aunt. School into Facebook about 12-13 years old. SPD intro Twitter about 2 years not so active because not so many followers. YouTube to listen to music. (P5)	Auto correct on SMS, can be frustrating because it types something not intended. (P5)
Like when I meet a person, I ask him for Facebook or other contacts and if we are close friends use to plan outings (time and place to meet) call or message. (P6)	Samsung Galaxy Ace 2 about 1 month. Laptop about 3 months (P6)	When you use Facebook on computer and mobile you use your hands, no problem navigating between both. (P6)	

Table 4 (continued)

Summary Sub-themes in Core Category of Navigation of Devices

Convenience	Duration	Using devices with ease	Challenges
Easier no need to move around. (P7)	Samsung Smartphone about 2 years, iPad about 1 year, laptop more than 5 years (P7)3	I'm so... Used to it using all these. (P7)	

Talk verbally	Handphone since 12	Easy to operate.
sometimes they don't	years old, computer	Usually evenings.
understand. About 1	since 9 years old,	Talk about anything.
hour a day on social	laptop since 16 years	Movies, music, boys,
media. Facebook can	old. (P9)	English Station for
chat. Instagram can		music, MTV (Jersey
upload photos of		Shore) and music.
family and friends.		(P9)
(P9).		

Note: Accessing applications sub-theme has been merged with Convenience sub-theme and renamed Convenience.

Online self-disclosure. All the participants (100%) responded that they understood the importance of withholding personal information from strangers online because of safety reasons and identity theft (see Table 5). All the participants (N = 9, 100%) reported that they would give their mobile numbers to people they knew very well such as their school friends or family members (see Table 5). Eight of the participants (89%) reported that they would advise teenagers not to disclose their personal information of themselves to individuals who were unfamiliar. The participants attributed this to the dangers of online hackers, scammers, sexual predators and also overall sense of danger when disclosing personal information to individuals unknown to them (see Table 5).

Participants choice of devices and applications. Overall, participants used a range of communication technology devices which included Smartphones, laptops, tablet computers and computers. The results showed that all of the participants (N = 9, 100%) have used communication technology devices to communicate prior to the face-to-face interviews. The participants responded that they chatted, texted or made comments on mobile chat applications and social media sites such as Facebook and Twitter or photo sharing sites like Instagram. All of the applications were synced to the various communication technology devices and accessed through their usernames and passwords. The results showed that all the participants (100%) used short message sent (SMS) texting to communicate. Six of the participants (67%) used mobile chat applications and SMS to chat. The mobile chat application that these participants used was Whatsapp. Whatsapp operates by using the phone data bundle and this mobile chat application can be downloaded from App Store for iPhone users and Google Play Store for Android users (see Table 6). For example, participant six (P6) communicated with communication partners using other mobile chat applications. These mobile chat applications use the Internet data and may have free downloads. Texting using mobile chat application do not cost mobile carrier charges and payment is not required to be made to the service provider if the user exceeded the data bundle limit. Email was not a popular mode of communication among the participants. The results showed that all the participants had access and used social media sites to socialize. All the participants (100%) have Facebook accounts. Five of the participants (56%) have Instagram and Twitter accounts respectively (see Table 6).

Finger and hand control. Five of the participants (56%) reported that finger dexterity which affects the typing speed and spelling errors which were important to ensure successful communication.

Knowledge and ease of access. Five of the participants (56%) reported that confidence in accessing the social media sites and mobile chat applications and being comfortable in the process were important factors to ensure successful communication. Participant two (P2) reported that she was confident when logging onto the Internet to access the social media sites. Participant three (P3) and nine (P9) reported that it was important to feel happy and comfortable when communicating online (see Table 7).

Competence in Literacy. Two of the participants (22%) attributed having good vocabulary as an important factor to communication as it helped them to be understood when communicating online. Participant seven (P7) reported that good vocabulary, spelling, sentence structure and typing fast were important to successfully communicate online (see Table 7).

Strangers	Familiar people	General disclosure	self-	Socializing with online friends
No. Not say really know about me so not safe. Safety first. (P1)	Yes. If I know them very well then I give. If I not know them very well I won't give.	No. Some are hackers. Safety come first. Cannot suka-suka just give. A lot of people		Depends if you really know. Got to know for 1 year. Cannot just say want to go...go.

	Not for acquaintance. (P1)	are hackers. So for safety I won't give. (P1)	Safety is important. Friends I know I will go. Decide first things. Eg. Lunch, bowling etc. (P1)
People I just get to know just email for Facebook but handphone no... not really. Because it is dangerous I don't know that person. (P2)	Some maybe. Because some are not so close I don't know the person really well. About safety and danger. (P2)	No. Dangerous (P2)	There was one time, I met this girl at Junction 8. She knows about me. Chat and ate. Girl has no disability. Chat online for about 1 year then met up. Still in touch. Girl knows I'm on wheelchair. For school friends who have whatsapp, make plans to go out. If possible 1-2 times every few months. Go for movies. Chat 1 by 1. Go out with one other friend. Mostly, go out 2 persons, a girl last time from AWWA. (P2)

Table 5. Summary Sub-themes in Core Category of Online Self-Disclosure

Table 5 (continued)

Summary Sub-themes in Core Category of Online Self-Disclosure

Strangers	Familiar people	General disclosure	self-socializing with online friends
I give only to girls because I see the picture. Give handphone number when chatting online. For guys see picture like gangster I ignore but sometimes I give handphone if look like good boy I will give handphone. If a	Yes because they are my best friends. (P3)	Up to them, I don't care. If they want to give I don't care. None of my business. (P3)	Yes vivo city, Jurong Point, IMM JCube [to meet] online friend. Best friends and other friends, Vivo City. Happy go lucky. (P3)

girl ask to meet, I will meet outside like Vivo City. I always watch movies. I see how for guys. (P3)			
No, because once you give them they will pass to other people and they will come to my house if I don't know that person. It's dangerous. Handphone also no, very dangerous later become scam. (P4)	Handphone and address can...school friends yes. YMCA friends, I don't dare handphone number can but not home address. (P4)	No, it's very dangerous. (P4)	Don't go out with friends from school. (P4)
No, harassment, parents will ask why/what I am doing. (P5)	To my friends, school friends, yes email and handphone for Whatsapp only no address. Acquaintances no, Facebook chat. Other details no, because they may harass. Really close volunteers meet at least once and have same interests. (P5)	No cannot. Can get blackmail when get too close romantically and then get scam from \$500- \$50,000 from crime watch that I saw. Cannot give address because friends may give address to loan sharks who will harass you. (P5)	Unless it's a close friend or accompanied by family members. Have someone to look out for me after cousin said to make more friends. Seldom meet face-to-face like once or twice so wanna take train to see what they are up to. Older cousins, meet one at a time, Whatsapp then ask parents can meet (in the future when independent). (P5)

Table 5 (continued)

Summary Sub-themes in Core Category of Online Self-Disclosure

Strangers	Familiar people	General disclosure	self-socializing	with online friends
Full name if they want to know me. But first I will look at how they talk to see if suitable. Phone numbers – no. 4 emails active, if they don't ask I will not give. If they ask, I will ask them to chat	Yes. Because family members won't prank you. Can contact family when parents are not around or they can contact you. School friends, teachers I can give phone number for school info such as	Basically to ask the other party for their contact details instead of revealing mine. I will not recommend to give out address to acquaintances. If do give bear consequence of own actions if information	It depends if it's a girl or a boy. If people fake their gender? I don't usually go out with them. Unless teachers or school friends who have good reputation, I will go out maybe I will hang out with him or	

on Facebook. But if they insist, I give the one I don't particularly log in. (P6)	outings. If school friends call too often, I will set a block. (P6)	is revealed. No handphone coz number maybe passed around. Email also no unless you have many accounts so it's up to you. (P6)	her. If they are gangsters or have bad reputation, I will make excuse like I'm busy or have to do my work. School friends will go to Time Zone, temple, church, doesn't matter what religion... card shop (P6)
First name, rest of the info, no. Because I think it's safer. For starting to know the person, just give a little bit of info, don't give a lot. (P7)	For my friends, I will give them (HP no, email). For my twin brother's friends because meet only when there's projects and not meet so often so I will think about it. (P7)	I think it's not... because you may not know people. Now it is so high-tech, people can hack into your account anytime and use personal details. (P7)	No don't go out. (P7)
Handphone number, address and email – no. Because they are strangers and we don't know them. (P8)	Yes. Because they are my friends, I love them, I give them. Strangers no, I do not know so I don't give them. (P8)	No it is still strangers. Not nice to talk to strangers when we don't know them. (P8)	No, go out with family. School friends only during outings. (P8)

Table 5 (continued)

Summary Sub-themes in Core Category of Online Self-Disclosure

Strangers	Familiar people	General disclosure	self-socializing with online friends
No. Scared if they want to do something. If they say I want to go to your house when your parents are not at home. Handphone will give, sometimes lazy turn on Facebook so go to whatsapp. Not active on email. (P9)	Yes. Because they are family members and I know them. Friends form school, if they have anything important they can call me. (P9)	No because you just don't know them and you don't know their background. They might ask to go out with them, if you say don't want they may come to your house, parents not around, force to open your door. They may ask you to do	Only go out with friends from school not Facebook friends much I don't know them. Go bowling at Downtown East or go and eat. (P9)

something. (P9)

Table 6. Summary Sub-themes in Core Category of Devices and Applications

Mobile applications	Social media sites
Whatsapp, SMS, not really email (P1)	Four Square sometimes use, Instagrams depends on what I want to put. Group pictures of CCA friends from SDSC. Facebook alert then will check of read news feed. More than 4 times. Twitter not often. All connected to Facebook though iPhone. (P1)
Whatsapp, SMS, don't really use email (P2)	Facebook, Instagram, YouTube, Twitter (P2)
Whatsapp, SMS, email not really (P3)	Facebook, Instagram, Twitter (P3)
SMS. Laptop (email) (P4)	Facebook via laptop (P4)
Email, Whatsapp SMS (P5)	Facebook, Twitter, Blogger, YouTube (P5)
SMS, Email not often Whatsapp, Line, Viber, WeChat, Internet (P6)	Facebook (P6)
Usually SMS, Email not often unless for school work (P7)	Facebook, Instagram, Twitter (P7)
SMS, Email (P8)	Facebook 3 years (P8)
SMS, Whatsapp, Email (P9)	Facebook , Twitter, Instagram (P9)

Table 7. Participant Competencies to Communicate Successfully

Identified skills to possess for successful communication
Step-by-step. First, gradually... cannot first time use well. Under medication, if don't take hard to control hand function. (P1)
Confidence, knowing how to log into the sites. (P2)
Happy and comfortable. A bit difficulty typing using right hand but left hand ok because break my right hand. (P3)

Sometimes difficulty in spelling like a long sentence are difficult. Type a bit fast. (P4)

Good vocabulary, good social skills, sometimes feels awkward around. Siblings because they go to mainstream, school and the topics are not familiar. (P5)

Be sure what you want to ask, ask specific questions, don't be random.

Sometimes people get annoyed when asked 'crappy' or random questions. Then I say sorry. (P6)

Vocabulary and typing, spell properly. Make sure sentence are not broken. Type fast. (P7)

Type fast. Talk about school outings and hydro. Very good teachers and sometimes can get fierce. (P8)

More comfortable. (P9)

Discussion

Increased Socialization with Communication Technology

This study revealed that communication technology promotes socialization because it allowed the participants to communicate with multiple online friends simultaneously, a finding supported by other studies (McNaughton & Bryen, 2007). Social media sites and online chat applications enabled instant communication which did not require the participants to meet face-to-face. This modality was useful for a participant who was shy (see Table 3). While participants in this study were keen to communicate using communication technology devices, they showed preference towards face-to-face communication (see Table 3). These findings suggested that a combination of both communication technology devices and face-to-face social interactions appeal to adolescents with cerebral palsy.

The indicators of success were communication in the category of Desire and ability to communicate and Navigation of devices (see Table 2) which is supported by other research (Beck, Thompson, Kosuwan, & Prochnow, 2010; Cooper, Balandin, & Trembath, 2009; McNaughton & Bryen, 2007). For example, similar to McNaughton and Bryen (2007), this study revealed that all the participants (N = 9, 100%) established communication online using Smartphones, computer tablets, laptops and computers connected to the Internet to social media sites and mobile chat applications.

Reduced Social and Environmental Barriers

Communication technology devices reduced the environmental barriers to communication for the participants in this study (N = 9, 100%). Environmental barriers included the lack of space to manoeuvre with a wheelchair, places without ramps or lifts and public buses that are not wheelchair accessible (Wilson et al., 2006). In this study, participants three and six were able to move around independently. Hence, they could go out and meet people without having a family member to accompany them. Participant nine could move around independently on short distances and would meet her friends for leisure unaccompanied by family members. Participants five used a Kaye walker and would meet his close friends on his own. Participant eight could go out on school outings independently. However, as his family preferred that they go out together, he

would not go out with his friends outside school hours although he did not require assistive devices to walk (see Table 5).

The participants in this study who were independent walkers and or used Kaye walkers reported that they could make plans to socialize using their communication technology devices and then meet up in person to watch movies, have a meal or go bowling. However, four of the participants (44%) except participant three (P3) reported that the people they made plans with online were peers they were familiar with and had relationships prior to their online relationships, these included classmates, campmates, volunteers in their special school and extended family members (see Table 5). Communication technology devices serve as an extension of the socialization of participants who may have difficulty getting around due to their physical mobility. Hence, socialising online meant that the participants' disability did not become an essential part of the friendship when environmental and social barriers are removed. Consequently, the removal of these barriers promotes greater opportunities to share common ideas and mutual topics of interest (Lidström et al., 2010; Martinez, 2011; Mavrou, 2011).

This study found that it was important to provide opportunities to communicate using communication technology (see Table 3), a finding supported by other studies (Dattilo et al., 2008; McNaughton & Bryen, 2007; Raghavendra et al., 2013). Given this finding, it is recommended that adolescents with cerebral palsy could be educated in the use of Information Communication Technology (ICT) by the age of 13 years. Education in ICT usage would help them in their learning and socialization. At age 13 years, adolescents graduate to secondary schools where they have to manage increased peer pressure and social acceptance as compared to primary school. ICT for learning, social and environmental barriers can be removed hence increasing the opportunities for communication for adolescents with cerebral palsy, an idea supported in other studies (Lidström et al., 2010; Ratliffe, Rao, Skouge & Peter, 2012; Raghavendra et al., 2013).

Access to Social Media Sites and Instant Messaging

All the participants (N = 9, 100%) in this study had access to social media and accounts for texting using mobile phones. The duration the participants spent on these platforms were based on need (ie, a chat initiated by friend or relative) to daily two-hour blocks (see Table 3). All participants in this study had different groups of friends who included school friends, volunteers during school camps, friends of friends (acquaintances) and people they have not met but added to the friends list. Social media platforms create and connect communities of individuals with similar interests as well as struggles and allow empowerment between the users (Hew & Cheung, 2012; Raghavendra et al., 2013). Apart from sending messages and posting on the webpages, social media sites allows interactive game playing between the users. This provides a medium for them to interact based on their interests. All the participants (N = 9, 100%) in the current study, sent texts to their communication partners. Texting via short message sent (SMS) on the other hand, was mostly used to convey and receive instant information such as informing parents of where they were and school information such as outings and what was required for school the next day. Texting served as a convenient way to communicate with people whom the participants were familiar with and saw more frequently. For seven participants (78%) who have data bundle tied to their mobile phones, they sent texts through Whatsapp. This feature is one of many applications that allowed accessibility from the mobile phones which could be used for conversations and plan outings and discuss and share information.

In summary, communicating online provides an alternative platform for the participants to interact with others. It allowed them to share interests and speak to their friends and families within the comfort of their location.

The instant reciprocity of chatting online increased the number of relationships formed as well as extended present ones such as allowing classmates to continue communicating after school hours. This study showed that online social media platforms can serve as virtual communities. Individuals with lifelong disabilities tend to have smaller friendship groups which comprises usually of family members or their attendants (Cooper et al., 2009; Wilson et al., 2013). Therefore, having online communities will increase the socialization for this population. The convenience which communication technology devices provide in terms of speed when broadcasting messages can be explored in education.

Conclusion

The aim of this study was to ascertain if communication technology devices change the communication behaviours of adolescents with cerebral palsy. Three conclusions can be drawn from this study:

(i) The desire and the ability to communicate were ranked one of the highest determining factors which posited successful communication using communication technology devices.

(ii) Information Communication Technology (ICT) Education could be introduced at least by the age of 13 years. The use of ICT helped the participants in their learning and socialization. Navigating through the various social media sites and mobile applications establishes a high ability to communicate online. This coupled with the desire to communicate ensures that the participant can independently communicate with others.

(iii) Participants did not understand that their personal information could be obtained through the IP address. Education on safe ways of communicating online needs be addressed prior to using such communication and social platforms.

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CULTURALLY RESPONSIVE CONTEXTS: ESTABLISHING RELATIONSHIPS FOR INCLUSION

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As our education systems become more culturally, ethnically and linguistically diverse, rather than benefiting and learning from each other, we still expect all students to be represented within the same curriculum, pedagogy and testing regimen or we form separate enclaves resulting in marginalization. When diverse students have physical and/or learning disabilities, marginalization is further exacerbated and problematized. In this paper, the authors theorise within an alternative framework that we have termed relational and culturally responsive inclusion. Based on key understandings from our own research, much of it derived from Kaupapa Māori and Freirean philosophies, we encourage a framework where establishing respectful relationships of interdependence with people is central to both human dignity and praxis. A culturally responsive framework such as this challenges traditional notions of the professional expert working with objectivity; instead it opens up spaces that call for engagement through the establishment of relational and interdependent discourse.

Achievement disparities, between specific groups of students, continue to be challenging and well documented within schools across the globe. For many students, quality and equity have not been achieved as education continues to under-serve specific groups of clearly identifiable students (Organisation for Economic Co-operation and Development, 2013). This pressing challenge can be associated with the power imbalances in classrooms and schools as a result of ethnic, cultural and language diversity (Shields, Bishop & Mazawi, 2005). This situation has and can continue to lead to the loss of cultural and language identity which is further exacerbated when one's lived experiences are pathologized by others (Bishop, Berryman, Tiakiwai & Richardson, 2003). As our education systems become more culturally, ethnically and linguistically diverse, rather than benefiting and learning from each other, we still expect our students to be represented within the same curriculum, pedagogic and testing regimen or we form separate enclaves and the divide becomes even wider (Berryman, 2008). When diverse students have physical and/or learning disabilities these situations are further exacerbated and problematized (Berryman, Nevin, SooHoo, & Ford, 2015).

As an international team of scholars who have been working together for the past six years, we propose that within contexts that are *relational* and *culturally responsive*, a sense of becoming and belonging can be promoted that is more likely to lead to one's own sense of inclusion. One of our contentions is that the mainstream has much to learn about equity and social justice from disability and indigenous settings. In this paper, we reconsider key understandings from Kaupapa Māori and Paulo Freire set forth in Berryman, SooHoo and Nevin (2013) to discuss a culturally responsive and relational framework in the context of disabilities and inclusion. Praxis such as this challenges traditional paradigms that marginalize or dehumanize those with whom we work. We encourage instead a stance that requires practitioners to develop relationships

that will enable them to intimately come to know and be responsive to those with whom they work or seek to work. A stance such as this challenges traditional notions of the professional expert working with objectivity; instead it opens up spaces that call for engagement through the establishment of relational and interdependent discourses.

We begin by further exploring the inter-relationships between Kaupapa Māori theory and Freirean philosophy as a context for understanding how we might more effectively begin to include individuals or groups currently marginalized or excluded from the full benefits of education. We continue with an international overview of the policies and practices, and we reflect on the emerging framework of relational and culturally responsive inclusion in two specific settings, one in the US and one in New Zealand. From these examples we detail the context of the responsive dialogic space, and principles and practices that we contend are foundational to transformative praxis of this kind.

Connecting with Kaupapa Māori and Freire

It has been our experience that Kaupapa Māori theory and Freirean philosophy can work together to create research contexts to inform a new, more relational way of listening to the voices of our participants and in so doing, the research could be collaboratively and actively constructed with participants (Berryman, SooHoo & Nevin, 2013). Like Kaupapa Māori, Freire (1970) encourages relational contexts for examining and *reinventing* the possibilities of theories and actions dedicated to liberation, self-determination and freedom. Both Kaupapa Māori theory and Freire teach us to affirm our own identities and attend to our own cultural identity and well-being. To do this, we must honour our own histories, our culture, our language, and our unique ways of knowing and being in the world. Māori uses the term *au*, a term that signals I, who we are as individuals, what we stand for and what we take into our relationships with all others, or in Freirean terms *conscientization*, our own critical understanding of self.

For many people of colour, especially those who live within cultures that have overpowered and remain dominant today, affirming our own cultural identity requires us to re-examine and understand the evolving forms of culture and language - both losses and transformations. When we ask, how this (current form of culture) happened, there are many explanations. In these explanations, we might begin to get our first insights into understandings and intentionalities of cultural preservation, continuity, assimilation, acculturation, colonization, and migration. We can learn from such an examination how we and our ancestors maintain our cultural identities while living within contemporary often dominating cultural contexts (Bishop & Glynn, 1999). Our past informs our present world views and our current positionalities. Freire (1970) has argued the answers for people who have been historically dominated will come from within their own experiences and view of the world:

This then is the great humanistic and historical task of the oppressed: to liberate themselves and their oppressors as well. The oppressors, who oppress, exploit and rape by virtue of their power, cannot find in this power the strength to liberate either the oppressed or themselves. Only power that springs from the weakness of the oppressed will be sufficiently strong to free both (1970, p.26)

As a result of the Kaupapa Māori movement started in the 1970s, spaces of resistance, revitalisation, and self-determination were opened up for the indigenous Māori peoples in New Zealand (Bishop, 2005; G. Smith, 1997; L. Smith, 2012). This movement was similarly echoed by other indigenous peoples and people of colour, including the Black Panther movement in the United States. These social justice movements staunchly rejected social marginalization and dehumanization and claimed the right to have different cultural world views, a right to resist dominant hegemony, and a right to acknowledge different histories and cultural knowledge. No longer would a culture of silence be tolerated, where human beings were mere objects responding to surrounding social forces (Freire, 1970). Instead, a sense of critical consciousness emerged followed by mindful action, a resistance to colonial past and presence, and perhaps a new hegemony of coloured privilege. For Kaupapa Māori, the right for Māori to look for their own solutions from within a Māori world view gave renewed access to Māori knowledge upon which the philosophical and spiritual direction for cultural revitalisation could be built (Berryman, 2008; Durie, Hoskins & Jones, 2012). Learning within contexts such as this requires continually challenging one's long held assumptions and letting practice inform one's theory. This requires us to relearn and unlearn (Wink, 2011) if we are to learn a more critical way forward.

Kaupapa Māori and Freire both maintain that to be in the world means the formation and acknowledgement of relationships. Within Kaupapa Māori, acts of *whanaungatanga* or the deliberate processes for building familial like relationships with others, is fundamental. Embedded within *whanaungatanga* is *au*, maintaining

our individual responsibility and agency to commit to activating the relationship. Freire (1993) refers to dialogical relationships as being central to becoming a humanist and essential for praxis and liberation. Liberation is not a gift; rather they are the acts of engagement between the oppressed and the oppressor. This engagement suggests *no one liberates himself by his own efforts alone, neither is he liberated by others* (1993 p. 48). Further, not only is it incumbent for the oppressed to deeply engage but it is the oppressed who must carefully avoid becoming the new oppressor in the process. Furthermore, it is the oppressed who must lead the struggle for a fuller humanity for both, for it is clear without humility the oppressor will not see how he himself is also oppressed by his oppression (SooHoo, 2006).

The nature of the oppressor's consciousness, according to Freire (1993), is one of domination, to have and to own. Freire addresses this condition of dominance as the oppressors' need *to have* and subsequently, to create a class of the *haves*. He cautions against this appetite for *commodification* by suggesting oppressors *suffocate in their own possessions and no longer are; they merely have* (p. 41). The oppressor is dehumanized because he dehumanizes others. The question here is, how do we move from this is *mine* to this is *ours*?

Traditional Māori cultural rituals of encounter such as *pōwhiri*, that are practised today, visually demonstrate the relational dialogical spaces within which the struggle towards relationships of interdependence are prioritized to precede all else (Berryman, Macfarlane & Cavanagh, 2009; Berryman & Macfarlane, 2011). In this space, between self and other, the attempts to make connections, build relationships and negotiate power through dialogue hold promise for liberation. Love, humility, compassion and empathy give us the courage to move toward the other. Critical mindfulness informs our approach, for it is in this third space, we can begin to re-imagine the *them* and *us* (Chamberlin (2003), cited in Haig-Brown & Nock, 2006, p. 2) where we see the *us* in *them* and the *them* is in *us*. This is what Asher (2003) calls inter-subjectivity and what Martin Buber (1970) refers to as the dialectic I – Thou relationship.

Freire teaches us to find ways to liberate the oppressor as well as the oppressed. Kaupapa Māori theory teaches us this can only be done within relationships of mutual respect and interdependence. One cannot read the world or engage in dialogue without respecting what and how others impact our lives. It is *with* people when we make the world a more equitable space. It is in the context of cultural circles, relationships and love, we enter into dialogical and critical consciousness, problem posing, possibilities and action. Love is an intentional spiritual act of consciousness and a shared labour of struggle (Darder, 2015). Starting from a relational stance, we move to social actions such as *mahi tahi* (working together as one) and *kotahitanga* (unity of purpose). It is within cultural contexts such as these where a common vision is shared, that inclusion may be more attainable.

A Special Education or Disabilities Studies Response

The special education classroom, students and faculty are often among the most alienated and acultural factions of the school. It is the space where the medical model has long flourished and where those who deliver the required specialist services fail to see the cultural knowledge of families as a valuable resource for the process of educating all children and certainly those with special needs. Cultural knowledge is not limited to ethnicity, language or religion but rather a cultural frame of understanding that facilitates different ontologies and ways of knowing to work with human difference to include those with special needs.

Based on its goals and the distribution of service, the structure of special education within schools is often seen to be a dominant white space (Milne, 2013) with policies, approaches and protocols being informed by a western medical model. Many families referred to special education are not from dominant groups. We find the cultural healing practices of the family are often marginalized and not seen as legitimate. Parental knowledge is routinely trumped by knowledge of medical experts.

Models of Disability

Inclusion is often understood as focussing on the presence, participation and achievement of all students; however, it is typically discussed in terms of a students' inclusion in either a special education or regular education setting. This implies that, by its own definition, exclusion for some students from regular settings may well be occurring. However, for many (MacArthur, 2009; Villa, Thousand & Nevin, 2013), inclusion is not understood as occurring when what is being discussed is participation in a segregated setting such as a special school, unit or class. Another important part of the discussion surrounding inclusion is related to how we understand and apply the term disability. We discuss two models that have shaped our thinking; the medical model of disability and the social model of disability.

The medical model of disability

Discourses long associated with the medical model are often concerned with disabilities that come from physical impairment as a result of damage, failure to develop adequately, or disease. These conditions might include conditions such as difficulty in seeing or hearing; or needing more time to meet developmental or learning milestones. Within the medical model the response is to eliminate, fix or compensate for disabilities through remedial treatments recommended by experts. In this way, as discussed by Ash et al. (2005) *disabled people are [regarded as] 'objects' to be 'treated' and changed in accord with the standards commonly accepted by society. Failure to change becomes the problem of the disabled people themselves* (p. 236).

Traditionally, medical model praxis has viewed the challenges faced by disabled students as coming from the students themselves rather than from inadequate classroom or school responses (Connor & Ferri, 2010; MacArthur, 2009). Within the medical model, the educational response has been to assess and categorize students according to the level of severity of the condition and then provide a response (often resource dependant) to remediate or fix students up. Thus educators who are positioned within the medical model might adhere to discourses such as special needs, problems, difficulties, intervention, disorder and diagnosis; discourses such as these have the power to pathologize and exclude (Ballard, 2004). It is not surprising then that within this model, some teachers may hold low expectations of students who are labelled as disabled or that teachers may also feel poorly prepared to teach these students effectively. Pathologizing the lived experiences of particular groups of students is very powerful and has been known to strongly influence how educators at all levels respond and how particular groups of students participate and achieve in education or not (Ainscow, 2008; Bishop et al., 2003). Rather than officials at regular schools being required to consider how they might adapt the curriculum, pedagogy and /or environment for these students, this more traditional response has seen many students, from all over the world, removed from regular education settings in their own communities and transferred into special education settings.

The social model of disability

Gaining more international recognition and support over the past three decades, the social model of disability emphasizes the social construction of disability, that is, the experience of disability does not come from an individual's impairments, rather it comes from bureaucratic policies and structures that perceive some people as abnormal. In the past, teachers have too readily blamed students' failure to learn at school on perceived inadequacies in students' home backgrounds, their cultural differences, their ethnicity and their parents' lack of motivation or commitment to help them achieve (Bishop et al., 2003). Parents may just as readily blame their child's low achievement and behavioural difficulties on teachers' failure to consider their students' cultural and ethnic origins, and on teachers who are out of touch with the financial and emotional stresses and strains of contemporary parenting especially when one is parenting a child with multiple challenges. The blame and counter-blame discourse is just one that maintains deficit discourses; thus communities and the people located therein can maintain and perpetuate the status quo by failing to accept their own responsibility and agency to respond differently (Bishop, Berryman, Cavanagh & Teddy, 2007). For many people with disabilities or people from diverse populations, the status quo perpetuates experiences of oppression and discrimination. This situation can further promote and exacerbate feelings of self blame, of helplessness and hopelessness.

While professionals/teachers must seek to understand the effects of a student's impairments on their participation and learning, the social model requires them to identify the systemic barriers to learning and participation at school and focus on how they the professionals can contribute towards their reduction or elimination. In this way, the social model supports regular school personnel to focus on their own agency and policies to better support disabled or diverse students to participate more fully, that is, to be included in education. In support of a social model of disability, research undertaken by Ash et al., (2005) argue that *inclusive education encourages personal and social relationships and attitudes that are based on a view that disability is part of, not outside, the ordinary range of human diversity* (p. 236). Within a social model for disability, school personnel and their communities commit to an inclusive set of values such as equity, participation and respect for diversity as the important foundation for inclusion (Ainscow, Booth & Dyson, 2006). They also broaden their approaches to education to embrace a strengths based capability approach (Florian, Devecchi & Dee, 2008) and adopt inclusive pedagogy that is responsive to the student's progress and needs and where teachers frame teaching and learning as the task of developing a rich learning community with multiple and different learning opportunities available for everyone (Florian & Linkletter, 2010).

To reiterate, the term *disabled* has been introduced into the theorizing and discussions about inclusion to remind us that people with disabilities are often *disabled* or *excluded* by others. This can occur in spite of the policies developed to support them when, as discussed, people in schools and wider communities

automatically adopt the prevailing paradigm that pathologizes people with disabilities and treats them in ways that make them feel that they are lesser than, unequal to, and different from. Efforts to restructure and reform the educational system in a systemic way have included mainstreaming or the movement of students with disabilities from institutions and special education settings to regular education settings. When this movement occurred throughout the 1980s and 1990s, many teachers were finding it difficult to meet the needs of individual students with behavioural and learning difficulties, let alone students with disabilities. This was especially so when teachers came from different cultural and linguistic backgrounds to those of their students (Wearmouth, Glynn & Berryman, 2005). It was even more difficult when they tried to meet students' needs, independent of parents and caregivers in their school communities. At the same time, parents were finding it more and more frustrating to be held responsible for their children's behaviour and subsequent inclusion at school when they were seen to have neither the authority nor the skills to intervene at school (Glynn, Fairweather & Donald, 1992). Even when an intervention called for collaboration between the school and the home, the *collaboration* was more often defined by the school (Glynn & Berryman, 2005). Restructuring efforts in the USA since the reauthorization of the Individuals with Disabilities Education Improvement Act (2004) involve implementation of response to intervention procedures (Graner, Faggella-luby, & Fritschmann, 2005) which require general educators to improve their classroom instruction before referring students for segregated specialized instruction. In summary, challenges to the dominant discourse, in the United States, as articulated by Connor and Ferri (2010), have been formulated by scholars and researchers since the 1980s. Areas that have been criticized include the unquestioned embrace of positivism (Heshusius, 1989) and the primary conceptualization of disability in medical terms (Danforth, 1999).

Respecting what the medical and social models have to offer

Rather than choosing one model over the other, we consider how these two models might be brought together in a model of inclusion where they are seen as complementary with both being able to contribute and able to work inter-dependently. Our work underscores the often seen chasm between educational theory and practice, what is promised by law versus what is actually provided, and the inequities that continue to exist in terms of race, class, and gender, as argued by Connor and Ferri (2010). We believe what is needed is an approach that will capitalize on the strengths available within parents, teachers and other professionals, that will enable them to take joint responsibility for the inclusion of students (Bevan-Brown et al., 2015). This requires a clear understanding of our own potential contribution as professionals, knowing who the student is and how their needs are expressed, and where necessary, including other professionals who are able to deliver specialist programmes for the individual student, together working relationally, collaboratively and responsively with parents, teachers and other community members. Let us be clear, we are not advocating for children to be mainstreamed into colonizing places. The change we seek is not just a matter of being humanely inclusive but also restructuring schools so its first response to reject variation reverses itself to accepting all forms of humanity.

Inclusive Education Policies and Contexts

One way to respect what the medical and social models of disability have to offer is to understand the range of policies that have been developed to support inclusive education. Schools around the world that are working at being inclusive usually have support from their governments for inclusive education to be written into education policy so that there is an expectation by schools that they must include all students in their local communities including those students with disabilities. The rights of all children to education have been detailed in the United Nations Conventions on the Rights of the Child (United Nations, 2006) and many countries have agreed to these rights.

Subsequently, the United Nations Convention on the Rights of Persons with Disabilities (2006) described the rights of adults and children with disabilities and established rules for countries to put these into practice. Countries that join with this convention agree to implement these rules. In education, this convention says that people with disabilities have the rights to:

- *not be excluded from the general education system or from free and compulsory primary and secondary education on the basis of disability*
- *access an inclusive, quality and free primary education and secondary education on an equal basis with others in the communities in which they live (p. 17).*

Nevertheless, the agenda for inclusive education often reflects at its very core two competing arguments. On the one hand, the provision for an education that allows graduates to compete globally has given rise to consideration about standards and school effectiveness. On the other hand, educators must balance excellence with equity, equality, social justice, and marginalization, thus resulting in the complexities of inclusive education.

Unfortunately, for many students, marginalization and alienation from school, alongside subsequent failure to master elements of the formal curriculum, continue to have long lasting and deep effects (Wearmouth & Berryman, 2009). Carrying the identity of marginalization at school can mean an expectation of marginalization and alienation from other institutional contexts and for life. This situation continues to occur, despite many educators applying the term inclusion in concert with the assertion that all children and young people have a right to be included in schooling (Ainscow, Booth, & Dyson, 2006). Inclusion of all students, particularly those who experience difficulties in learning or whose behaviour is seen as problematic, is a concept about which there is insufficient consensus regarding what it means or what it entails, either in theory or in practice (Wearmouth, 2009).

Education and educators play a critical part in shaping students' self-efficacy, or as Bruner (1996) describes their ability, responsibility and skill in initiating and completing actions and tasks, and therefore, often in their inclusion or exclusion from education (Wearmouth & Berryman, 2009). Whatever particular education settings, pedagogies, or activities are employed and one is included in, it is important to ensure that the practices that are utilized contribute to a young person's sense of self efficacy and, therefore, to the construction of positive feelings about being able to cope with the world of school (Bruner, 1996) and in turn the global community (Wearmouth & Berryman, 2009).

Therefore, alongside the discourse of inclusion, we understand the need for a discourse that includes *the active combating of exclusion; [that] inclusion is a never ending process. Thus an inclusive school is one that is on the move, rather than one that has reached a perfect state* (Ainscow, Booth & Dyson, 2006, p. 25). The movement for inclusion learned early historical lessons on integration and civil rights. Solutions were not merely the placement of students who have been historically marginalized and alienated but rather culturally responsive inclusion advocates must continuously work with the mainstream contexts to invent new structures of respect and sensitivity. Unlike the advice we give to student teachers to move into their school settings as if they were cooking in their mother-in-law's kitchen, - don't touch or rearrange anything - rather, culturally responsive inclusion requires a proactive dynamic between schools and families in order to re-imagine new possibilities and arrangements from our learning kitchens that acknowledge and utilize the variety of diverse resources. Schools and parents must define this space of unlimited potential together.

Societal Responses to Diversity through Policy and Other Means

According to Freire (1985), those who do not actively engage in the endeavour to address this injustice wash their hands of *the conflict between the powerful and the powerless* (p. 122), which ultimately means they position themselves alongside the dominant group and thus support the exclusion of powerless minority groups (SooHoo, 2004). What appears to be politically neutral is inherently complicit with the maintenance of existing power hierarchies (Freire, 1998). Said differently by Martin Luther King Jr. (1967), *[h]e who passively accepts evil is as much involved in it as he who helps to perpetrate it*. Conversely, Freire (1998) urges those *who dare teach*, to refrain from aligning with the powerful and consider their responsibility to uphold social justice. He suggests that *teaching requires the capacity to fight for freedom, without which the teaching task becomes meaningless... ..those wanting to teach must be able to dare, that is, to have the predisposition to fight for justice* (Freire, 1998, p. 4).

The authors of this paper propose the need to take responsibility for our own personal positioning; to hold the lens up onto our own praxis to ask ourselves what we, as parents, grandparents, representatives of marginalized groups, practitioners and teacher educators can each do to promote inclusion. Failure to acknowledge inequities in education and the wider context of society between those that fit within the parameters of the *normal* dominant and those who are defined as being *different from normal* is to ignore a fundamental social injustice and to be complicit in an oppressive regime.

Relational and Culturally Responsive Practices

Next we provide readers with two examples that show how the relational and culturally responsive interactions we advocate can lead naturally to multiple ways of honouring cultural and epistemological pluralism. The first example comes from the United States (Hapner & Imel, 2002), while the second example comes from New Zealand (Berryman, 2014).

Secrecy to Transparency: Teens learn about their Special Needs, Educational Accommodations, and Legal Rights

Early in 1998, after struggling to meet USA mandates to involve students aged 14 and older in their development of their individualized plans to transition from school to work, two teachers at a multicultural junior high school and senior high school near Phoenix Arizona believed that student-led Individual

Education Plan (SL-IEP) processes were a way for students with disabilities to develop an understanding of their strengths as well as their disabilities so that they could contribute their own ideas for their future pathways (Hapner & Imel, 2002). These students who came from culturally, economically, ethnically, and linguistically diverse homes (80% were Spanish/English minority adolescents between aged 13 and 18) were located in a suburban community composed of families with low to low-middle income levels. The teens were unaware that they had attended special classes for all of their elementary and junior high school years and that they were enrolled in special education classes for a variety of special needs (e.g., learning disabilities in Math or language arts, mild mental retardation, conduct disorders). This information had been kept from them perhaps for the best of intentions and perhaps their parents too had bought into this subterfuge because decisions were being made about them and for them.

Importantly, the students learned that they had legal rights as described in the Individuals with Disabilities Education Act of 1997 and that these rights were extended to employment policies. Over the semester, the first group of students to participate in SL-IEP process shared their experiences with others, especially how they were able to ask teachers for accommodations for the way that they learned and their rights at work. The students wanted others in their school to know about these rights; they formed a leadership club which met once or twice each month to coach each other on how to lead their IEP meetings, to practice what to say when adults used words they did not understand, to share ideas for how to explain what they needed to learn. The teachers were supportive of the leadership club, helping the students work with the administration for meeting space and time. The students set the agenda and made sure the meetings were open to all who wanted to come.

Teachers Share Power to Make Decisions

How did these teachers change their teaching interactions? First, they asked the students what they'd like to know about their own individual educational plans. When the teachers shared a blank Individual Educational Plan (IEP), the students carefully read through it (sometimes asking for help) and asked to find out more about educational needs, especially what that meant for how teachers might teach them to learn better.

Instead of developing their lessons independently and in isolation from their community, the teachers collaborated on developing themed instructional units, choosing themes that enabled students to become active participants while they learned about special education labels, the laws that were passed on their behalf, and the process of planning for their own futures. Instead of relying on individualized instruction folders where each student worked alone to complete their assignments, the teachers engaged in a give-and-take question-answer conversational style of teaching with a group (from 7 to 15 students in a session). Instead of independent reading for learning about their special needs or learning about their legal rights, the teachers arranged circles of interest where students working on a similar aspect were gathered together to read aloud and answer reading guides. Class time was also allocated for practice sessions and simulations. Students used video technology to tape each other and play it back to make sure that what they were saying was being communicated to the audience. Instead of sending out notices to teachers, parents, and other professionals, the teachers asked the students to write letters of invitation to the people they wanted to come to the IEP meeting.

More importantly, students began to raise their own questions and engage in their own areas of personal interest (such as the leadership club, visiting businesses for employment options). The dialogic pedagogy suggests that the learning was in the active engagement in conversations rather than being passive recipients of someone else's knowledge leading to a growing belief that students can contribute and do have something important to say. The students' initiative to establish their leadership club may be attributed to the kind of power sharing that the teachers had established during their lessons.

Reflections Reveal Self-determination Skills

Hapner and Imel (2002) asked the students for feedback about these lessons and collated their students' remarks. They noted that the remarks were aligned with various aspects of self-determination (Wehmeyer, 2001). Peter, a 16 year old with a learning disability, became aware of how he learns to spell by breaking the word into smaller words, and how note cards helped him remember what he wanted to say to his teachers during the IEP meeting. He wanted his teachers to know how their accommodations helped him learn. Luis, a 15-year old student with mild moderate mental retardation, realized that by taking the leadership role at his IEP meeting, his father became *really proud* of him. Raul, an 18 year old student with expressive and receptive language disabilities, had threatened to leave school as soon as he turned 18. However, because he learned about his rights, he decided to invite his friends (his neighbourhood buddies) to the IEP meeting so that they could help him graduate from school. He often stayed after school to get added help on work for

other classes, to have tests read to him, and to study the driver education manual to take the test for a license. He noticed how his teachers' interactions with him began to change; he stated, *Teachers started to listen and show respect.*

Results of the first year of implementation showed teachers and administrators, families, and other professionals, that some students led their entire IEP meeting, others led self-selected parts of the meeting (e.g., describing how they learn, explaining what they'd like teachers to do), and still others were able to attend the meeting whereas in the past only their parents had attended. The secrecy surrounding the IEP process gradually was replaced with transparency. The school administrators who supervised the teachers reported unexpected benefits. Barrie and McDonald (2002, p. 119) described the increase in participation of parents and other teachers at the IEP meetings:

When students invite their guests, it is much harder for the invited person to say, No, I won't than if an anonymous legal meeting notice invites the person. Student-led IEP process personalizes the IEP process. When staff members direct the major locus of control to the student, the student becomes the focal point.

In addition, professionals learned to listen to their students, avoided jargon and spoke in a way that students and their families understood more clearly what was being offered. Conflicts amongst professionals and between professionals and families decreased in favour of supporting the students' self-determination.

Experiences of Indigenous Māori Families in New Zealand

The next example focuses on the experiences of indigenous Māori families who had received Early Intervention (EI) services across four Special Education districts (Berryman, 2014). While the service providers understood the effectiveness of the interventions for non Māori families, they needed to understand how effective these interventions were for their Māori clients. To prompt reflections, group-focussed, semi-structured, interviews-as-conversations were undertaken to ask: *...how have the EI services been effective for you/Māori?* This process was used with 23 Māori families and later with 29 of their EI providers. Verbatim recordings were returned to participants for verification and annotation then quotes were selected from the transcribed interviews to identify, examine and further develop major themes regarding the experiences of these people. Both family members and service providers expressed very similar comments, highlighting two common elements of effective EI practices that were strongly interconnected. Their priorities were the importance of developing respectful relationships of trust while working in ways that were responsive to the families' understandings, aspirations and culture.

Respectful Relationships of Trust

Establishing respectful relationships was seen as foundational. Each group described these relationships as non-judgemental and reciprocal where each party was able to begin to trust and value the input of the other.

It's that respect for each other and they can ring me up and pop around and talk freely and it's like there's been no judgement being a single young Maori mother or anything like that. I've had such great dealings with [EI providers], it's the fact that they're respectful of myself and my individual story, that's why I praise them so highly and they've done everything possible to support me in every venture I've taken. (Family member)

The most important part is to establish trust with the families and empowering the families to feel part of the team around the child. Then you get much better assessment information in the range of settings the child is in and you get long-term buy-in if you have spent that time in the engagement phase in that relationship. Our role is to provide advice and guidance as well as assessment and programming but that is all reliant on how you are perceived by the family you work with. So you can have the best plan/assessment in the world but if you haven't got family buy-in a lot of what you have done is wasted in a way. (Provider)

Many family members talked about the importance of providers who showed genuine care and interest in their child.

I think the biggest thing that struck me is that I feel that they genuinely love [the child] and they genuinely care about what is happening with him, whereas with a lot of the other medical people that we see, it is just in and out the office, saying Thank you. Bye. And I feel that I can contact [service providers] any time that there is a problem and they respond pretty much straight way. (Family member)

Service providers also stressed the importance of establishing good relationships before any intervention could even begin to take place.

You need to develop the relationship before anything else can go anywhere. (Provider)

Both groups understood that connecting at a personal level before they connected at a professional level was essential, however, they cautioned that this process took time.

Usually with my visits, it may involve just a cup of tea and talking and I think this is where we're in conflict with Ministry processes, that we don't always do what we're meant to do and get the service agreement signed and the consent form and all of that started straight way. We just need time to actually establish a relationship and that first visit might be just a cup of tea and talking together and then subsequent visits, you start doing a little bit, but definitely not in first visit. (Provider)

Many family members identified this as the important point of difference between the EI service they had received from their provider and what they experienced as the impersonal and more 'threatening' service offered by some other organisations.

Culturally Responsive Ways of Engaging

Relationships of trust and respect provided the important foundation upon which each group; family and provider, believed that effective listening and learning from each other could begin.

The service has been really important because sometimes it is about a friendly face, a person that is easy to talk to, where you could tell them things because you are worried about your child and they can say, Well, this is what you do if you have to refer to us. If I didn't have that person that I could talk to, to tell me what I should do and where I should go, then we would probably be, as a family, really lost along the way. (Family member)

Family members appreciated service providers who respected and understood the importance of their own cultural identity.

They've all been very supportive of the fact that I'm Māori and always put that into consideration of everything and any venture we've taken. I don't really know how to explain it; they seem like they're aware of Māori but sort of just get it. Especially dealing with me because I have such a large whānau (family) and discuss it with them a lot, they've all been really supportive of that. I think it's just been so casual for me and I've had it so easy, I've never really had to think about it. (Family member)

Furthermore, family members were impressed by the ease with which service providers acted in regards to their culture.

A lot of times, it is just the little things like just taking your shoes off at the door and things like that. And it was done easily. It wasn't like they kind of got to the door and, Oh, that's right, I'd better take my shoes off because I'm in a Māori house. They just did it. It is just part of what they do. (Family member)

Service providers talked about the importance of not just rushing in as the expert but giving people time to figure out who they were and where they were coming from. Many attributed these cultural understandings to the role of the Special Education kaitakawaenga or cultural advisor whose role was to provide cultural advice.

Emerging Understandings

Although families and early education providers were challenged by the complexity of these cases, EI providers understood the need to maintain a focus on the child's potential and on what they could achieve, rather than being overwhelmed by the challenges. This involved their ability to share skills and knowledge with the family, have the ability to co-ordinate multiple services and be aware of what the big picture involved. They were able to do this by first establishing relationships with family members and working in ways that were culturally responsive as well as culturally appropriate. They began their work by first getting to know members of the family and developing two-way relationships. In this, they were respectful of the knowledge families had about their own children and the skills families brought with them into the working relationship. They then sought to bring their own professional skills into their work with families in ways that were respectful, interdependent and responsive. Importantly, Māori families saw these practices as highly effective.

Discussion

In sharing these two examples we emphasize the flexibility of relational and culturally responsive approaches to education. In both examples we see the benefits that accrue when the power to make educational decisions is shared; in the first example with students and in the second with parents. We contend the need to avoid the demand to make students all *the same* and instead to find ways to support the diversity and cultural uniqueness of each student. As in the US example, one way to do this is to create spaces where students' voices can contribute to shaping their own identity and belonging as learners (Berryman et al., 2015). When members of diverse groups are invited to contribute and understand that they do belong, they are more confident to seek greater legitimacy in wider society. These awarenesses emerge through the processes of respectful relational dialogue, shared vision and reciprocal learning.

In the New Zealand example, professionals learned to re-prioritize the bureaucratic requirements, beginning instead with relational visits, shared cups of tea, chats, and promises of return visits. The authors of this paper agree with Harry (2011) who argues for a reciprocal approach to interactions between professionals and parents so as to improve mutual understandings. Furthermore, we contend that diverse ways of knowing and understanding the world can bring different knowledge bases into the intervention from which to appreciate the expansion of our own knowledge (Harry, 2011). We can then begin to learn from each other in more respectful ways.

Despite the common perception that parents are reluctant to participate in the education of their children, we believe that educational personnel must seek to foster, nurture, and celebrate parental involvement. To do so may require counteracting the prevailing practices that exclude, resist, ignore, avoid, and discount parental opinions, perspectives, desires, and knowledge about their children's lives. It means involving families beyond superficial levels of engagement, which is more often the norm, to participation as full contributors in their child's education. As parents ourselves, and also as educators, we would do well to seek to understand the ways that other parents might themselves inform the process of increasing involvement and establishing partnerships with schools.

In our interactions with others, we each have personal agency to perpetuate the status quo, the traditional power structures in society that keep marginalized groups at the edges of the social order; *or* we have personal agency to create liberatory spaces of hope and freedom so that the identity, culture and languages of marginalized peoples can experience a greater sense of becoming and belonging. The two examples in this paper exemplify how the behaviours of the professionals and students/parents changed as a result of the relational and reciprocal listening dialogue with benefits accruing for both groups.

Instead of focusing only on the conditions and deficits in the child, there are benefits to be gained from seeing the child, community and their culture as part of potential solutions. A culturally responsive stance supports educators to move away from the traditional position of expert to that of learner, and away from working primarily with other specialists to working in interdependent relationships with the child, family, and others in their community. This repositioning can occur within responsive dialogic spaces that consciously incorporate multiple participants in the dialogue and where all agree to focus on what they can contribute towards the well-being of the child and the ongoing participation of their family.

At the beginning of this paper, we posited a relational stance to inclusion framed by a culturally responsive and relational framework that challenges traditional notions of the professional expert working objectivity. Readers may ask, what has prevented practitioners to move in this direction? How have they been educated? Schools and service providers have not always embraced relational ways of knowing and acting. Repositioning to honor collective voices and to catapult relational literacy to the foreground of our work with communities is not easy. When one has been socialized in a dry desert, one cannot swim instantaneously when water presents itself. We theorize - the dehumanized stances schools and service providers take as a result of medical model ideology is supported by a culture of positivism in which one of the central tendencies, according to Giroux (2012), is the notion that knowledge is value-free. Values then are superfluous to diagnostic interventions and facts trump human discourse because they are objective. *Human intentionality and problem solving ... are either ignored or stripped...* (p.17) within this meta-narrative.

Educators who started their careers loving children cannot be blamed for the structures and processes that provide the skeletal architecture for positivism in schools. They are the flesh society has provided to support schools and as Sartre writes, *you become what you are in the context of what others have made of you*. Unaware of their unquestioned allegiance to medical model ideological authority, they sustain oppressive structures that are resistant to family dialogue and the co-construction of alternative pathways.

In our two promising examples there is evidence roses can grow from concrete (Shakur, 2015). Good practices can come out of dysfunctional structures. In these cases, roses bloomed beyond the behavioural shifts to listening, compassion, and relationships for these behaviours are the same characteristics of the benevolent benefactor. Essentially and critically, for the roses to be resilient, someone, either internal or external, posed the questions *what knowledge?* and *whose knowledge?* Who has the expertise and the power to provide the best information for the child? - The educator? The parent? The child? In both of our cases, people were invited into the conversation and these notable questions were fundamental to a paradigm shift towards legitimacy, democracy and science. In a democracy, stakeholders have rights to question authority or experts. While few question the science behind medical model ideology, scientists would agree

interdisciplinary approaches to a problem are far superior to any single methodology. However, indigenous epistemologies or communities' funds of knowledge are not typically sanctioned disciplines.

Conclusion

For these transformative ways of knowing to sustain themselves in schools, it requires committed relational and dialogical engagement rather than pseudo-participation. Simple transmissional professional development will not shift ideological paradigms. But, respecting, listening, and participating in relational ways and thinking individually and collectively about questions such as, *What and whose knowledge are legitimate?* can move people to interrogate their loyalty to objectivity and value-less knowledge and even invigorate a fidelity instead to human beings. Perhaps these powerful engagements can help us see how our work, as Freire describes, must *restore to the oppressors the humanity they had lost in the exercise of oppression* (Freire, 1970, p.56)

The *spaces of liberation* are in each of these moments that occur during our interactions with others. By choosing to act, we can reject the oppressor within and free ourselves and we can create opportunities for others around us to also be free. Our integrity in this work comes from these *small* acts of everyday resistance as we move through the critical cycle of learning that requires us to unlearn and relearn (Wink, 2011). More importantly, when we focus on what the child can do, rather than on what they have little power to change, and we are responsive to their experiences and strengths as the foundation from which to build, much more can be achieved.

Transformative praxis can be achieved when we are prepared to listen and learn, when we understand the type of change required for the marginalized group to be more self determining and provide structural support for that to happen. Although the dialogue and relationships may be ever-changing, respect and responsibility must remain constant. In contexts such as these, new learning can inform more humanizing and inclusive policies and structures within which children and families can begin to feel that they have a space in which they can really belong.

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WHAT INCLUSIVE DISPOSITIONS CONTRIBUTE TO CULTURALLY LINGUISTICALLY DIVERSE EXCEPTIONAL STUDENTS' SUCCESS?

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Correlational research investigated relationships between PreService Teachers' dispositions and success with Culturally Linguistically Diverse Exceptional (CLDE) students, addressing disproportionality and multicultural teacher preparation. Results show a significant correlation between Inclusive Dispositional Self-Assessment scores (e.g., emotional intelligence and cultural competence) and instructional choices for CLDE students. Implications include the need for teacher educators to provide opportunities for students to develop the dispositions of care, purpose, advocacy, empathy, inclusivity and reflection, which will greatly improve instructional outcomes for CLDE students.

Introduction

Overrepresentation of Culturally and Linguistically Diverse (CLD) students in special education remains a problem even after forty years of inquiry (Artiles, Kozleski, Trent, Osher, & Ortiz, 2010). One contributing factor is that teachers have inadequate training for meeting CLD students' needs and confuse language acquisition with learning disabilities, which result in inappropriate referrals for special education services (Ortiz & Yates, 2002; Huang, Clark, Maczarski, & Raby, 2011). The Council for Exceptional Children's Professional Standards and Policies such as the Preparation of Personnel for Exceptional Children from Multicultural Groups begin to address these needs, but teacher dispositions (i.e., values that guide professional conduct) are just beginning to be explored as factors in meeting CLD students' needs. The Council for the Accreditation of Educator Preparation (CAEP) defines dispositions as, "professional attitudes, values, and beliefs demonstrated through both verbal and non-verbal behaviors as educators interact with students, families, colleagues, and communities. These positive behaviors support student learning and development." Knowing dispositions are increasingly important for CLD success, the two research questions explored in this study are: 1) What are the essential attitudes and dispositions regarding ability, ethnic, linguistic, and cultural diversity that should be part of each PreService Teachers (PST) values? 2) How should teacher education and programs identify and nurture the attitudes and dispositions that will contribute to student success?

Our identified conceptual framework is based on holistic education, and includes four domains of the student/teacher: (a) physical, (b) economic, (c) social-emotional, and (d) cultural dispositions; Therefore, we created the tool Inclusive Dispositions Self-Assessment survey (for PST participants) which reflect these domains. We acknowledge the moral, ethical, and spiritual aspects of holistic education, and integrated them in the domains of social-emotional contexts and cultural dispositions (e.g., volunteering, caring, passion for social justice and equity) in the tool.

Cultural and Linguistically Diverse students possess unique, complex experiences that cross disciplines; therefore, three bodies of literature were examined: 1) Culturally Responsive Pedagogy, 2) Dispositional research on special educators that contribute to inclusive practices, and 3) Emotional Intelligence that investigates the affect of emotions on learning. The mixed-methods correlational research design investigated a relationship between PSTs' dispositions and their success with Culturally Linguistically Diverse Exceptional (CLDE) learners, which may reduce disproportionality in special education, and addresses multicultural teacher preparation.

Research results show a significant correlation between dispositional scores (e.g., emotional intelligence, cultural competence) and PSTs' instructional choices for CLDE students. Implications include the need to develop and engage PSTs' inclusive dispositions through inclusive reflection and field work experiences. After reviewing current literature on teacher dispositions, we describe research methods and results, and then conclude by presenting strategies that develop PSTs' inclusive dispositions.

Literature Review

Professional education organizations recognize the need for effective teachers to possess critical skills and dispositions. Dispositions can affect student-learning, motivation, attitudes towards students, as well as affecting a teacher's own ability to learn (NCATE). The majority of research is focused on needed skills to be effective inclusive educators; and only recently has teacher dispositions received attention. Recognizing the vast and complex needs of CLDE learners, we explored commonalities of inclusive dispositional frameworks and found Culturally Responsive Pedagogy to be an umbrella term to include both cultural competence and Emotional Intelligence.

Culturally Responsive Pedagogy

We created Self-Assessment statements about participants' cultural dispositions based on premises of Cultural Responsive Pedagogy. Nieto (2005) identified five qualities essential for teachers to be *Culturally Responsive*: (a) a sense of mission to serve ethnically diverse children to the best of their abilities; (b) solidarity with, empathy for, and value of students' lives, experiences, cultures, and human dignity; (c) courage to question mainstream school knowledge and conventional ways of doing things, and beliefs and assumptions about diverse students, families, cultures, and communities; (d) willingness to improvise, to push the envelope, to go beyond established templates and frameworks, embrace uncertainty and flexibility; and (e) a passion for equality and social justice. These attitudes should be the core of teacher education programs devoted to developing beliefs that cultural diversity is an anchor in teaching behaviors (Gay, 2010). Culturally Responsive Pedagogy (CRP) is a set of practices in which a teacher uses the cultures, experiences, perspectives and heritages of ethnically diverse students as resources and conduits in teaching. One core assumption is that beliefs about cultural and racial diversity shape teachers' instructional behaviors toward ethnically different students (Gay, 2010). We adapted core premises from CRP and cultural competence (Moule, 2002) in designing statements under "Cultural dispositions" on the Inclusive Dispositions self-assessment survey. When examining premises of CRP we found elements of courage, empathy, and passion that require some degree of Emotional Intelligence.

Emotional Intelligence

Emotion is at the heart of teaching, and plays critical roles in teacher development (Yin & Lee, 2011), teacher education (Intrator, 2006), and the formation and transformation of teacher identities (Zemblyas, 2003). Emotional Intelligence (EI) is defined as the ability to perceive and express emotions, to understand and use them, and to manage emotions as to foster personal growth (Mayer & Salovey, 1997), which is required in the classroom. Emotional Intelligence can be organized into a five dimensional model: (1) emotional relationships, (2) interpersonal awareness, (3) emotional intrapersonal beliefs, (4) emotional interpersonal guidelines, and (5) emotional management (Harvey & Evans, 2003). While teachers' emotional management is important for teaching in classrooms, Preservice teachers' emotional intelligence is below average (Corcoran & Tormey, 2012). EI can also enhance successful stress management and increase teacher well-being (Vesley, Saklofske, & Nordstokke, 2014), necessary for sustaining passion, courage, empathy, and commitment. We adapted items from EI scales (e.g., Bar-On & Parker, 2000; Salovey & Sluyter, 1997) in designing statements under "Emotional Intelligence" on the Inclusive Disposition self-assessment survey.

Dispositional Knowledge in Special Education

Issues of integration, access and ability are centered in dispositional research focusing on PSTs in special education. Research shows that dispositions needed in special education include (a) collaboration (Bradley & Monda-Amaya, 2005), (b) being family-centered, (c) positive attitudes towards inclusion (e.g., Shippen, Crites & Houchins, 2005), and a (d) vision that includes advocacy (LePage, Nielsen & Fearn, 2008). Beginning PSTs' visions emphasized (a) the need for children to transform views of themselves, (b) the need to protect and save the children, (c) the importance of relationships, and (d) moral motives such as a passion for social justice and equity (LePage et al., 2008). Teacher educators need to understand their students' dispositions in order to guide their learning, as well as providing opportunities to explore beliefs and assumptions about ability, culture, or language.

In analyzing all three bodies of literature, common dispositions include: (a) caring about students' well-being beyond the classroom (i.e., relationship building), (b) possessing a sense of purpose, passion, and advocacy

skills, (c) empathy as the ability to take on another's perspective, and (d) inclusivity and reflection. As teacher educators, our intentions were to acknowledge and assess students' background knowledge and experiences as valid points of entry into learning. Therefore, we converted our curiosity into a research study that identified the dispositions PSTs in our education programs possessed, in which we could nurture and build upon.

Methods

The study was designed to identify the correlation between participants' emotional intelligence and cultural competence, and their ability to make effective instructional decisions for CLDE students. All data collected were anonymous, in which participants were assigned numbers that were written on the pretest and post-tests for accurate coding.

Study Design/ Participants

The mixed-methods study was conducted over 12 weeks (winter term, 2014), and consisted of four parts: 1) Inclusive Disposition self-assessment survey administered to all participants in first week of quarter and then scored; 2) culturally responsive pedagogy pre-test administered, 3) an identical posttest given at the end of week twelve and scored; and 4) statistical analysis and comparison resulted in a criterion-report scale.

There were 33 participants in this study; 15 undergraduate students (juniors and seniors), and 18 graduate students, all who were enrolled in is a small, rural, teaching university in Oregon. The 15 undergraduate students were taking a course titled "Exceptional Child," were mostly education majors, and many had no teaching experience at all. The graduate students were all in a Master of Arts Teaching program for teaching middle and high school student. Graduate students were in field teaching placements in subject-specific classes (e.g., literature arts, mathematics, arts, etc.), and were taking a course titled "Inclusion Strategies."

Inclusive Disposition Self-assessment Survey and Scoring

A self-assessment survey was administered to all participants to gather holistic data in four categories: a) physical, b) economic, c) social-emotional, and d) cultural dispositions. Students were asked to rate themselves on 30 statements using a five point Likert scale that illuminated their dispositions in the four categories (See Appendix A). The design of the self-assessment survey was the direct result of one of the researchers studying with Raymond B. Cattell in the late 1960's and early 1970's. Cattell developed a multivariate approach to psychology, comparable to hard science, in which he emphasized that the structure of personality is a multi-level and hierarchical structure that contains both interdependent primary and secondary level traits (Cattell, Eber, & Tatsuoka, 1970). He taught that people do not report what is actually going on, and his method was to extract the truth from participants taking the survey by asking the same question many different ways and comparing answers for consistency or a lack of constancies (Cattell, Cattell, Russell, & Karol, 1994). This same approach was used when developing the self-assessment statements on the survey for this research.

Accurate reporting of survey results was assured by using a weighted averages form of analysis (White, 2003). For example, one person scored 9.5 and the highest is a 20. There is no perfect score as a person cannot be male, female, transgendered, or other at the same time; only one of the four options is appropriate. The resulting numbers take into consideration age, gender, and/or experiences. The scores were then converted to percentages $9.5/20 = 48/100$. By converting all the scores to 100th fractions, results were compared in percentages to results in percentages, with all the possible scores to all the actual scores. This was vital for a correct analysis of the data. In scoring the Inclusive Dispositional Self-Assessment survey, the reliability of the survey became apparent when after only a few answers it was possible to predict a high score of EI in the participant. An example of a consistently high score was when participants rated themselves high on EI when faced with a single parent working in a labor position, or parent using drugs or alcohol, or having five or more siblings combined with a marginalized economic status. More subtle was a predictable high cultural competence score when participants rated themselves high on the statement, "I have stayed in houses with only dirt floors." After participants scored themselves on the Self-assessment survey, they took a pre and post assessment based on a case study student in which they were to choose the best instruction for the student from a multiple-choice set of strategies.

Culturally Responsive Pedagogy Pre-test for Case Study Students

The emic field researcher observed economically marginalized rural Mexican Spanish-speaking youth between 2005 and 2014 in Guanajuato, Mexico, and developed three case study students (grades 3, 8, 12) based on historically accurate biographies (See Appendix B). After reading descriptions (physical, economic, social-emotional, and cultural) of two case-study students (grade corresponding to grade desire to teach),

participants responded to prompt, "If you were case study student's teacher, how would you best motivate him/her toward academic success?" A multiple choice test followed consisting of instructional decisions for case-study student in Language Arts, mathematics, social studies, science, and electives (Scoring guide is also explained in Appendix B). Participants took the pre-assessment during week one of the quarter, and then the same one again in week twelve.

Results

Data collected for analysis resulted in a criterion-report scale to determine participants' capacity to learn to reason accurately through emotional intelligence, as well as develop cultural competence. Results show a significant correlation (coefficient $r^2 = .347$ or 35%) between participants' scores (emotional intelligence and cultural competence) and likelihood to choose effective instructional choices for CLDE students.

Undergraduate Participants Made Significant Growth

At the beginning of the 12-week quarter, three participants scored "Low" in Emotional Intelligence and in cultural competence dispositions. These same students also scored "Low" on the pre-test, demonstrating they did not understand the case study students' needs in order to determine best instructional choices. In the following 12 weeks, participants were introduced to general topics in special education including: 1) laws (IDEA and 504 plans), 2) categories of exceptionalities, 3) group project to create case study student (from readings), 4) discussion boards surrounding topics such as medication for students with ADHD, beliefs about inclusion, ways culture and language affecting learning, and 5) one field experience in which they were to assume an exceptionality for a day called "Walk in Their Shoes."

At the end of the quarter, the overall increase of undergraduates' score from week one to week twelve was 294% (from 85 to 195), which demonstrates significant growth (See Appendix C). The most dramatic increase was for two students who scored "Low" on both EI and CC, then increased their scores from -10 to 5 and 20. At the end of the course, the undergraduate students answered more than three times correctly than in week one.

Graduate Participants Show Moderate Growth

The overall score of graduate students increased 20%, from a total of 225 to a total of 280 (See Appendix D), which indicates moderate growth. In viewing graduate participants' scores from pre to post-assessment, ten students scored High in both EI and CC with top scores of 20 on pre-test; therefore, there was no room for growth over the 12-weeks for they were already at the maximum score. This research found that participants who had a background in teaching increased their understanding of CLDE needs with 20% growth; however, not as significantly as those with no teaching experience (294% growth). A 294% increase in understanding of CLDEs' needs in one 12-week college course demonstrates that students who began with low dispositional scores were able to deepen understanding of CLDEs' needs through a) explicit instruction, b) reflection, and 3) field experiences outside of the classroom (e.g., "Walk in their shoes"). With both classes increasing scores demonstrates this approach is reliable and valid, as well as a time and cost effective in measuring students' ability to grasp complex concepts.

Conclusion

In analyzing the two research questions, we discuss the implications regarding: 1) the essential attitudes and dispositions regarding ability, ethnic, linguistic, and cultural diversity that should be part of each PreService Teachers (PST) values; and 2) the ways teacher education and programs identify and nurture the attitudes and dispositions that will contribute to CLDE student success. Findings indicate that participants who made the most growth possessed minimal dispositions (score of LOW) regarding ethnic, linguistic, and cultural diversity, but curiosity and passion helped them key in on essential information throughout the course and learn to make better instructional choices for case study students. On the other hand, PST with HIGH scores on Inclusive Dispositions scored high on the pre-test, therefore did not have room to grow on post-test. These PSTs possessed strong cultural competence and an understanding of CLDEs' complex needs, which includes commitment to social justice with passion and a sense of purpose (i.e., "I volunteer often in my community"). Another part of cultural competence is possessing empathy for sociocultural factors affecting diverse students (e.g., displacement, grief, acculturation). Participants who reported high on the statement, "I have experienced profound loss" were able to connect with marginalized students, demonstrating empathy. This understanding of emotions can be expanded by reflection on one's own sociocultural and emotional needs, which emphasizes learning as part of a holistic education.

Essential attitudes and dispositions regarding ability, ethnic, linguistic, and cultural diversity that should be

part of each PreService Teachers (PST) values are: (a) caring about students, (b) empathy, (c) having a sense of purpose, passion and advocacy skills, and (d) inclusivity and reflection. Teacher educators can assist students to identify these dispositions in themselves by asking them to self-assess (e.g., Inclusive Disposition survey), and then locate evidence through reflection (e.g., journaling). Teacher education programs should nurture these attitudes by modeling and explicitly teaching these dispositions that will contribute to CLDE student success.

Caring

By recognizing the human experience as holistic, and that emotions are central to learning, teacher educators must model ways to perceive and express emotions (Mayer & Salovey, 1997). One emotion is love, demonstrated as caring for a student (Noddings, 2003, 2005). U.S. teachers should engage students at every opportunity and stop creating “seat warmers” (Mackenzie, 2010). A “seat warmer” is a CLDE child who sits and nods until the day s/he turns 16 and then drops out of school. When teachers directly address a Spanish-speaking child, the teacher violates his or her diverse student’s traditional watch, imitate, fail, repeat, and finally find success method of traditional learning (Mackenzie, 2010). Teacher educators can model and explicitly teach effective engagement strategies such as (a) assigning a bilingual peer student to be in the front of the class as often as possible, and (b) utilizing collaborative group work as the central premise of learning. It is culturally incompetent to single out Mexican-American students out to answer a question; but more culturally competent is to ask the group to give the answer. Another method of engagement is to ask about very general home life questions and let them go home to work as a family to find the answers (do not put them on the defensive or embarrass him or her). Example prompts include: “If your grandmother wanted a new kitchen counter, how high would you build it? What utensils would she like hung up in plain sight on hooks? How many dinner or salad plates would she need to store? What materials would you use to build countertops?” (MacKenzie, 2011). If teacher educators model and practice cultural competence by demonstrating dispositions of acceptance, patience, kindness, care, empathy, advocacy and being willing to learn from their students, these relationships will yield more than the teacher could ever teach the CLDE student. Taking personal interest in a student, which involves investigating the family’s cultural practices and learning styles, demonstrates true caring and commitment to social justice education. Another aspect of caring is having empathy for sociocultural factors (e.g., displacement, grief, despondency) affecting students’ lives.

Empathy

Empathy is defined as the ability to identify what someone else is thinking or feeling, and to respond to her/his thoughts and feelings with an appropriate emotion (Baron-Cohen, 2011). Many levels of empathy exist and can vary depending on personal circumstances and emotional states, which affects movement on the empathy continuum. Baron-Cohen (2011) explains that some people only think of their own interests; while others can keep in mind someone else’s mind at the same time. In viewing the significant growth of undergraduate participants, one assignment comes to mind, “Walk in their shoes.” For this project, students chose an exceptionality (e.g., visual or hearing impairment, physical challenges, mute, etc.), and assumed it for an entire day. Coming from the dominant U.S. culture in which independence is highly valued, student reflections included feelings of alienation, despondency, and dependence.

At the end of the day, a gentleman asked if a slope was too steep when it wasn’t. I let him know I was fine, but inside I was very offended. I never expected this assignment to reveal a deep seated inherent pride and self-sufficiency in my independence to get around; I guess that is something I have always taken for granted and never have had to ask for help with. The biggest lesson I learned was to have greater empathy and respect for those with exceptionalities. I don’t want to take their way of living for granted, but want to get to know them better and make sure that what I say isn’t offensive. I don’t intend to ever slight someone, but I realized that there are some big walls to overcome in letting a student with a disability know I care (written communication from student using a wheelchair).

Structuring field assignments similar to “Walk in their shoes” is one way of creating empathy in students. Another very effective way to create empathy is to take student teachers to other countries to experience being a minority. Other dispositions critical for success with CLDE students include a sense of purpose, passion, commitment, and advocacy skills.

Sense of purpose, passion, commitment, and advocacy skills

Having a sense of purpose, passion, commitment, and advocacy skills look different for most teachers, but some go way beyond the job description of traditional educator. Mackenzie (2010, 2011) moved to rural Mexico to teach and empower Spanish-speaking rural residents, who wanted something different to augment, not change, his or her life. Parents consistently requested more opportunities for a longer and a higher quality education. Most Mexican children were kind, patient, and accepting of any abnormality (i.e., physical,

mental, emotional, including gender identity issues), which also was true of most Mexican mothers (Mackenzie, 2010). Children were expected to participate in all activities, but with the help of the other children in the family. The mothers either accepted the child as a gift from God or gave the child to a relative to nurture (usually her own mother). A child who cannot care for him or her self after years of trying is carried, usually by a grandmother, and nurtured all his or her life. During field research Mackenzie (2010) describes meeting a 14-year old girl who's legs stopped growing at age two when she developed meningitis. She was well cared for, clean, and loved. Her 16 year-old sister was blind after a failed brain stem tumor operation. That blind girl was active in all family activities and also well cared for, clean, and loved. Therefore, field researchers offered equine and aqua therapy to about 120 kids, donated time and money to building a community center, importing 7,000 used books, bringing in volunteer teachers, and running after school and summer programs. Teacher educators can model community involvement as well as assign students to go out into their community to dissolve home-school barriers. One example assignment is for students to create "Parent Involvement plans" that reflect understanding of culturally appropriate ways of parent participation. Other critical dispositions include being inclusive and reflective.

Inclusivity and Reflection

Another way teacher educators can model inclusive reflection is by analyzing their own and others' habits of referencing ethnically and culturally diverse examples while teaching. Gay (2010) emphasizes that teacher programs should teach (a) ways of developing protocols that characterize different types of examples, and then replicating them from different ethnic experiences; (b) collecting examples from CLDE orientations that differ from what is customarily used in classrooms; and (c) habitually using inclusive examples to illustrate teaching concepts, knowledge, and skills; for example providing at least three examples from different perspectives (e.g., low Socioeconomic Status, Mexican-American, and dominant culture lens).

In conclusion, we offer results from one study that confirm college students' abilities to develop inclusive dispositions needed to choose effective instructional choices for CLDEs. When teacher educators intentionally provide opportunities to develop inclusive dispositions (e.g., caring, empathy, mission, advocacy skills, inclusivity and reflection), then the U.S. will realize the ideals of social justice education.

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APPENDIX A: INCLUSIVE DISPOSITIONS SELF-ASSESSMENT

When filling out the following form, please be as accurate as possible.

This course will examine DIVERSITY in four contexts: 1) physical; 2) economic; and 3) social/emotional and 4) cultural. In order to identify diverse needs of your students, you must first identify them in yourself. In responding below, your first choice is likely the best, but just in case, "other" has been added to each category. If a hand written explanation is needed, please write on the back of any page as needed. YOU WILL BE ASSIGNED A NUMBER AND CONFIDENTIALITY WILL BE MAINTAINED.

1) PHYSICAL

Gender:

☐ male ☐ female ☐ transgendered ☐ other _____

Age:

☐ 19 – 22 ☐ 23 – 26 ☐ 27 – 30 ☐ 31 – 34 ☐ 35 – 39 ☐ 40 – 45
☐ 46 – 50 ☐ 51 – 55 ☐ 56 – 60 ☐ 60 – 65 ☐ 65+

Birth Order (check all that apply):

- ☐ I am an only child.
☐ I am the middle child
☐ I am the youngest child
☐ I am the oldest child.
☐ I was responsible for other siblings much of the time.
☐ My siblings had different mothers or fathers.

I have _____ siblings

☐ other _____

Health History (check all that apply and circle correct term):

- ☐ I was born without complications.
☐ My mother/ father did not have health challenges during my childhood.
☐ My siblings did not have health challenges during my childhood.
☐ One of my friends in childhood experienced health challenges
☐ My mother/ father struggled with alcohol/drug issues during my childhood.
☐ At least one of my siblings died during my childhood.
☐ I am a parent of a child with exceptionalities
☐ other _____

2) ECONOMIC

Personal Education:

☐ enrolled in undergraduate course(s)

- ☐ obtained bachelor's degree
☐ enrolled in master degree course(s)
☐ other _____

Employment (circle correct term)

- ☐ part time / full time work unrelated to field of education
☐ teacher's assistant
☐ intern in educational field
☐ full time certified teacher
☐ unemployed certified teacher
☐ full time student
☐ other _____

Current Family Social Structure (check all that apply):

- ☐ single living alone
☐ single living with other adults
☐ married living with spouse
☐ single parent raising child(ren) as head of household
☐ married parent of child(ren) living with children and spouse
☐ married parent raising child(ren) as head of household (no physical assistance – ex. Military spouse is deployed)
☐ I live in the house where I was born.
☐ I live with pets
☐ I live in the country where I was born
☐ I live in a culturally/linguistically/economically diverse neighborhood
☐ other _____

Family Social Structure (check all that apply and circle correct term):

- ☐ Both my biological parents raised me.
☐ My grandparents or other relatives raised me.
☐ I was in foster care or spent time in an orphanage.
☐ I was adopted.
☐ My father / mother died before I was 18 years of age.
☐ A divorced mother / father raised me
☐ I have been homeless
☐ I was raised with pet(s) for which I was / was not responsible
☐ I grew up in a culturally/linguistically/economically diverse neighborhood
☐ other _____

Family Employment History (check all that apply and circle correct term):

- ☐ My father graduated from high school / college.
☐ My father worked in a labor position.
☐ My father worked in technical/administrative position
☐ My family moved to accommodate my father's / mother's career.
☐ My mother graduated from high school / college.
☐ My mother was a homemaker.
☐ My mother worked in a labor position.
☐ My mother worked in technical/administrative position
☐ other _____

3) SOCIAL/EMOTIONAL Dispositions (fill in blanks)

- ☐ I choose not to live with pets in my household
☐ I would love to have pets in my household. Other factors prevent it.
☐ I believe animals help humans with social/emotional relationships
☐ other _____
☐ I have visited _____ other states in the country where I was born.
☐ I have visited _____ other countries outside where I was born.
☐ I would love to visit another country but _____ stops me
☐ other _____

RATE YOURSELF: 1 Strongly Disagree. 2 Disagree. 3 Neutral. 4 Agree. 5 Strongly Agree

Most of my friends are in the same social (economic) class as me.

1-----2-----3-----4-----5

Most of my friends have the same skin color as me.

1-----2-----3-----4-----5

Most of my friends speak the same language as me.

1-----2-----3-----4-----5

I have stayed in houses with only dirt floors.

1-----2-----3-----4-----5

I never hesitate to make eye contact and address a child.

1-----2-----3-----4-----5

I will not ask my family to sacrifice, regardless of the needs of others.

1-----2-----3-----4-----5

I always make eye contact and smile at children with exceptionalities.

1-----2-----3-----4-----5

Reaching out to intimidated parents is an investment in a child's future.

1-----2-----3-----4-----5

Success is helping another person reach their maximum potential.

1-----2-----3-----4-----5

Nothing has more priority than caring for my family.

1-----2-----3-----4-----5

I am conscious of my actions and ways they affect others

1-----2-----3-----4-----5

I seek out opportunities to volunteer.

1-----2-----3-----4-----5

I am very "laid back;" nothing really phases me

1-----2-----3-----4-----5

I dream that I can accomplish impossible things by myself

1-----2-----3-----4-----5

I have experienced profound loss

1-----2-----3-----4-----5

My spiritual beliefs influence my school/work/relationships

1-----2-----3-----4-----5

I have been discriminated against or experienced oppression due to my economic status, gender, ability, ethnicity, language, etc.

1-----2-----3-----4-----5

Emotional Intelligence

I am able to perceive emotions in myself and others as well as in objects, art, stories, and music

1-----2-----3-----4-----5

I understand how emotions combine and progress, and appreciate emotional meanings 1-----2-----
3-----4-----5

I am open to feeling emotions, and regulate them to seek to understand them to promote personal understanding and growth

1-----2-----3-----4-----5

I am aware when I attempt to regulate other people's emotions

1-----2-----3-----4-----5

I express my emotions without hesitation

1-----2-----3-----4-----5

I am aware of and follow sociocultural norms of emotion regulation

1-----2-----3-----4-----5

I feel comfortable when people around me express their emotions

1-----2-----3-----4-----5

4) CULTURAL DISPOSTIONS

I know about my own cultural history, and it plays a prominent role in my life 1-----2-----3-----
--4-----5

I seek to acknowledge cultural norms, and am sensitive to them

1-----2-----3-----4-----5

Diversity is valuable and different perspectives help me think critically

1-----2-----3-----4-----5

I understand learning varies among individuals and does not follow one pattern 1-----2-----3-----
--4-----5

I believe everyone should be treated equally

1-----2-----3-----4-----5

Limited resources should be respected by all peoples regardless of cultural beliefs (e.g. dynamite fishing, eating protected species)

1-----2-----3-----4-----5

I have studied first-hand accounts of minority groups' experiences in the U.S. 1-----2-----3-----
--4-----5

I understand the value of working with others to solve problems

1-----2-----3-----4-----5

I understand that the dominant culture's exclusive laws and practices have limited minority groups' participation in U.S schools

1-----2-----3-----4-----5

I believe some people require different treatment

1-----2-----3-----4-----5

When I walk by someone experiencing homelessness I am uncomfortable

1-----2-----3-----4-----5

I am aware of different communication/behavior patterns among different groups 1-----2-----3-----
--4-----5

I feel uncomfortable when people around me speak a different language

1-----2-----3-----4-----5

When I meet someone with a visible exceptionality, I presume competence

1-----2-----3-----4-----5

APPENDIX B: CASE STUDY STUDENTS**Case Study One JOSE Grade 3:**

Jose is 9 ½ years old. He has always lived in a modest home in Rancho (Campo) Navidad in Central Mexico. He has seven brothers and five sisters; eight of the siblings are older than he. Although Jose is in 4th grade, and he attends school, he has no time for school homework. The demands of his family usurp any option to study outside of his classroom, besides, the roof leaks in all the homes in the campo. Rural teachers resist allowing books to be taken into local residences, as the school property is likely to be ruined.

Jose's father is a subsistence farmer who does "odd jobs" on the side. Most of the jobs are close by the house, as the family does not own a car. Jose's mother cares for her own household; she also helps her own parents, her husband's parents, her siblings, and all the grandparents. Neither parent has the time or academic strength to help Jose. Most adult parents, in their community, left school in 5th or 6th grade, and have had no access to books after that period of their lives.

Jose has never been to the near-by city (less than one hour away), nor has he visited any towns. As a low class (Campesino) Mexican, his heritage dictates that any family member who is over three years of age works to help support the family. The child's job is to support the family, not to excel in school. Their job in school is to be respectful. Family members do not directly instruct children, instead children learn by observing older family members. The child then applies a trial and error effort, alone or with peers, until the results are successful. The logic of how something is undertaken is often not a consideration.

If you were Jose's Spanish speaking teacher living and teaching in Mexico, how would you best motivate Jose toward meeting his schoolwork obligations?

There are seven curriculum requirements for his 4th grade program. Based on the text in Situation One, pick the **best** answer for each of the areas.

1. Visual Art: Student should be able to express an understanding of color, line, texture, form, value, space, shape, pattern, contrast, balance, reputation, emphasis, rhythm/movement, and unity.
 - a. I would create a thematic lesson plan for the seven curriculum requirements, based on roof designs. For this part, Jose could draw different roof shapes using various architectural approaches.
 - b. Allocate time for Jose to be artistically self-expressive in the classroom without any input from an educator.
 - c. Allocate time for Jose to be artistically expressive in the classroom as a result of direct instruction by an educator.
 - d. Allocate time for Jose to be artistically expressive in the classroom within a group setting (3-4 other students) with only a theme and a suggested end product being suggested by their educator.
 - e. Directly instruct Jose, and the other students, which of various symbols to draw that are likely to have native roots that may be based on their cultural background.
2. Mathematics: Student should be able to gain a mastery of skills, concepts, and processes related to values, graphs, multiplication and division, angles, figures, and segments. Be able to express fractions, mixed numbers, decimals, and negative numbers.
 - a. Allocate time for Jose to complete math worksheets in the classroom, and on his own without any input from an educator.
 - b. I would create a thematic lesson plan for the seven curriculum requirements, based on roof designs. For this part, Jose could design different roof angles. He would explain how to use math to have water or snow runoff correctly.
 - c. Allocate time for Jose to work with a peer group (3-4 other students) in the classroom with a specific worksheet (an end product) being supplied by their educator.
 - d. Allocate time for Jose to complete math worksheets in hardcopy or on a computer with the teacher always available to aid in any additional instruction.
 - e. Encourage Jose to pick 3-4 peers who have a similar problem at home, like lying out a veggie garden or building a tool shed. Allocate time for them to work out the measurements using the math they know or are learning, before handing in a group report/solution.
3. Music: Student should be able to create, perform, and respond to choral or instrumental music.

- a. Allocate time for Jose to match his favorite songs with his emotions. The end product is a list handed in to the teacher.
 - b. Allocate time for Jose to match a list of words to a list of music titles that were created by the teacher. There is a way for the students to hear each song and try to understand what emotion was being highlighted/featured. The teacher would always be available to answer questions.
 - c. Allocate time for Jose to work with a peer group (3-4 other students) in the classroom to develop a list (the end product) of what emotions might be singled out by different songs. The teacher will supply a sample list of songs and emotions, but the students are welcomed to add either to the list.
 - d. Allocate time for Jose and 3-4 friends to match a list of words to a list of music titles that were created by the teacher. There is a way for the students to hear each song and try to understand what emotion was being highlighted/featured. The teacher would always be available to answer questions.
 - e. I would create a thematic lesson plan for the seven curriculum requirements, based on roof designs. For this part, Jose could explain how to incorporate social or religious worship with music on flat rooftops being used like patios.
4. Physical Education: Student should be able to express movement skills, health related fitness, and a clear understanding of personal and social responsibility within competitive team or individual sports activities.
 - a. I would create a thematic lesson plan for the seven curriculum requirements, based on roof designs. For this part, Jose could demonstrate how different roof angles are like the slanting of a surf or skateboard. Without momentum, even a well-muscled human body will not stand up at too much of an angle and could be injured.
 - b. Allocate time for Jose to match pictures of athletes at odd angles to what might happen to them (head injury, broken knee, sore toe) if that is not corrected. The teacher for each student to fill out created the worksheets.
 - c. Allocate time for Jose and 3-4 friends to create examples of sports that put an athlete at an angle. They may cut out photos from magazines. List a written report, paste photos, or make stick drawings of what that might look like, and how to avoid an injury. The teacher would always be available to answer questions.
 - d. Allocate time for Jose to explain verbally in front of the classroom what sports make him feel like he might lose his balance and injure himself.
 - e. Allocate time for Jose to interview other boys in the classroom about what sports make that boy feel like he might lose his balance and get injured.
5. Reading/Language Arts: Student should be able to demonstrate an appropriate vocabulary with expression of the relationship between words, have a fluency, and comprehension. Reading abilities include before, during, and after reading strategies that are in line with classmates as well as appropriate to school standards, and be able to express in written and spoken word with the same level of language arts mastery.
 - a. Allocate time for Jose and 3-4 friends to create a story related to working with relatives at income producing tasks. Students are encouraged to use the vocabulary of the job (carpentry, fishing, farming, animal husbandry). The outcome might be a report or a story without using actual names to preserve privacy.
 - b. Allocate time for Jose to explain verbally what it is like to work with relatives from Friday night to Sunday night and most days after school.
 - c. Allocate time for Jose to match names of career positions and the vocabulary of that position/job/work. The teacher creates the worksheets for each student to fill out.
 - d. I would create a thematic lesson plan for the seven curriculum requirements, based on roof designs. For this part, Jose could research names of roof designs, and write a report on what he learned. The emphasis would be on using specific architectural terms in the report that are related to roof designs.
 - e. Allocate time for Jose to match his favorite way to earn money for the family with a one-paragraph story about each task. The end product is a list handed in to the teacher.
6. Science: Student should be able to demonstrate an understanding or both physical and earth sciences including biology, chemistry, physics, and environmental sciences. Evaluations would cover developing a testable inquiry, making a prediction, creating a procedure, and forming a conclusion.

- a. Allocate time for Jose and 3-4 friends to discuss a local community problem. Teacher will encourage the students to seek help by naming people in the community most likely to be able to help solve the problem. Only one student who was voted to speak for the entire group will present the results.
 - b. I would create a thematic lesson plan for the seven curriculum requirements, based on roof designs. For this part, Jose could explain why the style of a building's roof can solve a scientific problem (like rainwater catchment).
 - c. Allocate time for Jose to match personal and community problems with possible solutions appropriate to the community. The teacher creates the worksheets for each student to fill out.
 - d. Allocate time for Jose to write down a physical or earth sciences problem that someone in the community or his family has solved. He will need to make it clear why he thinks the solution was a good one. The outcome is a written report.
 - e. Allocate time for Jose and 1-3 friends so create a graphic of how to tackle a problem like moving water away from a home after a rain, decreasing chemical runoff from an animal confinement area, or other community or home challenge. The outcome is the graphic.
7. Social Studies: Student should be able to explain the historical background of their country including geography, economics, culture, and civics.
 - a. I would create a thematic lesson plan for the seven curriculum requirements, based on roof designs. For this part, Jose could explain why the look of a building's roof can make a social statement.
 - b. Plan ahead to have students dress up for a mock job interview. Working in groups, all students will prepare a statement of the job that two students are applying for and what questions will be asked. The other two students will play the role of interviewer during the mock interview.
 - c. Allocate time for Jose to match social consequences of doing badly on a job interview with poor choices before the interview (ex: dressed poorly). The teacher creates the worksheets for each student to fill out.
 - d. Plan ahead to have students dress up for a mock job interview. Each student will prepare a statement of the job they are applying for and what questions the teacher will ask the student in the mock interview.
 - e. Allocate time for Jose and 3-4 friends to discuss a local community problem. Teacher will encourage the students to seek answers by naming people in the community most likely to be able to help solve the problem. Results will be a group verbal presentation.

Case Study 3 Poncho Grade 12:

Poncho is almost 17 years old. He was born in Southern Mexico, but he moved (legally) to the USA when he was 15. He has two younger brothers; he is the oldest. His mother is a strong woman who served time in a Mexican prison for selling a small amount of drugs. She was doing what she had to do to survive to feed her three boys. She states openly: "Prison was the best thing that ever happened to me. I learned how to sew, keep a budget, and about nutrition for my boys."

After his mother went into prison, Poncho's uncle, a US Citizen, took custody of him. The uncle paid for Poncho to enter the USA. That story sounds like a dream come true, but the fact was, Poncho became a poorly paid employee. The cost of the US visa came out of every paycheck. Poncho dreamed of making life easier for his mother. The reality was a much harder life for Poncho. He was away from a loving mother, his brothers, his friends, and he was unable to accomplish what he had given so much up to accomplish. Poncho was resentful.

Poncho's uncle had to send him to school. Therefore, Poncho's physical body was in a seat in a US classroom. For a year, Poncho "warmed the seat" of a classroom chair, but he did not learn much English, and no academic content. He was always physically exhausted, emotionally drained, and mentally preoccupied with trying to get back home to Mexico. However, Poncho knew that the child's job is to support the family, not to excel in school. His job in school was to be respectful, so he did his best in the classroom, and at "home" (in his uncle's house). An occasional phone call from his mother reminded him of that obligation.

Poncho dropped out of school the day he turned 16. His goal was to pay off his uncle as soon as possible, and head home to his family. He worked hard for his uncle, but the amount he owned did not seem to change any faster than when he was in school full time. After a year of working 18-hour days at his uncle's construction company, Poncho began to realize that he needed legal help. He entered a free legal clinic, and asked

questions. He was told that as an American citizen, he had civil rights. A compassionate pro-bono attorney, could see a bright young man without hope because he was being treated poorly. The attorney got Poncho into an alternative education program. Poncho was given room and board, and a small amount of spending money in exchange for attending an alternative high school. Poncho immediately sent every cent of the spending money to his mother.

If you were Poncho's English speaking alternative teacher living and teaching in the USA, how would you best motivate Poncho toward academic success?

There are various curriculum options to become a high school graduate. Based on the text in Situation Three, pick the **best** answer for each of the areas.

1. Career Pathways – There is a long list of reasons why students in the USA are placed in alternative schooling programs. Poncho fits into about 90% of those reasons. The effort/costs required to make him a graduate is extensive, however, making him a member of social programs is a waste of his potential and taxpayer dollars. Therefore, the first goal is to make sure he has the skills to financially support himself.
 - a. I would put him into a program to teach him the construction trade. All Mexicans are good with their hands, so why waste any more time looking elsewhere for a career path?
 - b. My first step would be to give him the Strong-Campbell interest survey. After scoring it, I would have a clear idea of not only what career pathway interests him, but if he has the mental ability to be successful in that field.
 - c. It seems so simple to just ask what his father did to make a living and have him follow in those footsteps.
 - d. Research into various technical or academic programs might be a good first step. For example, all MIT (Mass. Inst of Tech) courses are free online. Just having him read the offerings might stimulate his interest and, therefore, a first step in finding a good match.
 - e. Have Poncho work with 3-4 friends to discuss what kind of options for adult careers each might feel drawn to explore. Results will be a group verbal presentation to their alternative teacher.
2. Practical Math – Like many students, Poncho knows that math is a weak area for him. He struggles with solving problems in math and avoids using math whenever possible.
 - a. Locate math resources related to every day life. Acquire a textbook or online resources that focus on practical math. Give him a reason to understand the usefulness of the math his is mastering.
 - b. Make it fun to imagine having to create a home budget to have enough money left to acquire a motorcycle or a car. Show him how planning ahead makes sure that the rent is paid, he is eating, and can still afford transportation.
 - c. It seems so simple to just ask what his mother did to raise her sons and have him do the same.
 - d. Locate a successful Latino businessman who also struggled with math. Arrange it so that Poncho might spend an hour or two in the workplace with such a man and get more inspiration to learn enough math skills to be self-sufficient.
 - e. Have Poncho work with 3-4 friends to discuss ways that math can make life easier to understand. Results will be a group verbal presentation to their alternative teacher.
3. Language Arts – Many students from the rural areas of Mexico have no access to books after 5th or 6th grade. There are no newspapers or libraries. They live in a verbal world; not in a written world. The Internet has been the best tool for inspiring a desire to read
 - a. Locate a successful Latino businessman who also struggled with reading, but now is successful due to that mastery. Arrange it so that Poncho might spend an hour or two in the workplace with such a man and get more inspiration to learn enough reading skills to be self-sufficient.
 - b. Have Poncho work with 3-4 friends to discuss ways that reading can make life easier to understand. Results will be a group verbal presentation to their alternative teacher.
 - c. Locate various resources for Poncho to have access to the Internet as many hours a day as possible. Make it easy for him to accomplish his school assignments by giving him as many reading with positive results options as possible.

- d. Make it easy on yourself and just give him reading assignments that are like all the other students. He will not read them anyway. None of the students do. He is just your paycheck.
 - e. Results are the key to encouraging a student to read. Once his areas of interest are pinpointed, then make his reading assignments fall in line with those interests. Monitor him to assure continued engagement.
4. Social Comprehension
- a. Have Poncho go on a field trip with 3-4 friends to a prison. Make sure that some Latino prisoners are within view. Have the boys work together to give a verbal presentation to their alternative teacher about how they feel about that type of an outcome to failing academic studies.
 - b. Focus on a Latino community not far from the school. Have poncho write a report, play, poem, or drawing about what works in that community, what does not, and why.
 - c. Make arrangements for Poncho to work in several different roles on actual job sites with Latino men (approved by the school). The contact with a male mentor can be a good chance to see how adult life can follow a pathway that might not be planned.
 - d. Assign Poncho a computerized infant doll to car for: feed, change, rock, etc. for a week. This experience will go a long way to helping him understand the need to be a responsible persona and avoid early fatherhood.
 - e. Have Poncho take photos of his community to explain why he loves or hates living there.

Culturally Responsive Pedagogy Scoring Key – The Higher The Number of Points, the More Cultural Understanding is Apparent.

Case Study One:

1. Visual Arts

- a. 0 points – Jose lives in a bare bones hand-to-mouth environment. As a result, Jose has little understanding of other cultures, different climates, and/or construction of artistic designs for something other than just staying out of the natural elements. This type of a lesson might be better suited first for the social studies curriculum, and later as a visual arts lesson.
- b. ½ point – Encouraging Jose to be self-directed is the best outcome for creating a life-long learner. However, this is a process that will require pre-planning, instruction, and follow-up to put into motion.
- c. 1 point – This is a good way to begin Jose on the path to being self-directed, but it is not the most ideal.
- d. 2 points – This the best option for Jose. His lifestyle is one of multi-generational interdependence. He is used to working alone or with others in a trial and error manner to eventually accomplish a task. This approach is scaffolding on his already learned, and often reinforced, behavior at home.
- e. 0 points – Assisting students in expressing their cultural values, that were learned at home or in a religious learning environment, is appropriate. However, dictating what symbols or activities are to be represented is inappropriate.

2. Mathematics

- a. Minus 1 point – Unrelated math concepts are difficult for Jose to understand either the value of understanding them or even why to bother asking for help. This approach will lower his desire to learn, not encourage him to be a self-directed life-long learner.
- b. 0 points – Jose might enjoy designing roofs, but until he has a better understanding of math as it relates to house roofs and cultures, this approach will not be very effective. Also, this method could simply cause frustration or a feeling of intimidation in Jose.
- c. 1 point – Working with peers to solve any problem is a better approach for Jose than working alone. However, it falls short on relating to their home environment.
- d. 1 point – Working with a computer or hardcopy is less frustrating if the teacher is available to help. However, it falls short on relating to Jose's home environment; it is an abstract concept.
- e. 2 points – This the best option for Jose. His lifestyle among his peers is one of multi-generational interdependence. He is used to working with others in a trial and error manner to eventually accomplish a task that has a logical end. This approach is scaffolding on his

already learned, and often reinforced, behavior with his peers or relatives. The end report makes sense to all of the students.

3. Music
 - a. Minus 1 point – Latin men are not encouraged to discuss or even think about vulnerable emotions.
 - b. 1 point – Separating his emotions from this assignment is a good option. For the students to hear each song and try to understand what emotion was being highlighted/featured is culturally sensitive. The teacher available to answer questions is reassuring.
 - c. 1 point – This the best option for Jose. Allocate time for Jose to work with a peer group (3-4 other students) in the classroom to develop a list (the end product) of what emotions might be singled out by different songs. The teacher will supply a sample list of songs and emotions.
 - d. 2 points – This the best option for Jose. Working with peers, having a list of songs and emotions, listening to the songs, being able to input their own choices of songs or emotions, and having the teacher available are all outstanding options to use each other, more senses, and be creative with backups (the list, songs, and teacher).
 - e. 1 point – allowing Jose to explain (verbally) how to incorporate social or religious worship with music on flat rooftops being used like patios beings in aspects of his home life.
4. Physical Education
 - a. 0 points – Jose is unlikely to have a background that can relate roof angles to sports. He may also have a lack of understanding of muscle groups as personal body functions, in the Mexican polite and respectful society are not normally discussed (even with doctors).
 - b. 1 point – Match pictures of athletes at odd angles to what might happen to them (head injury, broken knee, sore toe) is a way to offset a lack of knowledge about sports Jose has never seen played. The teacher created the worksheets, so Jose will not feel inferior for not knowing about a sport he has never seen.
 - c. 2 points – This the best option for Jose. Working in a group setting, with hands-on, creative expression as the outcome, and a teacher back up is the best approach for a successful outcome.
 - d. Minus 1 point – Jose will not find this an appropriate thing to discuss in his classroom as it makes him feel less than “macho.”
 - e. Minus 1 point – Latin American boys will not find this an appropriate discussion as it makes them feel less than “macho.”
5. Reading/Language Arts
 - a. 2 points – This the best option for Jose. Working in a group setting, with the vocabulary of the job each student is already doing creates a sense of pride without having to be public about each job.
 - b. 1 point – If Jose is proud of what he knows and what he can do to help his family, this can be a very positive approach to creating a life-long learning situation.
 - c. ½ point – Jose is likely to feel bored if there are too many assignments like this for him to complete. More “hands-on” or group work is a better approach.
 - d. 1 point – In general, thematic lesson plans can be very helpful in drawing together several areas of the curriculum into a single theme.
 - e. Minus 1 point – Although Jose needs to learn to read and write, to be “put on the spot” to work alone is likely to overwhelm him and reduce his love of writing.
6. Science
 - a. 2 points – This the best option for Jose. Working in a group setting, and reaching out into their funds of knowledge within the community is empowering to the students. Choosing one speaker takes pressure off the ones not wanting to speak.
 - b. 1 point – In general, thematic lesson plans can be very helpful in drawing together several areas of the curriculum into a single theme.
 - c. ½ point – Jose is likely to feel bored if there are too many assignments like this for him to complete. More “hands-on” or group work is a better approach.
 - d. ½ point – Jose is likely to feel put on the spot to think of a problem and solution on his own. He might just “freeze up” and not get the assignment done at all. More “hands-on” or group work is a better approach.
 - e. 2 points – This also a “best option” for Jose. Working in a group setting as a graphic design to tackle a problem makes it more real. The outcome is a graphic; there is less individual social pressure.
7. Social Studies.

- a. 1 point – In general, thematic lesson plans can be very helpful in drawing together several areas of the curriculum into a single theme that has various looks, feels, or outcomes.
 - b. 2 points – This the another “best option” for Jose. Working in a group setting, and interviewing each other makes the situation more real. Being well dressed is vital in this culture and that one element will make this very affective.
 - c. ½ point – Jose is likely to feel bored if there are too many assignments like this for him to complete. More “hands-on” or group work is a better approach.
 - d. ½ point – Jose is likely to feel put on the spot to think of a job and questions on his own. He might just “freeze up” and not get the assignment done at all. More “hands-on” or group work is a better approach.
 - e. 2 points – This the best option for Jose. Working in a group setting, and presenting as a group discussion may also draw some of the other classmates into the discussion and increase the opportunity for “flow.”
8. End Notes
- a. Jose has older siblings. In most cases in the campo, caring for and teaching younger siblings is a natural aspect of life. If you learn that an older sibling is inclined to be interested in school, you might gain partner in the effort to help Jose become a life-long learner. That option could open a whole other aspect of mentorship.

Case Study 3 scores

1. Career Pathways
 - a. – 1 point – Perpetuating social bias and cultural myths is the last avenue to creating a sustainable adult!
 - b. 2 points - The Strong-Campbell interest survey is an outstanding tool for evaluating passion and abilities to meet those goals.
 - c. ½ point – Although this is often used as a guideline in many cultures, it is not individualized to the student.
 - d. 2 points – An excellent broadly reaching and inexpensive solution.
 - e. 1 point – Group work is nearly always a good option for rurally raised Latinos as it mimics childhood methods, but this means lacks deep insight into options that are available.
2. Practical Math – Like many students, Poncho knows that math is a weak area for him. He struggles with solving problems in math and avoids using math whenever possible.
 - a. 1 point – A good way to understand the usefulness of math.
 - b. 2 points – When the “prize” is desirable, the motivation to learn and retain is increased.
 - c. – 1 point – this is not a reliable solution
 - d. 1 ½ points – May be a very successful experience, but may also backfire if they do not make a good connection
 - e. 1 point – Group work is nearly always a good option for rurally raised Latinos as it mimics childhood methods, but this means lacks deep insight into options that are available.
3. Language Arts – Many students from the rural areas of Mexico have no access to books after 5th or 6th grade. There are no newspapers or libraries. They live in a verbal world; not in a written world. The Internet has been the best tool for inspiring a desire to read
 - a. 1 ½ points – May be a very successful experience, but may also backfire if they do not make a good connection
 - b. 1 point – Group work is nearly always a good option for rurally raised Latinos as it mimics childhood methods, but this means lacks deep insight into options that are available.
 - c. 2 points – An excellent broadly reaching and inexpensive solution.
 - d. -1 point -
 - e. 1 ½ points – An excellent broadly reaching and inexpensive solution.
4. Social Comprehension
 - a. 1 point – Studies have shown that this can be effective, but lacks reliable results
 - b. 1 ½ points – the creativity to this option makes it very promising
 - c. 1 point – May be a very successful experience, but may also backfire if they do not make a good connection
 - d. 2 points – The results to avoid early fatherhood have been significant.
 - e. ½ point – May be helpful but only if Poncho is honest.

APPENDIX C: RESULTS UNDERGRADUATES

*Results of Inclusive Dispositions Self-Report Correlated with
Pre & Post Culturally Responsive Pedagogy for Case Study Students*

<u>Social/Emotional</u>	Score	E.I.	Pre Case Study	Post Case Study
100% = 55	-3	Low	void	void
Pets	0	Low	void	void
Travel	6	Low	void	void
Friends	7	Low	-10	-10
Housing	8	Low	-10	5
Extroversion	9	Low	-10	20
Introversion	9	Low	5	20
Self Knowing	10	Avg	5	20
Discrimination	12	Avg	5	20
	13	Avg	10	20
	15	HIGH	10	20
	17	HIGH	20	20
	17	HIGH	20	20
	18	HIGH	20	20
	21	HIGH	20	20
+294%			85	195

<u>Cultural</u>	Score	C.C.	Pre Case Study	Post Case Study
100% = 30	5	Low	void	void
Heritage	7	Low	void	void
Diversity	9	Low	void	void
Learning	9	Low	-10	-10
Equality	9	Low	-10	5
Ecology	10	Low	-10	20
Minorities	12	Avg	5	20
	12	Avg	5	20
	13	Avg	5	20
	13	Avg	10	20
	14	HIGH	10	20
	14	HIGH	20	20
	17	HIGH	20	20
	18	HIGH	20	20
	23	HIGH	20	20
+294%			85	195

APPENDIX D: GRADUATE STUDENT RESULTS

*Results of Inclusive Dispositions Self-Report Correlated with Pre & Post Culturally Responsive Pedagogy
for Case Study Students*

<u>Social/Emotional</u>	Score	E.I.	Pre Case Study	Post Case Study
100% = 55	void	void	void	void

Pets	void	void	void	void
Travel	-2	low	-10	-10
Friends	1	Avg	-10	15
Housing	5	Avg	-10	15
Extroversion	8	Avg	15	15
Introversion	9	Avg	15	15
Self Knowing	9	Avg	15	15
Discrimination	9	Avg	15	15
	10	HIGH	15	20
	11	HIGH	20	20
	15	HIGH	20	20
	16	HIGH	20	20
	16	HIGH	20	20
	16	HIGH	20	20
	19	HIGH	20	20
	23	HIGH	20	20
	24	HIGH	20	20
+20%			225	280

<u>Cultural</u>	Score	C.C.	Pre Case Study	Post Case Study
100% = 30	void	void	void	void
Heritage	void	void	void	void
Diversity	3	low	-10	-10
Learning	6	Avg	-10	15
Equality	6	Avg	-10	15
Ecology	7	Avg	15	15
Minorities	8	Avg	15	15
	9	Avg	15	15
	10	HIGH	15	15
	11	HIGH	15	20
	11	HIGH	20	20
	12	HIGH	20	20
	12	HIGH	20	20
	13	HIGH	20	20
	14	HIGH	20	20
	14	HIGH	20	20
	14	HIGH	20	20
	22	HIGH	20	20
+20%			225	280

NORMALIZATION VS SOCIAL ROLE VALORIZATION: SIMILAR OR DIFFERENT?

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The radical changes towards services for persons with disabilities were brought by Principle of Normalization, originated in 1969. As a consequence of Normalization, disability as a whole, and intellectual disability in particular, received the attention of the mass and the intelligentsia begun advocating normalization ideologies which became very popular across the globe as 'the right based ideology, which in turn, initiated integration, inclusion, community based rehabilitation and other non-segregating practices. But 'Normalization' came under criticism because of its simplicity resulted in an evolution in thinking which shifted the term 'Normalization' to 'Social Role Valorization' (SRV). Although, Normalization and SRV uplifted the lives of persons with disabilities, a disagreement appeared about their similarity. The present study critically examines the guidelines of these two human services for similarities and differences upon several criteria using cluster analysis and critical analysis. The Jaccard's Similarity Index has been computed to see similarity between documents explaining the concepts. The result revealed poor similarity index between documents explaining the concepts. It was also observed that Normalization and SRV differ from each other in their totality, but are the ways to achieve Social Inclusion.

Introduction

The main contribution from the Nordic countries to the international development of policies and practices in services for people with intellectual disabilities (ID) is no doubt the conceptualization and dissemination of the notion and Principle of Normalization (Tossebro, Bonafills, Teittinen, Tideman, Traustadottir & Vesala, 2012, pp:135). The essence of Normalization and Social Role Valorization lie in their consequences. These two ideologies (sometimes argued that these are not ideologies but rather, guiding principles to human services) initiated major reforms in human services for children with various disabilities. The Principle of Normalization was the precursor of programs emphasizing inclusive approaches. These inclusive services include integration, full inclusion, promoting Self Determination (SD), Community Based Rehabilitation (CBR), and legislation to protect human rights of persons with disabilities and so on. The concept of 'Integration' was first given by Benjt Nirje- the pioneer of

Normalization Principle. Nirje has defined integration as: "to be yourself—to be able and to be allowed to be yourself—among others (Nirje, 1985 pp-67)". Not only Integration, but also empowerment, self-determination, choice, consumer-directed service models, independent living, individual funding, natural support, mentoring, circle of supports or Inclusion, all such practices have their roots in the ideas of Normalization and Social Role Valorization (Caruso and Osburn, 2012; Bank-Mikkelsen, 1969; Nirje, 1969).

There was a period in which the 'Normalization' philosophy became so entrenched in everyday thinking and practice in the intellectual disability field that it was as if no one dared to question it. Despite the far-reaching adoption of practices based on Normalization Principles and the widespread recognition of the many benefits of these for service users, Normalization has become tainted with controversy (Culham & Nind, 2003, pp-68). Immediately after its formulation, Normalization has so widely misunderstood that just after ten years of its formulation, both the pioneers; Nirje & Wolfensberger differed in their thinking of Normalization significantly, even to such an extent that Wolfensberger changed the name from Normalization to Social Role Valorization.

The present study was intended to compare similarities and /or differences between Normalization and Social Role Valorization, and the underlying ideas behind these two. For this purpose content analysis of documents were carried out, to see whether Normalization and Social Role Valorization are similar.

While conducting content analysis at first, two articles from the both principles written by their respective pioneers Benjt Nirje and Wolf Wolfensberger were selected for analyzing their content. Two groups were formed. The classic article of Nirje, published in 1969, initially formulating the first statement of Principle of Normalization namely "Normalization principle and its human management implications" was the first article and the other one was "Setting The Record Straight" written by Burt Perrin & Benjt Nirje formed group one and the other group included two fundamental articles from Wolfensberger, first one was "An overview of Social Role Valorization theory" written by Wolfensberger and Lemay and the second one was "Proposed new term for normalization" written by Wolfensberger. A content analysis was performed using the qualitative data analysis software Word Stat. In order to see the similarity between these four documents under two groups, a Jaccard's correlation coefficient (Jaccard's Similarity Index) was computed on the basis of word similarity between these documents. The computed correlation is as below:

Correlation between the original formulation of Normalization and Social Role Valorization based on their word similarity:

Table 1. Correlation between the original formulation of Normalization and Social Role Valorization based on their word similarity

Sl No.	Document	Correlations	
	Code	(Jaccard's Coefficient)	
		S1	S2
1.	N1	0.14	0.12
2.	N2	0.21	0.14

The above Table 1 shows a very poor correlation between the original formulation of Normalization and Social Role Valorization which provides enough space to suspect dis-similarity between these two. It may be noted here, that the correlation between the two primary documents within the group i.e. between

the two documents on Normalization and two documents on Social Role Valorization were found relatively high indicating consistency in formulation of both the ideologies/principles.

As observed, the poor correlation indicates no overt similarities between these two guiding principle of human services: Normalization and Social Role Valorization. In order to see the latent differences between Normalization and Social Role Valorization it is interesting to note the criticism of both made by their respective pioneers Nirje and Wolfensberger.

Latent Differences between Normalization and SRV

The comparison of Normalization and SRV are given below:

Comparison of Normalization and Social Role Valorization on the basis of their emphasis towards social inclusion:

Table 2. Comparison of Normalization and Social Role Valorization on the basis of their emphasis towards social inclusion

Criteria of comparison 1 : Emphasis

1.	Normalization	The Normalization principle emphasizes that people with handicaps should be given an opportunity to live a life similar to that of other non-disabled persons in the society, having similar rights and responsibilities within certain limits which varies from society to society and culture to culture.
2.	Social Role Valorization	Social Role Valorization theory emphasizes 'normalizing' the lives of deviant people through eliciting, shaping and maintaining normative skills and habits. It calls for certain behaviors must be ascertained by devalued groups or parties before considering their social inclusion.

Comparison of Normalization and Social Role Valorization on the basis of their intended goals and intended population:

Table 3. Comparison of Normalization and Social Role Valorization on the basis of their intended goals and intended population

Criteria of comparison 2 : Intended Goals and Intended Population

1.	Normalization	Providing equal opportunities to persons with disabilities similar to their non-disabled peers (Perrin & Nirje, 1985, Kumar & Thresiakutty, 2012) persons with intellectual disabilities in particular and persons with disabilities in general.
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		Enhancement of social roles of socially devalued groups, persons with disabilities may be part of these groups.
	Social Role	1.Enhancing social images
2.	Valorization	2. Enhancing personal competencies of devalued group.
		3. Analysis of Service systems in conformity with Normalization Goals. All socially devalued persons or groups.

As we see in the above tables (Table 2 & Table 3), Normalization and Social Role Valorization differs from each other in terms of their intended populations as well as their intended goals. Normalization is intended to foster the need of Social Inclusion of persons with disabilities only whereas Social Role Valorization includes all socially devalued groups. First one is clearly intended for persons with disabilities, but the intended population of SRV is vague. Devalued Groups may differ place to place and situation to situation.

Comparison of Normalization and Social Role Valorization on the basis of opinion of the Pioneers about each other:

Table 4. Comparison of Normalization and Social Role Valorization on the basis of opinion of the Pioneers about each other:

Criteria of comparison 3 : Opinion of the Pioneers about each other

1.	Normalization: Wolfensberger views it as a misunderstood ideology due to ease of the term. <i>As he mentions "the choice of the term 'normalization' itself clearly been unfortunate, one major reason being that relatively few people have found it possible to separate the different meanings attached to it by various users of the term (Wolfensberger, 1983 pp-235)"</i>
2.	Social Role Valorization: Nirje views <i>"Social Role Valorization is an authoritarian approach which neglects personal preferences, whereas Normalization principle indicates that persons with mental retardation should be encouraged and assisted in expressing their own preferences and making their own choices."</i> (Nirje, 1985 pp-72)

The above Table 4 reveals that the view of Nirje towards, Social Role Valorization was that it is an authoritarian approach which has nothing to do with 'Normalization' as formulated and popularized during 1970's. Wolfensberger views 'Normalization' as a misunderstood and misinterpreted ideology due to ease of term. It can be said here that Normalization was too easy to be interpreted correctly and Social Role Valorization is too complex to be understood properly by the public and professionals both.

Comparison of Normalization and Social Role Valorization on their theoretical base:

Table 5. Comparison of Normalization and Social Role Valorization on their theoretical base
Criteria of Comparison 4: Theoretical Base

1.	Normalization	Normalization is based on the ideas implemented by Bank Mikkelsen, during deinstitutionalization movement. "The mentally retarded have, along with other human beings, a basic right to receive the most adequate treatment, training, and rehabilitation available, and to be approached in an ethical fashion (Mikkelsen, 1969, pp. 234)".
2.	Social Role Valorization	Social Role Valorization: Social Role Valorization or SRV in short is based on Role Theory of Sociology which describes society on the basis of roles played by its members at different times. As learnt from Wolfensberger, Establishment, Enhancement and defense of social roles of devalued people/parties via the enhancement of their personal competencies and their social roles is Social Role Valorization. As Cocks (2001) explains it, "SRV provides a set of relations in support of the social integration of devalued people in valued participation with valued people in valued activities which take place in valued settings. (Cocks, 2011, pp. 15)

From the above Table 5, it can be observed easily that Normalization and Social Role Valorization differ to a greater extent from each other on the criteria of their theoretical basis. Normalization is based on the simple idea of Human Rights whereas SRV has different base of social roles rooted in sociology.

Comparison of Normalization and Social Role Valorization on the basis of ease of their understanding:

Table 6. Comparison of Normalization and Social Role Valorization on the basis of ease of their understanding

Criteria of Comparison 5: Ease of Understanding

1	Normalization	Very simple and easy and due to the ease of term "normalization principle has been widely misunderstood both by many of its advocates as well as by its critics. In some cases it has been misinterpreted so perversely as to produce implications and programs directly opposite to what is intended by the principle." (Nirje, 1985, pp-69)
2	Social Role Valorization	Quite complex, requires a rigorous training on SRV, is a broadened theory with its root in modern sociology developed for a relatively big population (for socially devalued people which include women, minorities, old age persons, divorcees, widows, persons with disabilities and Scheduled Castes (SCs), Scheduled Tribes (STs), too in specific Indian context.

Comparison of Normalization and Social Role Valorization on the basis of specification of certain behavioral standards:

Table 7. Comparison of Normalization and Social Role Valorization on the basis of specification of certain behavioral standards

Criteria of Comparison 6 : Specification of Behavioural Standards

1.	Normalization	Principle of Normalization doesn't specify any behavior to be confirmed by persons with disabilities prior to their inclusion in society. i.e. Normalization doesn't require any pre-requisite for social inclusion of persons with disabilities. Bank Mikkelson, father of Normalization explains it in simplest terms as "Normalization means acceptance of the mentally retarded with their handicap offering them the same conditions as are offered to other citizens, inclusive of treatment, education and training needed to provide for optimal development". (Mikkelson, 1976, pp.27-28, Perrin & Nirje, 1985, pp-70)
2.	Social Role Valorization	SRV specifies various behavioral standards a person with Mental Retardation (Devalued Persons) must confirm. It prescribes a persons with disability must confirm certain behaviors so that they may pass undetected in society.

From the above table it is evident that 'Normalization' simply intended to promote 'acceptance of children with disabilities with their handicap and providing them all facilities available to a normal citizen. On contrary, SRV argues that since deviant behaviors lead to social devaluation, therefore, a person with disability must confirm certain behaviors so that perceivers could not detect their 'deviancy'. Not only in name but also in their formulations and interpretation 'Normalization Ideas' were quite simple. Misinterpretation of Normalization due to ease of term is entirely a different issue. Social Role Valorization on the other hand, is quite complex.

As Nirje (1985) mentions:

We wish to clearly indicate that Wolfensberger's Version of 'normalization' deviates in many significant ways from the original concept of the principle, and thus contrary to Wolfensberger's claim cannot be considered as reformulation, refinement, or operationalization of the principle. Rather his Version, with its focus on using normative means and on establishing normative behavior is built upon a fundamentally different value base and conception of people, with quite different implications for how we view and treat handicap people. Nirje, 1985, PP. 73)

This view of the leading person of Normalization Principle is of great importance in Normalization Vs. Social Role Valorization debate. Nirje never accepted Wolfensberger's definition as a reformulation of Normalization Principle. On the other hand, not only Normalization as defined by Wolfensberger, but also, Social Role Valorization, is considered as a 'refinement' or 'expansion' of the Principle of Normalization by Dr. Wolfensberger especially in his writings in 1980's. He argues that due to ease of the word Normalization, it has been misunderstood and never taken seriously by public or professionals. He writes strongly:

.....the choice of the term 'normalization' itself clearly been unfortunate, one major reason being that relatively few people have found it possible to separate the different meanings attached to it by various users of the term (Wolfensberger, 1983, pp. 234). Also in part because of its name, people have failed to take the principle of Normalization seriously as a tightly built, intellectually demanding and empirically well-anchored mega theory of human service, and to some degree, relationships. (Wolfensberger, 1983, pp. 234-235, 2011, 435-436).

The degree of Wolfensberger's disappointment with the term Normalization could be understood by his following statement

Ever since 1969, I have attempted to convert the early formulizations of Normalization by Bank Mikkelson (1969) and Nirje in to a scientific theory that is universal, parsimonious, and congruent with social and behavioral science. I have never been satisfied with the term 'Normalization' but have resisted a change in Name for two reasons. a) I was unable to think of a superior choice; alternatives suggested by others seemed to be no improvement and usually even inferior: (Wolfensnerger, 1983, pp. 235, 2011, 436). And b) by the early 1970s the term 'normalization' has acquired so much momentum that only a dramatically superior term seemed to warrant the attempt to change it. (Wolfensberger, 1983, pp. 235, 2011, pp. 436)

A dissatisfaction of Nirje and Wolfensberger with the definitions of Normalization given by each other is evident in the contemporary literature on Normalization and Social Role Valorization. Nirje perceived it a clear 'deviance' from the normalization as originally defined what Wolfensberger believed 'refinement'.

It's interesting to see some other critics of Normalization and Social Role Valorization. Culham & Nind (2003) views these two as different models of Normalization. In his definition of Normalization in 1972, Wolfensberger's over emphasis on 'confirming' certain behavior was widely criticized and it lead him to coin a new term instead of Normalization. As Culham & Nind, (2003) describes it:

The requirement to conform was a charge that Wolfensberger also ardently rebuked. In an attempt to allay confusion and controversy, he abandoned the term normalization and adopted instead the term "social role valorization" (SRV) (Wolfensberger, 1983). This, he argued, was intended to separate the controversial moral interpretations of normalization, and to clarify its true intentions, which were about using culturally valued means in "the creation, support, and defense of valued social roles for people who are at risk of social devaluation" (Culham & Nind, 2003, pp. 68).

As pointed out by Wolfensberger, he changed the name to eliminate the moral and controversial interpretation of principle of normalization which was attached to it due to ease of terms. Both the pioneers of Normalization: Nirje and Wolfensberger agree to each other at this point of misinterpretation of Principle of Normalization. Nirje was very sensitive to it and he tried to clarify meaning of normalization by addressing frequent misconceptions about it in his article 'Setting the Record Straight' with Burt Perrin (Perrin & Nirje, 1985).

He pointed out frequent misconceptions as:

1. Normalization means making people normal
2. Special services are inconsistent with the normalization principle
3. Normalization supports dumping people in to the community without support.
4. Normalization is an all or nothing concept
5. Normalization is appropriate only for the mildly retarded.
6. Normalization is a Scandinavian concept inapplicable elsewhere.
7. Normalization is a humanistic concept but idealized and impractical
8. Mentally Handicapped people are best off with their own kind, protected from the rigors of society. (Nirje, 1985)

No such literature were found where Wolfensberger tried to deal with such frequent misconceptions rather he was of interest to replace the word 'Normalization'. Here the question arises why Wolfensberger deviated (as pointed out by Nirje) from the originally defined 'Principle of Normalization'. Jackson (1994) traces the root of Wolfensberger's deviation from the original 'Normalization' to 'Social Role Valorization' in his early life in Germany. As he writes *"born and brought up in Nazi Germany Wolfensberger cannot have been unaffected by the knowledge of horrendous and dehumanizing treatment accorded by the Nazis to the members of all minorities groups or any group regarded as deviant. In the circumstances it is hardly surprising that Wolfensberger should feel highly hostile to any kind of authoritarian social system large or small and suspicious of the motives of anyone who worked in such a system. Wolfensberger's knowledge of what had happened in Nazi Germany and his intense shock at discovering the extant and degree of maltreatment and dehumanization of the residents in mental handicap hospitals of his adopted country must have contributed significantly to the subsequent shaping of his attitudes, values, and beliefs (Jackson, 1994, pp. 175)".* It cannot be denied that Wolfensberger's past experience of Nazi Germany have had an influence on his thought, attitude and beliefs due to which he laid over emphasis on 'devalued groups' which later became a central point of his formulation of 'Social Role Valorization'.

Conclusion

In conclusion, the cluster analysis of original writings from Nirje and Wolfensberger, and a critical analysis of summaries of ideas of Nirje and Wolfensberger suggested that both the ideologies, if not entirely different, differ from each other to a greater extent. Similar was observed after a careful closer look on available literature through various critics of Normalization and Social Role Valorization. Thus unified result of various analysis and interpretation of data favors Nirje's opinion that Wolfensberger was deviated from the original formulation of 'Normalization Principle' (Nirje, 1985) and these two guiding principles 'Normalization' and 'Social Role Valorization' differs from each other not totally but significantly in their totality.

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PSYCHOLOGICAL FACTORS ASSOCIATED WITH GENETIC TEST DECISIONMAKING
AMONG PARENTS OF CHILDREN WITH AUTISM SPECTRUM
DISORDERS IN TAIWAN

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and

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Abstract

Making decisions to undergo Autism Spectrum Disorders (ASD) genetic testing can be challenging. It is important to understand how the perceptions of affected individuals might influence testing decision-making. Although evidence has shown that psychological factors are important in predicting testing decisions, affect-type variables have been largely ignored among well-established health theories. Using questionnaires, we examined genetic testing decision-making among 444 parents of children with ASD in Taiwan. The largest predictor of intention was anxiety ($\beta = .46, p < .0001$) followed by fear/guilt ($\beta = .041, p < .0001$); Attitudes did not predict intention. Affect-type variables should be considered in genetic testing decision making theory, research, and practice.

Keywords: autism genetic testing, decision-making, anxiety, attitudes, intention

Introduction

As genetic technologies continue to advance in the post-genomics era, more genetic tests for Autism Spectrum Disorders (ASD) have been used to identify the causes of ASD, promote early detection and develop treatment plans. (Shen et al., 2010; Schaefer & Mendelsohn, 2013). The reasons might include the nature of this multifactorial disease (with a wide spectrum and different severity levels), the unclear clinical significance, the ambiguous interpretation of the test results, as well as a number of ethical, social, and legal questions pertaining to the test (Reiff et al., 2012; Marchant & Rober, 2009). Given these conditions, it is urgent to understand how affected individuals and their families view autism genetic testing and how their affective and cognitive perceptions might impact their decisions.

Albeit genetic tests are currently available for ASD-affected populations, making decisions to undergo autism genetic testing can be challenging for parents of children with ASD. It is important to understand how affected individuals and their families perceive autism genetic testing and how their perceptions might influence their decisions. Multiple lines of studies in various diseases have explored factors that might determine people's decisions associated with the uptake of genetic testing, such as perceived severity, perceived barriers and perceived benefits, attitudes and intention (Gooding et al., 2006). Although evidence has shown that psychological factors might be important in predicting genetic testing decisions, the affect-type variables have been largely neglected in the well-established health theories (Goodson, 2010; Gooding et al., 2006).

Although the reported prevalence of ASD in Taiwan (26.6 in every 10,000 person) was lower than the estimates from developed countries, a potential under-diagnosis and under-detection of ASD has made it an immediate public health concern (Sun et al., 2013; Lin et al., 2008). This phenomenon might be explained by the lack of awareness and recognition of ASD among clinicians, the lack of knowledge and acceptance of ASD in Taiwanese society, as well as the potential cultural influence in Taiwan (Sun et al., 2013). For instance, parents might feel ashamed or embarrassed by having a child with ASD, which can lead to the difficulty in acceptance of the diagnosis. A few epidemiologic studies focusing on

enhancing the detection rate of ASD among the Taiwanese population are being conducted. For example, one published study was designed to provide modified versions of ASD screening and diagnostic instruments (Wang et al., 2012). However, up till now, no recommended tests are available for patients and families with ASD in Taiwan. Since culture might have significant influence on Taiwanese families' perspectives toward genomic disorders and disabilities (such as eugenics and social stigma of having a child with birth defects), it is critical to examine the decision-making process with regard to ASD genetic testing before the provision of this test.

The purpose of this study is to address some gaps in the literature on the decisions to undergo autism genetic testing. This study explores the roles of 1) emotions, 2) attitudes, and 3) demographic variables in the decision-making process related to undergoing autism genetic testing among a sample of Taiwanese parents of children with ASD. Until now, no official recommendations are available for patients and families with ASD in Taiwan. Additionally, little is known about the factors determining the intentions to undergo autism genetic testing for parents of children with ASD in Taiwan.

Methods

Sampling and recruitment

This study is a secondary data analysis of an international research project initiated by faculty at Texas A&M University and the National Hsinchu University of Education. The research team recruited parents of children with ASD through special education teachers enrolled in special education classes in Hsinchu area and Taoyuan County. The survey as well as information sheet were all distributed to potential parents by the teachers. This research obtained IRB approval from Texas A&M University. More details can be retrieved from our previous published work. (Xu & Lu, 2015)

Measures

Based on current literature about factors determining the attitudes, beliefs and decision making regarding genetic testing, (Gooding et al., 2006; Lerman & Crovle, 1996; Skinner et al., 2003) we established an integrative model for this study among a sample of Taiwanese parents of children with ASD (Figure 1).

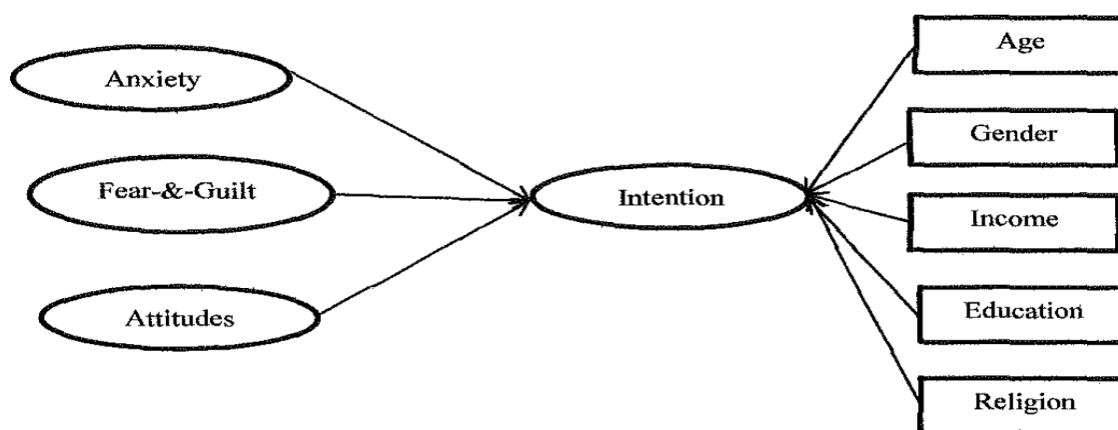


Figure 1 The integrative model of emotions, attitudes and intention associated with undergoing autism genetic testing.

Key constructs include four latent variables (anxiety, fear-&-guilt, attitudes, intention) while controlling for parents' age, gender, income, education, and religion. We also tested the five demographic factors (parents' age, gender, education, income and religious beliefs) as moderators. The variables in this model are from validated theories (Leventhal & Cameron, 2001; Ajen, 1991). The proposed model is designed to explain the emotional factors that facilitate or inhibit parents' decisions to undergo autism genetic testing. We added emotional factors as influences on the intention regarding autism genetic testing.

Data Analysis

We employed Structural Equation Modeling (SEM) analysis to assess whether the data supported the hypothesized model (Figure 1). Mplus 7.11 (Muthén & Muthén, 2007) was used to analyze the data due to its flexibility for handling different data structures and offering FIML (full information maximum likelihood) to handle missing data. The initial SEM step included a confirmatory factor analysis to establish a measurement model that determines latent model constructs. After establishing an adequate fit for the measurement model, we used the structural model to assess the underlying relationship between and among the proposed variables. To determine the fit between the hypothesized models and the observed data, we examined the following goodness-of-fit indexes: the chi-square, SRMR and RMSEA, based on the cutoff criteria-values of CFI more than 0.90, SRMR less than 0.05, and RMSEA less than 0.06.

Results

The final sample composed of 347 mothers and 97 fathers with autistic children in Taiwan. Parents' average age was 39.9 years (SD=5.4, range= 28-63). The average age of their spouses was 41.3 years (SD=5.6, range=26-63). The majority of the children involved (88%) in this research were boys diagnosed with ASD. The average age of these children is 9.5 (SD± 2.24). About 67.3% of the parents' education level was below college and 74.4% had an annual household income less than \$40k.

Structural model

After confirming through factor analysis that the measurement model exhibited appropriate fit, we performed SEM to verify the proposed structural relationships in this study. First, we sought to understand if the proposed model is adequate for explaining parents' intentions to undergo autism genetic testing. This model suggested that the proposed model offered an adequate explanation of the observed empirical data. Based on our results, we found that the more anxiety parents have, the more likely they are to pursue the test. However, with more fear or guilt, the parents were more likely to decline the test. Although a large percent of the parents had positive attitudes toward the test, attitudes did not appear to predict parents test intention.

Second, we sought to assess if the proposed model exhibits different patterns and values depending on participants' demographic characteristics. We also examined the structural variation of anxiety, fear & guilt, attitudes and intention using age, gender, education, income, and religion as moderators. In order to verify the structural invariant, we used MLR estimators to simultaneously assess both the unconstrained and unconstrained models. The structural paths were equally restricted across dichotomized groups, i.e. age \geq 35 years and $<$ 35 years, male and female, high and low income (\geq 40K, $<$ 40K), high education and low education (college graduates or below college), as well as with religious beliefs and without religious beliefs. However, none of the moderating effects of age, gender, education and income yielded Satorra-Bentler scaled chi-square value. The diagnosis from the output indicated no convergence due to exceeded interactions. These phenomena might be caused by the sparse of data for the dichotomized groups. Therefore, we were not able to infer whether age, gender, education, income, and religion interacted significantly with the latent variables.

Lastly, we were interested to know which variables in the proposed model are the best predictors of parents' intentions to undergo genetic testing for ASD. In the proposed model, the largest predictor of intention was anxiety ($\beta=.46$, $p<.0001$). In addition, fear and guilt were also predictors ($\beta=.041$, $p<.0001$). The use of the squared multiple correlation (R^2), the percentage of variance explained by one or more predictor variables on a dependent variable in SEM is an ongoing area of research and a trend in explaining social phenomena. According to the model results, about one tenth of variance in parents' test intention can be explained by anxiety, fear and guilt.

Discussion

The purpose of this study was to utilize structural equation modeling analyses to examine the associations between the emotions, attitudes and intentions, as well as test the overall "fit" of the proposed model in this study. Our findings extend existing literature on decision making about undergoing genetic testing for ASD in two ways.

First, we used an integrative model and SEM analyses to understand how emotions and attitudes might influence parents' intentions to undergo ASD genetic testing. Previous literature have used validated health theories for understanding the factors predicting intentions toward genetic testing, (Johnson et al., 2011); however, emotional factors have not been adequately addressed in these theoretical frameworks (Buhi et al., 2011). Notably, this study answers the call from the National Health Genomics Research Institute to expand beyond the existing conceptual models for exploring stronger predictors of genetic test decisions (Wade et al., 2012). We added affect-type variables, a largely overlooked factor in genetic testing decisions, as key constructs in our proposed model.

It is noteworthy that our findings demonstrated the negative influence of fear and guilt on parents' intentions to undergo ASD genetic testing. Past studies have shown that fear or guilt might potentially lead to a decline in genetic tests or refusal to participate in genetic research (Shumacker et al., 1996; Chen & Goodson, 2007). The particular kind of fear or social stigma in this study was associated with social, legal and ethical concerns related to testing. In addition, we specifically measured guilt caused by passing the ASD-associated genes onto the affected child and guilt caused by undergoing genetic testing. The specific kinds of fear and guilt we assessed, might be attributed to the culture and societal factors related to having a child with genetic disorders (Yuan & Bentler, 2010; McBride et al., 2008, Aatre & Day 2011). Similar to other Asian societies, the Taiwanese society might also demonstrate discriminatory attitudes toward people with disabilities, particularly, with mental illnesses (Eisenbruch et al., 2004; Yang et al., 2013).

A second way that our findings contribute to the existing literature for genetic testing is by having direct implications for public health genomics education and practice. The proposed model suggests that, educational interventions might be important based on the identified relationships among the factors. Although our sample did not allow us to generalize to the entire Taiwan population, our study provided support to the need of pre-test counseling as well as genomic or genetic education tailored to parents of children with ASD and parents with other genetic disorders among the general public in Taiwan.

There is a significant literature gap in the studies that have explored the associations between emotional factors and the genetic test decisions, as most studies have only focused mainly on the attitudes and intentions related to genetic testing. Our study helped to close the gap by providing theory-based evidence specifically addressing the emotions, attitudes and intentions among a sample of 444 parents of children with ASD in Taiwan. Furthermore, our study also confirmed anxiety, fear and guilt were associated with parents' test intentions; attitudes did not appear to be an influencing factor in the decision-making process. One of the most profound findings in this study is the proposed framework which better reflects empirical evidence and encourages re-integration of theories to explain decision-making processes related to genetic testing.

Limitations

Several limitations of this study deserve attention when interpreting the results from this study. First, this secondary analysis was from a cross-sectional study among children in public schools in Taiwan. Thus, the sample might not adequately represent responses from autistic children's parents from other settings, for instance, private schools or home schools. Another limitation was that this study assessed the influence of anxiety, fear and guilt and attitudes on intention. However, perceived recurrence risks and perceived severity levels might also have influence on parents' intentions to undergo genetic testing for ASD. Therefore, these factors might need to be examined further.

Implications

This study is useful in providing insights about parents' perspectives regarding ASD genetic testing prior to the full implementation of this test in Taiwan. It will also contribute to the development of better genetic services and research in Taiwan. Our findings also suggest that it is important to design more culturally appropriate educational programs for parents of children with ASD in Taiwan. Most participants postulated favorable attitudes toward ASD genetic testing and were likely to take their affected children for ASD genetic testing. However, compared to the situation in the US, where ASD genetic testing is offered as a routine health care service, there is a lack of valid and reliable ASD genetic testing procedures in Taiwan. Given that the parents of children with ASD were interested in ASD genetic testing, there is an immediate need to develop valid and reliable testing methods in Taiwan and provide culturally appropriate pre-test educational interventions for parents of children with ASD.

Future studies on decisions about undergoing genetic testing can benefit from addressing gaps in research pointed out by this study. More studies are needed to 1) examine emotions related to the intention to undergo genetic testing for ASD among the affected populations, 2) test theories that integrate emotions and other under-investigated factors such as perceived barriers, perceived benefits, and social environmental factors associated with the test intention; 3) evaluate moderation effects of demographic information. Future studies will also benefit from addressing methodological quality dimensions, such as the employment of more rigorous designs and the use of comparison groups. Addressing these dimensions is crucial for achieving a clearer understanding of parents' intention with regard to genetic testing for ASD for ASD-affected families and communities in a wider range of geographical locations.

Despite the limited generalizability, our findings also inform communications related to ASD genetic testing among health-care providers and parents of autistic children. For instance, in order to provide better genetic services for families affected with ASD, the multi-disciplinary medical team involved in the diagnostic process of ASD, such as pediatricians, medical geneticists and neurologists, should proactively consider the possible distress among parents of children with ASD. Since healthcare providers or health education specialists can play a critical role in shaping people's decision to undergo genetic testing, it is also important to educate them and enhance their knowledge so that they can help parents make more informed decisions regarding undergoing autism genetic testing. Furthermore, to manage parents' concerns resulting from fear, policymakers and legislators also need to consider genetic discrimination laws in Taiwan.

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INCLUSIVE EDUCATION IN AN INTERNATIONAL SCHOOL: A CASE STUDY FROM HONG KONG**Twiggy Chan****Mantak Yuen***The University of Hong Kong*

This case study provides an overview of current policy, practices and problems concerning inclusion in one international secondary school in Hong Kong. A total of 13 interviews were conducted with the school management team, teachers, students and parents, supplemented by 12 classroom observations and two 'student-shadowing' exercises. Findings suggest that the school has been reasonably successful in raising teachers' awareness of inclusive education principles, creating a whole-school culture of inclusiveness, and forming a partnership with parents. However, the commitment of individual teachers to implementation of inclusive practices in their own classrooms varies. Some teachers are not adaptive enough in their teaching approach, and have difficulties differentiating instruction and learning activities. Improvements are also needed in the way that teachers work with their education assistants (classroom aides). Implications for improvement are discussed.

Introduction

Studies have shown that a 'whole-school approach' is required for high quality inclusive education (Lipsky, 2003; UNESCO, 2002). Within this approach, teachers and others share a common understanding of the purposes of inclusive education, and work together to deliver a differentiated curriculum with flexible teaching and assessment accommodations. In order to achieve this, collaborative involvement of school administrators, mainstream teachers, resource teachers, education assistants, students and parents are essential. As Dyson and Millward (1997) point out, the whole-school approach to inclusion requires the establishment of a system that facilitates cooperation among all teachers in areas of shared expertise, participatory decision-making, and in-class support teaching.

A key element in the concept of inclusive education is the belief that, as far as possible, all students with special educational needs (SEN) should be enrolled in their local schools, and provided with support services and education suited to their abilities and needs (UNESCO, 2002; Westwood, 2013). This belief builds on the fundamental principles of respect for human diversity, and the right to equal educational opportunities for all — as promulgated in the *Salamanca Statement on Special Needs Education* (UNESCO, 1994).

To implement principles of equality and respect for human rights, all inclusive schools must place the needs of the students at the centre in their policies and practices (Department of Education and Early Childhood Development, 2007; UNESCO, 2002). In particular, there should be an emphasis on adapting instruction to accommodate significant individual differences among students. This process is usually referred to now as 'differentiation' (Lewis & Batts, 2005; Tomlinson & Imbeau, 2010; Tomlinson, 2014). Inclusive education requires the creation of a learning environment which enables students to benefit from a personalized approach.

In successful inclusive schools, the curriculum and teaching and learning processes are matched closely to the needs and talents of individual students (Forlin, 2007; Leadbeater, 2004; Miliband, 2004; Westwood, 2013). Tailoring the curriculum in this way provides students with a wider choice of study paths, and presents curriculum content that is

relevant and matched to students' interests and abilities (Hopkins, 2007). In terms of teaching methods, teachers vary their strategies for presentation and for student engagement during lessons (Lewis & Batts, 2005; Nordlund, 2003; Rock, Gregg, Ellis & Gable, 2008). Methods of assessment of learning may also need to be modified (Algozzine & Anderson, 2007). Underpinning these adaptations is a desire to create a supportive environment that respects and accommodates student diversity (Forlin, 2007).

Inclusive education in Hong Kong

In Hong Kong, the concept of inclusive education was first introduced in 1997, under a scheme titled *A Whole-school Approach to Integrated Education* (Education Bureau Hong Kong Special Administrative Region [HKSAR], 2008a). The original term was 'integration', not inclusion; but in line with international trends 'integration' gradually gave way to the broader concept of 'inclusion'.

In recent years the government has continued to demonstrate its commitment to developing inclusive education. For example, in the school year 2009-2010, 23 secondary schools and 282 primary schools in the public sector were provided with a Learning Support Grant to assist students with special needs within the whole-school approach (Education Bureau HKSAR, 2009; Education Bureau HKSAR, 2010). But even with these positive measures in place, inclusion is still very much a 'work in progress' in Hong Kong. To ensure the effective use of the extra funding and support from the government, it is crucial now to identify, and share among schools, the factors that contribute to successful inclusive practice.

Research on inclusive education in Hong Kong has so far focused mainly on mainstream primary schools, and has used quantitative data analysis (e.g., Dowson, 2007; Hong Kong Institute of Education [HKIE], 2003; Poon-McBrayer, 2004). For example, a case study of four 'integrated' schools showed that co-teaching, parent involvement, social interaction, and whole school approach are key factors contributing to success (HKIE, 2003). In addition, according to Dowson (2007), inclusion of students with special needs requires teachers to have professional knowledge for curriculum differentiation, flexible assessment methods, good classroom management, co-teaching skills, and willingness to collaborate with parents.

To provide more comprehensive insights into inclusive education there is a need also for *qualitative* research into the practices actually operating in schools and classrooms, and to identify specific challenges faced by secondary schools.

Purpose of the study

The purpose of the study was to identify factors contributing to the success of inclusion in a target school, to delineate the major challenges the school is facing, and to evaluate the effectiveness of the whole-school approach in implementing inclusive education principles. Findings from the study may help guide educators in other international secondary schools (and all other secondary schools in Hong Kong) when implementing inclusive education.

Method

The school

The school is one of more than twenty international schools operating in Hong Kong, and is well known for its whole-school approach to inclusive education. In one of their mission statements it is proclaimed that the school aims to *celebrate diversity in an inclusive and supportive international community*.

In the school, all curriculum subjects other than foreign languages are taught in English. Approximately 1700 students aged between 12 to 18 years attend, and come from over 45 different nationalities. Within this population, 200 students (12%) are registered as having mild to moderate levels of special educational need (SEN). These needs arise from intellectual disabilities (such as those due to Down syndrome or Autism Spectrum Disorders), and from physical disabilities such as cerebral palsy. Some other students have been assessed as having specific learning difficulties such as dyslexia. Another 85 students (5%) in the school are classified as gifted, and are regarded as also needing differentiated teaching.

Some SEN students are placed in regular classes and receive support in that setting. There are also some special groupings and classes specifically for SEN students. When determining placement of students with SEN, the school assesses five domains of proficiency: self-help skills, independent living skills (e.g. feeding, drinking, eating and

toileting), communication skills, social skills, and basic skills of reading, writing and listening. Students with SEN are placed at one of five levels in these domains, to reflect the amount of accommodation they need. Level 1 and 2 students are placed in mainstream classes with support. Level 3 and 4 students whose needs are more complex are educated in the Learning Support Centre (LSC). Students at level 5 have very severe needs and are referred to the special school which operates under the same organization to which the school belongs.

Three departments have been established to address student diversity, namely: the Learning Support Centre (LSC), the Individual Needs Department (IND) and the Gifted and Talented Department (G & T). LSC is dedicated to implementing individualized curriculum for SEN students who could not cope with mainstream—such as those with intellectual disability. The IND supports students whose needs can be accommodated in the mainstream classes—such as those with dyslexia or attention deficit disorder. They are provided with in-class support and with extra classes in basic literacy and numeracy. In the academic year 2009-2010, 28 students were supported by the LSC while 200 students were supported by the IND. The G&T department supports the top 5% of students in each academic or arts subject by coordinating subject acceleration, curriculum compacting, and by holding extra-curricular activities. The three departments provide a clear division of responsibilities, allowing coordinated support to subject teachers, students and parents.

Table 1. Policy and practices of inclusive education in the case school

- (a) Inclusion and personalised learning were the major targets of the school and there was a clear policy to support students with SEN.
- (b) A professional resource team was tasked to coordinate inclusive education in the school.
- (c) A wide choice of curriculum was available, such as BTEC and ASDAN, to allow every student to find the most suitable path of development at his/her own pace. IEPs were adopted for students with SEN.
- (d) A central student register shared among teachers provides detailed information and record of students.
- (e) EAs were heavily relied on to provide individual support to students with SEN.
- (f) The school attempted to create an inclusive school environment.
- (g) Parents were frequently involved in the education of their children.

In this study, key aspects of the whole-school approach to inclusive education were explored, including school policy, staff roles, staff training, curriculum, teaching approaches, assessment, and partnership with parents.

Interviews

In this qualitative approach, 13 semi-structured interviews were conducted (in English) with selected key stakeholders—school management team, resource teachers, education assistants (EAs), mainstream subject-specialist teachers (mainstream classroom only), students with and without SEN, and parents of students with SEN (Table 1).

Table 2. Stakeholders interviewed

	Stakeholder group	Number of interviewees	Number of interviews	Group/ Individual
(a)	School management	2	4	Individual
(b)	Education assistants	2	1	Group
(c)	Mainstream subject teachers who teach students with SEN	4 (teaching PE, History, Art, English)	4	Individual
(d)	Students with SEN	2 (Year 8 and 10)	2	Individual
(e)	Mainstream students	2 (Year 10)	1	Group
(f)	Parents of students with SEN	1	1	Individual

The interview questions were based on guidelines from *Catering for student differences: Indicators for inclusion*, issued by the Education Bureau in Hong Kong (Education Bureau HKSAR, 2008b). Four areas of concern are covered, namely: management and organisation, learning and teaching, student support and school ethos, and student performance. The guidelines themselves are an adapted version of an instrument from the Centre for Studies in Inclusive Education in the UK (Booth et al., 2000; CSIE, 2002). Appendix I shows the Mainstream Subject

Teacher Interview Guide. Details of the interview questions are available from the corresponding author of this paper.

Semi-structured interview technique was employed in order to obtain more information where necessary. Additional questions were asked to follow up or probe responses, or to clarify answers and comments.

Classroom Observation

Twelve classroom observations were conducted to obtain first-hand information about how teachers actually interact with students in the classroom, how differentiation is practised in class, how education assistants (paraprofessionals) are used, and how teachers interact with students with SEN. Each lesson observation lasted for approximately 35 minutes.

The students observed ranged in age from 13 to 19 years (Grades 7 to 13). Some observations were conducted in classes solely for students with SEN, and others in mainstream inclusive classes containing around thirty students, including one to three students with SEN.

In the classes containing only students with SEN (six to eight students), both academic and non-academic subjects were observed—English, Chinese, Mathematics, Drama, Music and Brain Gym. Students were assigned to the small group teaching for one academic year. In mainstream inclusive classes (thirty students) subjects observed were Art, English/Reading, Physical Education and History. Teachers responsible for these classes were informed in advance that the lessons would be observed.

An observation schedule designed by Rao and Cheng (2009) was adapted for recording purposes. Time sampling observation was conducted every five minutes. No video-taping was used due to privacy concerns. Notes were taken of key events that happened during the lesson, and follow-up discussion with the teacher occurred later. The targeted behaviour to be observed was related to teachers' choice of the instruction methods, organization, classroom activities and materials used. Students at work, teachers' encouragement, and teachers' adaptation for specific disabling conditions were also observed. Appendix II shows the Classroom Observation Form. Details of classroom observation follow-up questions and checklists are available from the corresponding author of this paper.

Student shadowing

The aim of the student shadowing was to observe interactions between the selected student and his/her peers, both inside the classroom and during recess time. This included how actively the student was involved in class, whether there was any bullying and how EAs helped the student with their learning.

Two male students with Asperger Syndrome (Grade 7 and 8) were shadowed in class for a whole school day from 8 a.m. to 3 p.m., covering 5 classroom periods. These mainstreamed students were nominated by the school. Field notes were taken throughout the shadowing period. The two students were subsequently interviewed with questions such as *Do you have learning goals that you are working on?* and *Have your teachers taught you useful ways of tackling assignments and class work?*

Data analysis and interpretation

For understanding the inclusion policy and practices of the school, information collected from interviews was analysed and categorized. This process is discussed in detail below under *Findings*.

Information supplied by different interviewees was counter-checked and clarification was sought from the relevant staff member where necessary. School documents were also reviewed to help understand school policy, supporting staff roles, funding, curriculum, and partnerships with parents. Primary information collected from classroom observation and student shadowing was used to supplement other data on learning and teaching and social inclusion.

The collated information assisted with a critical evaluation of the effectiveness of the whole-school approach, with an aim of identifying key factors influencing successful inclusion, and the challenges still faced by the school.

Validity of data

The case school sets out the major policies and practices of inclusion on its website and in relevant policy documents. All these sources were examined to counter-check information collected from interviews, classroom observation and student shadowing. A total of 13 semi-structured interviews with selected stakeholders were

conducted, with 12 classroom observation, and 2 student shadowing exercises. These sources of data allowed all information to be checked and confirmed from different perspectives. Supplementary information obtained through discussions with all participants also increased the credibility of the findings.

Findings

This section first describes the general policies and practices evident in the school. Factors influencing the extent to which policies were actually implemented, and the challenges still ahead are then discussed.

Inclusion policy and supporting structure

It was noted that the school has a very clear policy of inclusion in its vision statement—namely to *celebrate diversity in an inclusive and supportive international community*. The school's SEN policy was readily available on its website for access by parents, students and members of the public. The policy reflected international best practice, as set out for example in the *Code of Practice for Special Educational Needs* in Britain (Department for Education and Skills [UK], 2001). The main thrust is to meet the needs of most students with SEN in mainstream classes, but also to provide more intensive support for students where necessary. This policy paved the way for whole-school collaboration, supported by a structured and dedicated team in the school.

In order to facilitate information sharing and collaboration among teachers of various school subjects, the school maintains a central computer register of information about all students with SEN (student's strengths, weaknesses and special needs). In most cases, strategies for support are also suggested; and where relevant the student's Individual Education Plan (IEP) is shown. Using online access, teachers can update data, such as concerns over a student's emotions or behaviour, or any recent improvements in the student's work or social interaction with classmates. This process ensures consistency in the assistance provided for a student across different curriculum subjects.

Parent involvement

As suggested by Forlin (2007), partnership with parents is required to support inclusion in school. An effective whole-school approach must involve parents, who play a significant role in assisting teachers to meet the needs of the students by sharing important information and by helping students at home. For instance, using suggestions from a parent, the school successfully included a Grade 13 student with Down syndrome into a mainstream class by modifying his programme.

The school policy states that all parents of students with SEN should be treated as valued partners. It was noted that parents were invited to attend school meetings, particularly for discussing IEPs and evaluating their child's progress. Parents also receive emails from teachers on the performance of their children. Interviews with parents indicated that this involvement has enabled the school to provide more personalised education suited the needs of students.

Differentiated curricula

In some cases, students with special needs did not require any modification to the mainstream curriculum in any subject, but benefited instead from extra in-class support. Peer assistance is very helpful in this respect. In addition, some students simply attended a part-time support class for basic literacy, numeracy and time management.

Classroom observation indicated that differentiated curriculum and support could take various forms. The most common was modification to mainstream content (reduction or simplification). In one example, a student with poor literacy skills was provided with simpler tasks and different learning materials. Classroom observations (and the shadowing of two students) also revealed that the availability of differentiated curricula to suit SEN students plays a very important part in achieving inclusive education in the school. Every SEN student was provided with an Individual Education Plan (IEP), based on learning needs, interests and strengths. IEPs are reviewed annually in consultation with student and parents.

In addition to modifying mainstream curriculum, the school also offers 'alternative routes' to learning that put less emphasis on academic skills. Courses accredited by ASDAN (Award Scheme Development and Accreditation Network) with a focus on life skills, were offered to students where appropriate. Students in Grades 12 and 13 were offered the option of an 'advance diploma', or a more basic award. For students with more severe disabilities receiving direct support from LSC, a 'vocational foundation diploma' is available.

Personalised assessment

Differentiation in assessment strategies was practised in the school. For internal formative assessments, students were often given a choice of assignments that they felt would allow them to demonstrate their knowledge in a certain subject. For instance, a student with poor writing skills was allowed to use oral and filmed presentation to demonstrate what he had learnt from field work. This approach avoided students being excluded from the mainstream curriculum simply because of deficiencies in literacy skills.

While the forms of assessment are varied, the criteria for assessment are standardised as far as possible, to reflect all students' abilities at true levels. Students with SEN are often assigned tailor-made tasks to test their achievements. For instance, in the Literacy Target Group (an English class designed for students with learning difficulties) alternative assessments such as creating a PowerPoint presentation, designing an advertisement, or drawing a Mind Map were used to supplement general assessment. These assessments were intended to reveal more about each student's abilities, and to give students confidence in their own potential to succeed.

When standard examinations were necessary, it was noted that students with SEN were given 25% extra time to complete tests. Some were allowed to use laptops, and others had access to someone who read aloud the test questions.

Table 3. Lesson delivery types observed during lessons

<i>Lesson</i>	<i>Lesson delivery types</i>
English language	Oral presentation by teacher
Physical education	Oral presentation by teacher, plus practical tasks
Art	Oral presentation by teacher, plus drawing
Mathematics	Oral presentation by teacher and project-based learning
Chinese language	Oral presentation by teacher; audio-visual materials; rote copying; discussion
English language	Use of library and discussions
Music	Oral presentation by teacher; audio visual material; drawing
Brain gym	Oral presentation by teacher; discussion; practical activities
Art	Oral presentation by teacher; drawing
Physical education	Oral presentation by teacher; practical tasks
ASDAN	Oral presentation by teacher; discussion
History	Oral presentation by teacher; project learning

In addition to employing differentiation in assessment, the school also personalised student report-cards to some extent, by describing in detail students' learning outcomes and their personal strengths. Learning outcomes were recorded using conventional grades from A to E, but personal achievements had detailed comments and targets for improvement. A mainstream teacher remarked: *...we try to give as full a picture as we can*. This form of assessment seems to strike a good balance between recognising genuine efforts of students with SEN, and ensuring overall fairness in assessment.

Learning and teaching

The key to differentiation is the use of a wide range of methods, activities, resources, and lesson organisation (Spillman, 1991; Tomlinson & Imbeau, 2010; Westwood, 2013). When compared with differentiation in curriculum and assessment, it was observed that differentiation in teaching was less well developed in the school. This was also a finding in an independent assessment of the school by the Council of International Schools. Several overseas and local studies have also concluded that teachers do not find it easy to adapt their style of teaching in mixed-ability and inclusive classrooms (e.g., Chan, Chang, Westwood & Yuen, 2002; Janney & Snell, 2004; Vogt & Rogalla, 2009; Yuen, Westwood & Wong, 2005).

Table 2 provides a summary of the lesson delivery types observed during lessons. It was apparent that oral presentation by teacher remained the predominant method used in 11 out of 12 lessons observed. Oral presentations tended not to be adapted at all to individual differences among students; and this passive 'transmissionist'

communication style was difficult for students with SEN. These students normally need to be much more actively involved in the learning process. In most cases, oral presentation was supplemented by some form of classroom activity, including drawing, practical tasks, discussion, or project learning. But only in a few classes were activities differentiated according to ability of the students, or any use made of ability grouping. Overall, very little effective differentiation in teaching was observed. For example, in an English reading class all students were required to answer the same set of questions.

Mainstream teachers tended to rely on education assistants (EAs) in the room to interpret lesson content, and to explain instructions to students with SEN. The teachers appeared not to have differentiated in advance the way in which skills, knowledge and concepts were to be presented. Nor were they actively responsive to students' difficulties. An EA commented that responding at an individual level is very important to students with SEN:

Instead of just saying Do this! you need to ask the student: What do you need to do now? How are you going to do that? What is the best way? Then students will think for themselves, and will realise that they are able to do all that.

One case of collaborative teaching was observed. The Learning Support Director commended the effectiveness of this type of partnership, where the SEN specialist and the English Teacher can co-plan, co-deliver, and co-assess. In Grades 7 and 8, students with weak English skills were withdrawn from the mainstream English classes to form Literacy Target Groups (around 24 to 30 students), co-taught by an English mainstream teacher and a support teacher. An education assistant was also present. This arrangement was highly valued by the mainstream English teacher, as she had support in carrying out differentiation and responding to individual differences. She remarked:

We run many lessons under 'guided learning'. We try to do that as much as possible because we have three adults in the classroom (or two at least). For a mainstream teacher, the job is then producing resources that can be differentiated. So you may set a common task, but you may have three different versions of it. Or you can set different outcomes for each group based on their ability, and ask them to choose which target they work towards.

Support from education assistants

It was noted that the school relied heavily on the support of dedicated education assistants (EAs) to achieve inclusion in mainstream classrooms. Their roles focus on support for individual students, including ensuring their safety, giving encouragement, providing clarification of instructions, and interpreting course content. EAs also encourage social interaction between LSC students and others; and their importance was widely recognized by the mainstream teachers—a finding typical also in overseas studies (e.g., Blatchford, Bassett, Brown, & Webster, 2009).

While international research has suggested that EAs contribute much to inclusion, it is also evident that their roles must be clearly defined in order to facilitate their efficient cooperation with teachers (Kerry, 2005; Rose & Forlin, 2010). Equally important, guidelines must be provided to ensure that mainstream teachers understand how best to cooperate with EAs and use their services effectively (Ainscow, 2000). In this school, EAs and mainstream teachers considered that sometimes there is lack of mutual communication. The EA pointed out that some teachers did not feel completely comfortable working with them. They suggested that guidance was required for mainstream teachers in utilising and relating better to EAs.

EAs and mainstream teachers interviewed here considered that for inclusion to work successfully, teachers and EAs should *co-plan lessons*. As suggested by the Learning Director,

...the SEN specialist and the English Teacher co-plan, co-deliver, co-assess, co-report, so that is a really good model of partnership teaching.

A main obstacle seemed to be that mainstream teachers had difficulty finding mutually convenient times to discuss lessons in advance with EAs, and that EAs considered that some mainstream teachers were not really prepared to do so. Since the training for EAs do not include lesson planning, the idea of *co-planning lessons* may better be replaced simply by discussion between teachers and EAs before lesson. EAs should be able to access to the lesson plans before class for better understanding of the content and expectation of each lesson.

Resource constraints had also limited the effectiveness of EAs in this school. Four full-time EAs and four part-time EAs worked exclusively to provide in-class support for 28 students with special support needs. This ratio of staff to students, while sounding generous, actually means that not all LSC students can have support from an EA for every

lesson. This lack of support at times created a problem in continuity, some students finding they were unable to cope. In addition, part-time EAs were usually not present for the full curriculum, and therefore had to spend extra time familiarising themselves with missed lesson content.

Awareness, commitment and knowledge of mainstream teachers

In this research, involvement of mainstream teachers in inclusive education can be perceived from three dimensions—namely awareness, commitment and knowledge. Findings revealed that the school has achieved success in raising awareness of all staff on the principles of inclusion; but the commitment of individual teaching staff varies. The school had attached importance to helping every staff member embrace the idea of inclusive education. For instance, every new staff member is required to attend an introductory talk about the concept of ‘access’ and support. The teachers were also informed of the various types of students they were likely to encounter, with additional details on the computer register. Some basic advice was also available on how to differentiate curriculum and teaching, and how to utilise EAs in class. This had created an ‘inclusive culture’ in the school, and had raised teachers’ awareness. All teachers interviewed were therefore fully aware of the school’s mission to provide inclusive education to all students. However, despite the above measures, interviews with teachers revealed that while most appreciated the goal of inclusion, not all of them were committed to its full implementation in their own classrooms. A teacher expressed her difficulties as lack of time for such necessities as differentiating activities and resources:

Most students can just read the handout that I photocopy from a book. If I need to differentiate it, then I need to rewrite the whole passage. It is not practical to do this all the time, because it will take you a long time to rewrite for just one student. Time is the limitation! I am not saying it's not worthybut with many lessons to prepare you will just automatically think about the majority students. If you don't have time, you just can't do it.

Lack of commitment was perhaps related to lack of skills needed to carry out efficient differentiation of teaching methods. Classroom observations, and the student shadowing exercise, suggested that teachers’ practical knowledge for differentiation was generally insufficient. Some teachers remarked that they found it difficult to adapt their teaching styles to address the different needs of students. This suggests that there is room for improvement in the preparation of mainstream teachers so that they possess the necessary practical skills to facilitate inclusion in their subject areas. The school is aware of this problem; and it was noted that, further to the initial orientation session for teachers, a range of other training opportunities are being provided by the Access Faculty (e.g., skills sharing and demonstration of teaching techniques).

Teachers who are more heavily involved in teaching SEN students are provided with additional professional development opportunities, including chances to attend professional development activities outside school. The evidence suggests that more teachers need to be encouraged to participate in training with a focus on adaptive teaching techniques. When teachers have the pedagogical knowledge and skills to teach effectively in an inclusive environment, their level of genuine commitment to inclusive principles is likely to increase. Awareness of the concept of inclusion is a necessary *but insufficient* condition to ensure effective classroom practice (Tarra, Tsokovab & Takkunen, 2012).

Practical implications for inclusive education in Hong Kong

The Education Bureau in Hong Kong promotes a whole-school approach to inclusive education in local primary and secondary schools. The findings from this study support a view that the whole-school approach should indeed be adopted as the means of achieving the underlying goal of inclusion. However, it is clear that implementing an inclusive approach at classroom level is not easy, given the typical academic demands of secondary school curricula, and teachers’ current level of skills in adaptive teaching and in working with paraprofessionals.

Currently this school relies fairly heavily on the services of EAs for supporting students with special needs in the classroom. According to the Education Bureau, EAs are expected to offer professional support to teachers in their lesson preparation, classroom duties and class follow-up and assessment work (Education Bureau HKSAR, 2008c). Their officially specified duties include helping design learning activities and materials, supporting students in classroom learning activities, providing individual support for homework, training students with SEN in the use of assistive aids, helping students with writing problems to take notes, collecting data and records of student progress and liaising with parents (Education Bureau HKSAR, 2008c). At the moment, in this school some EAs report that they are not actively involved in lesson planning or designing learning activities, rather they are simply

required by the teacher to help out spontaneously in a general way during a lesson. It is likely that the services of EAs could be maximised if all teachers receive detailed guidance in how to utilize this human resource most effectively. Similarly, education assistants would benefit from more in-service training in the preparation of differentiated teaching materials to supplement the central theme of a lesson. It is essential that reference also be made in the school policy to the most efficient and productive ways of using paraprofessional support—particularly in co-planning and co-teaching of lessons.

Similarly, all subject specialist teachers in secondary schools need to receive additional in-service training in how to adapt their subject matter for different ability levels. This important aspect of adaptive teaching has not been a traditional part of most teachers' initial preparation; however, it represents essential knowledge for planning inclusive lessons. One way of raising the profile of adapting instruction is to provide opportunities for teachers and EAs to engage in school-based sessions in which practical ideas for differentiation are shared among colleagues.

The effective implementation of the whole school approach requires teachers and other personnel to confer closely on a range of matters pertinent to students' needs. For this reason, adequate time must be made available for professional liaison to occur.

Conclusion

Inclusive education respects human diversity and equal opportunities. To achieve an inclusive approach, differentiation of curriculum content, teaching methods, and assessment have to be practised. In reality, this is difficult and challenging, and needs the support of a whole-school approach, implemented by a committed and knowledgeable teaching and support team.

This case study provided a window on the positive and less positive aspects of inclusive education practices in one international school. Future research should investigate policies, practices and problems associated with inclusive education in other local secondary schools and colleges in Hong Kong. If a lack of pedagogical skills for personalized teaching appears to be the major obstacle in these schools, there are clear implications for pre- and in-service teacher education courses. These courses need to move beyond the rhetoric associated with the *idea* of inclusion, and deal actively with the '*how to*' aspects.

Practical implications stemming from this study include: the need to increase teachers' commitment by putting inclusive education at the top of the agenda for staff training; to enhance communication among teachers, paraprofessionals and parents; and to equip teachers with more diversified teaching strategies. Teachers should also engage EAs more fully in co-planning and co-teaching lessons. The case school is well on the way to implementing inclusive education, but much more still needs to be done.

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Appendix I Mainstream Subject Teacher Interview Guide

1. Is there a channel for you to go through when you need extra support and/or materials for your class? How do you go about getting them? Do you have a mentor to share ideas and challenges?
2. How often are you required to attend staff development? Are any of your development activities related to students with diverse learning needs? Does the school provide you with extra staff development opportunities, or are you responsible for locating them on your own? Do you think the school's staff development is useful? Does it usually have follow up?
3. Since starting inclusion, have you made any changes to your classroom to cater for students with diverse learning needs? Do you feel the school gives you enough resources to make the room accessible for SEN students?
4. Do you think your curriculum is suitable for all students? How does IB help to make lessons accessible to all students? How do you use IB along with differentiating instruction in your class, especially students with SEN and students who are gifted?
5. Do you have different rubrics for SEN students and gifted students? How frequently are the students assessed and by whom? How do you make sure all parents and students think is fair? What's assessed on a report card? Is it a letter grade or an effort grade? Are students ever retained in a grade when learning goals are not met?
6. Were you given any guidelines for the layout of your classroom? Are these guidelines from the school or from EDB?
7. How is ICT use in your teaching? What kind of adaptive curriculum materials do you have access to? Do you find it difficult to locate resources that you need in Hong Kong? Where do you get your resources in Hong Kong?
8. Do you have a learning assistant? If so, are they assigned because of certain students or is it because of numbers? Do the learning assistants participate in planning of instruction?
9. What kind of strategies do you teach the students how to learn? How do they check for their own understanding? Are library skills taught to them, in high school or elementary? How do you teach students how to take notes in class? Who would the students approach when they need extra help?
10. What kind of discipline policy is in place? Are there special accommodations to these policies for SEN students?
11. Does the school have an anti-bullying policy? How do you ensure the SEN students are not being bullied? Will they voice their concerns directly to you or do they usually approach their own parents first?
12. Please comment on the peer relationships of your students, with and without disabilities, inside your classroom.

Appendix II Classroom Observation Form**CLASSROOM OBSERVATION FORM**

NAME OF SCHOOL _____ CLASS _____ NAME OF TEACHER _____

TOTAL NUMBER OF STUDENTS: _____ NUMBER FROM IDENTIFIED GROUP: _____

ADDITIONAL ADULTS IN ROOM () TIME IN ROOM () MINS

ROLE : _____ NUMBER OF CHILDREN SERVED ()

Accommodation/Accessibility:

Diaplays: Central theme/ student's work/ learning strategies

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. What is the teacher doing?																		
2. What kind of instruction organizational is the teacher using?																		
Whole class teaching																		
Large group teaching/ learning (6-8)																		
Small group teaching/ learning (2-3)																		
Independent																		
Collabrative teaching																		
Multi-level instruction																		
3. What kind of activities is teacher using?																		
Discussion																		
Oral presentation																		
Writing																		
Drawing																		
Problem solving																		
Use of library																		
Audio visual materials																		
Practical tasks																		
Mechanical copying																		
Project learning																		
3. What materials is the teacher using?																		
Textbook																		
Blackboard																		
Audio visual materials																		
Large print/Braille																		
Active write board																		
Others																		
5. What students use to record their work?																		
Writing																		
Digital media																		
Drawings																		
Photographs																		
Tapes																		
6. Does teacher encourage students to participate in the lesson?																		
Checks students' understanding																		
Requests student's reponse																		
Teacher acknowledges any (correct and wrong) response																		
Elaborates task-related comment																		
Praise																		
Criticism																		
7. Does teacher engage adaptations for specific disabling conditions?																		
Curriculum modification																		
Instructional adaptation																		
Material adaptation																		

SPECIAL EDUCATION IN SAUDI ARABIA: A SYNTHESIS OF LITERATURE WRITTEN IN ENGLISH

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Special education in Saudi Arabia was formally established in 1962. The earliest cited literature on special education written in English was a 1970 government report. This article presents results from the first synthesis of internationally published Saudi special education literature over a 44-year period. This synthesis yielded information about the types of publication, topics of interest, populations of interest, types of research, trends over time, and research gaps. One hundred and sixteen citations were uncovered, 45.7% of which were published in the last 5 years. The themes that emerged on models of disability, policy-research incubation period, and stages in research, indicated a developmental rather than a cultural growth perspective, implying the global nature of special education research. Insights to inform countries with a developing special education system include the need to balance research from both medical and social perspectives, and to increase intervention-based research to inform instructional practices.

Introduction

The Kingdom of Saudi Arabia (KSA) is the largest country in the Middle East with a population of 29,195,895 million in 2010 (Central Department of Statistics & Information, 2014). A nation-wide door-to-door census in Saudi indicated that approximately 135,000 or nearly 0.8% of the total population has a disability (Al-Jadid, 2013).

Education in KSA is founded on the traditional Islamic religious curriculum with input from curricula in the U.S. or the U.K. (Alquraini, 2011). Special education was formally established in 1962 with the creation of the Department of Special Learning in the education ministry. In line with the general education system, special education in KSA is also segregated by gender.

In Islam, persons with disabilities have rights to enjoy, and have duties to perform as any member of the community, and Islam supports the notion of social responsibility (Al-Aoufi, Al-Zyoud, & Shahminan, 2012). These religious principles support the global shift towards inclusive education as stated in the Salamanca Statement (UNESCO, 1994), and the Dakar Framework (UNESCO, 2000). In line with these global changes, in 2001, the Regulations of Special Education Programs and Institutes (RSEPI), modeled after the U.S. policies, were formulated. The RSEPI outlined the rights and regulations for students with disabilities requiring special education [refer to Al-Jadid (2013) and Alquraini (2011) for more information]. Internationally, KSA is classified by Anastasiou and Keller (2011) as under the 'limited special education in a developing education system' typology, along with many other Arab states.

The earliest cited literature on special education in KSA written in English and sourced from established databases was a 1970 Arabic-English bilingual report (Ministry of Education Riyadh, 1970). This investigation would be the first review of literature on special education in KSA from established databases spanning 44 years. Literature review is prized by professionals as it serves a strategic function to manage information overload and to facilitate access to the extant knowledge base (Cooper & Hedges, 1994). Even though a repository of special education reviews exists, however there are gaps in the review of the literature specific to particular countries. A cursory search did reveal one such study of the Republic of Ireland (Rose, Shevlin, Winter, & O'Raw, 2010). As information published in professional journals is known to influence policy, practice and preparation of future professionals (Mastriopieri et al., 2009), countries such as KSA will benefit from such a review.

Research objectives

The objectives were to: (a) identify the type and quantity of the publications, (b) examine the topics of interest, (c) examine the populations of interest, (d) highlight the types of research, (e) investigate trends over time, and (f) shed light on emerging themes, issues and gaps.

Method

Methods for conducting systematic reviews as suggested by the Evidence for Policy and Practice Information Center (2010) were referenced. A two-stage review was conducted.

Search Strategy

In April 2014, a keyword search was conducted in the Web of Science, SCOPUS and EBSCOHost (Academic Search Premier, Academic Search Complete, Education Research Complete, ERIC, PsycARTICLES, Psychology and behavioral Sciences Collection, PsycINFO, SocINDEX with Full Text). The keywords were: (*special education* OR *inclusive education* OR *disabilities* OR *special needs* OR *inclusion*) AND *Saudi Arabia*. An expanded search was conducted: (*ADHD* OR *autism* OR *gifted* OR *speech and language disorder* OR *emotional and behavioral disorder* OR *learning disabilities* OR *dyslexia* OR *blindness* OR *deafness*) AND *Saudi Arabia*. The title and abstracts uncovered were screened based on a predetermined inclusion/exclusion criteria. Articles, standard reports, conference proceedings, and dissertation abstracts were included, but introductions to special issues, editorials, news, and book reviews were excluded. Articles that focused primarily on the medical aspect of disability were discounted. However, prevalence and epidemiological studies involving children were included as these have a direct impact on assessment and educational program planning. Publications exclusive to the adult population or babies were excluded. Once searches were carried out, electronic records of the publications were imported into the EndNote reference management software.

Coding Procedures

First stage: The coding decisions were documented in a shared Microsoft Excel data sheet. The coding categories, developed on the basis of the aforementioned research questions, were reviewed and discussed by the authors to reach a final decision. A mix of open and closed coding schemes with explicit decision rules was employed.

Types of publication. The types of publication were categorized into five reference types: journal, proceeding, chapter in book, dissertation abstract, and government report.

Topics of interest. Each publication was coded for a primary topic and, where applicable, a secondary descriptor was added. Subsequently, the topics of interest were further collapsed and recoded as areas of interest for the cross-analyses and trends over time analyses.

Populations of interest. The population of interest was coded according to the disability focus of the publication. Subsequently, the populations of interest were further collapsed and recoded as special needs categories for the cross-analyses and the trends over time analyses.

Types of research. An empirical publication was coded as experimental group, single subject, correlational, descriptive, survey, or qualitative designs (Odom et al., 2005; Mastropieri et al., 2009). Additional codes were scale validation and program evaluation. Subsequently, the empirical publications were further collapsed and recoded as either intervention or non-intervention studies for the cross-analyses and the trends over time analyses. For an intervention study, an independent variable had to be manipulated to assess its effect on at least one measurable outcome (McFarland, Williams, & Miciak, 2013). A non-empirical publication was coded as either a review or a report.

Inter-coder reliability. Inter-coder reliabilities, calculated using Cohen's kappa (κ) for topics of interest, populations of interest, and types of research for all publications were high, ranging from 0.91 to 0.97. A kappa above 0.81 is considered almost perfect (Landis & Koch, 1977).

Second stage: The aforementioned coding procedures sorted out the literature into meaningful categories to support this stage of analysis, which was to extract recurring themes within the published documents. Literature maps, commonly deployed as a means of identifying related themes and emergent issues from texts (Creswell, 2008) were created. Rose et al. (2010) in their review of literature had formalized this mapping process into a four-stage approach that brought literature together in an ordered manner, built around keywords, issues and themes. Their approach to analysis was suitably adapted for this review.

Results

Types and Quantity of Publication

The search yielded a corpus of 116 publications, which are marked with an asterisk and an identification number in superscript (^{*}) in the reference section. This yield cannot be considered substantial when viewed from a 44-year span, which supported the conclusion made by Al-Jadid (2013) and Alquraini (2011) on the paucity of research in disability and special education in KSA. Eighty-three (71.6%) of the papers captured were published in peer-reviewed journals, and five (4.3%) in conference proceedings. Twenty-one (18.1%) dissertation abstracts indexed in EBSCOHost were uncovered, evidence of special education research at international postgraduate level. Out of this batch of dissertation abstracts, only two papers were published in peer-reviewed journals, viz. Alnahdi (2013) on transition services and Alquraini (2012) on inclusive education. Three chapters in books (2.6%) were uncovered, suggesting under-representation of literature at the international level. Finally, four (3.4%) government reports were sourced from the databases.

Topics of Interest

The three most common topics of interest were epidemiology ($n = 19$), prevalence ($n = 19$), and special education in general ($n = 9$). There was also keen interest in teachers' attitude ($n = 10$), inclusive education ($n = 8$), gifted education and enrichment programs ($n = 8$), ICT/assistive technology ($n = 6$), and, scale adaptation and validation ($n = 5$). Refer to Table 1.

Table 1. Publications by topics of interest (1-2 descriptors per article)

Topic	Identification number (¹)		
Accessibility guidelines	102	Ict/at	34,68,89,102,103,104
Analytical and creative skills	22,30	Inclusive education	10,16,25,47,48,60,70,84
Anxiety in gifted students	33	Reading program	61
Arabic sign language	34,96,107	Math/science enrichment	29
Art-based intervention	7	Medical & educational center	63
Assessment	87	Motor development	24
Attitudes towards disability	19	Needs assessment	91
Behavioral characteristics	83	Neuro-developmental	40
Braille	97	Oral language skills	61
Characteristics	18,50,81	Parental involvement	75
Clinical correlates	50	Parental issues	15,88
Clinical literature on autism	80	Parents' belief	44
Cognitive and behavioral skills	7	Parents' education	14
Co-morbidity	18,42	Phonological processing	111
Comparative study	110	Postsecondary outcomes	23
Contemporary issues	28	Prevalence	1,4,6,8,9,12,13,20,43,49,58,71,72,76,85,86,93,115,116
Cross-cultural comparison	51,81, 87	Research ethics	60
Cultural/ religious contexts	32,44	Scale construction/ validation	54,67,78,83,105
Developmental profile	24,40,45	Science achievement	22
Disability trend	26,27	Screening	54,78

Early intervention	92	Sexual behavior	82
Effect of special education program	35	Sociodemographic profile	56,65,85
Employability	35	Special education	46,89,94,95,98,99,103,112,113
Enrichment model/program	29,30,31,64	Special education teacher	66,69
Epidemiology	2,3,17,21,36,52,53,55,62,71,73,74,90,100,101,106,108,109,114	Special educator preparation	79,104
Evaluation of program	84	Student self-concept	25
Functional behavior assessment	11	Teacher competency	77
Gender and exceptionality	57	Teachers' attitude	5,10,11,16,37,39,47,48,51,70
Gifted education	28,32,64,65	Transition services	38,39
Health disorders	76	Transition to work	23
Hearing aid	41	Vision-related quality of life	67
Hearing loss	86		

Populations of Interest

The most common was the all/various type of disability category ($n = 28$). Others include hearing impairment [HI] ($n = 16$), autism spectrum disorder [ASD] ($n = 14$), gifted and talented ($n = 13$), intellectual disability ($n = 11$), visual impairment ($n = 10$), attention deficit/hyperactivity disorder [ADHD] ($n = 7$), and learning disabilities [LD] ($n = 3$). Refer to Table 2.

Table 2. Publications by (a) populations of interest and by (b) types of research

Population	Identification number ^(a)
All/ various disability categories	2,15,21,19,25,26,27,35,37,46,51,55,58,60,66,70,84,92,93,94,95,98,102,103,10
Fragile-x syndrome	45

	6,112,113		
Adhd	6,7,18,42,43,85,78,	Gifted and talented	20,22,28,29,30,31,32,33, 64,65,69,83,91
Asd	14,16,24,44,50,56,57,68,8 0,81,82,101,105,110	Hearing impairment	3,4,8,23,34,36,41,49,62,7 1,74,96,107,114,115,116
Behavioral disorder	54	Intellectual disability: (mild to severe)	11,38,39,47,48,72,75,76, 77,87,88,
Cerebral palsy	12,52,100	Learning disabilities	10,61,79
Neuro-developmental disorder	40	Neurological disorder	9
Down's syndrome	63,86	Typically developing students	111
Emotional behavioral problems	1,13	Visual impairment	17,23,53,67,73,90,97, 104,108,109,
Epilepsy	5		
Empirical research	Identification number (ⁿ)	Non-empirical research	Identification number (ⁿ)
Descriptive	1,2,3,4,6,8,9,12,13,15,17,1 8,20,21,24,34,36,40,42,43, 45,49,50,52,53,55,56,57,5 8,62,63,71,72,73,74,76,81, 85,86,87,90,93,96,98,106, 108,109,110,111,114,115, 116	Review	26,27,28,31,32,34,46,68, 80,101,102
Survey	5,10,11,14,16,19,22,23,25, 33,35,37,38,39,41,47,48, 51,60,65,66,82,88,93	Report	69,92,94,95,112,113
Scale validation	54,67,78,83,105		
Quasi-experimental	7,29,30,61		
Qualitative	44,103,107		
Program evaluation	79,84		
Case study	64		

Types of Research

There were 90 empirical and 17 non-empirical studies (Table 2). Nine publications were uncoded due to lack of information. The epidemiological and prevalence studies were coded as descriptive research, whereas the non-medical descriptive studies were mostly survey studies. The breakdown for empirical studies were descriptive ($n = 52$), survey ($n = 24$), scale validation ($n = 5$), quasi-experimental ($n = 4$), program evaluation ($n = 2$), qualitative ($n = 3$), and case study ($n = 1$). The analysis did not uncover any single-subject research design studies. Eleven review papers and six report-based papers, which included national summaries, were coded.

Cross-analyses

The topics of interest were collapsed and recoded into 13 areas of interest, and populations of interest were collapsed into 10 special needs categories (Table 3). In general, epidemiology and characteristic/developmental profile studies covered many special needs categories. Gaps in many areas of interests across different types of special needs categories were indicated by gaps in the table cells. Many crucial areas of interest were missing, such as those on special education processes (e.g. Individualized Education Plan), and instructional issues on content area learning (academic or social). The empirical research category was collapsed and recoded to reveal only five intervention studies, three of which were in gifted education (Table 4). The non-intervention studies were quite well-spread across the areas of interests and special needs categories (Table 4).

Table 3. Cross analysis: Areas of interest vs. special needs categories

	0	1	2	3	4	5	6	7	8	9	10	Total
Areas of interest	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
	%	%	%	%	%	%	%	%	%	%	%	%
Epidemiology/prevalence		6 5.2	3 2.6	11 9.5	6 5.2	4 3.4	1 0.9	1 0.9		2 1.7	4 3.4	38 33.6
Characteristics/profile	1 7.1		3 2.6			1 0.9	5 4.3	3 2.6			1 0.9	14 12.4
Special education		7 6.2	2 1.7						1 0.9			10 8.8
Disability issues		5 4.4					3 2.7				1 0.9	9 8.0
Gifted education								8 6.9				8 7.1
Inclusive education		4	2				1		1			8

	3.5	1.8				0.9		0.9				7.1
	2			1	1			1				5
ICT/AT	1.8			0.9	0.9			0.9				4.4
Parental issues	1	2				2						5
	0.9	1.8				1.8						4.4
scale development				1	1	1	1		1			5
				0.9	0.9	0.9	0.9		0.9			4.4
Alternative communication			3	1								4
			2.7	0.9								3.5
transition	1	2	1									4
	0.9	1.8	0.9									3.5
Instruction					1			1				2
					0.9			0.9				1.8
Early intervention	1											1
	0.9											0.9
Total	1	27	14	16	9	7	14	13	3	3	6	113
	0.9	23.9	12.4	14.2	8.0	6.2	12.4	11.5	2.7	2.7	5.3	

0=typical students; 1=all disabilities; 2=intellectual disabilities; 3=hearing impairment; 4=visual impairment, 5=ADHD; 6=ASD; 7=gifted; 8=learning disabilities; 9=emotional & behavioral problems; 10=physical and health disorders

Table 4. Cross-analyses: (a) Areas of interests vs. types of research (b) Special needs categories vs. types of research

Areas of interests	Empirical	Non-empirical
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	Intervention	Nonintervention	Review	Report
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
epidemiology/prevalence		36 (33.0)	1 (0.9)	
characteristics/ profile		12 (11.0)		1 (0.9)
special education		4 (3.7)	1 (0.9)	4 (3.7)
disability issues		6 (5.5)	3 (2.8)	
gifted education	3 (2.8)	2 (1.8)	3 (2.8)	
inclusive education		8 (7.3)		
ICT/AT		3 (2.8)	2 (1.8)	
parental issues		5 (4.6)		
scale validation		5 (4.6)		
alternative communication		2 (1.8)	1 (0.9)	
transition		4 (3.7)		
instruction	2 (1.8)			
early intervention				1 (0.9)
Total	5 (4.6)	87 (79.8)	11 (10.1)	6 (5.5)
Special needs categories				
Typical student		1 (0.9)		
All disabilities		18 (16.5)	4(3.7)	5(4.6)
Intellectual disabilities		13 (11.9)		
Hearing impairment		15 (13.8)	1 (0.9)	
Visual impairment		7 (6.4)		
ADHD	1 (0.9)	6 (5.5)		
ASD		11 (10.1)	3(2.8)	
gifted	3 (0.9)	5 (4.6)	3(2.8)	1(0.9)
Learning disabilities	1 (0.9)	2 (1.8)		
Emotional and behavioral		3 (2.8)		

Physical and health	6 (5.5)			
Total	5 (4.6)	87 (79.8)	11 (10.1)	6 (5.5)

Trends over Time Analyses

Trends over time were analyzed in five-year interval periods (Table 5). There was an upward trend during the 1985-1989 period, followed by a drop during the 1990-1994 period. Subsequently, the literature yield stabilized for the next 15 years. The most notable trend was that almost half of the total yield in this review (45.7%) was published during the last five years, suggesting a positive future trend. In contrast to areas of interest and special needs categories, which expanded over time, the types of research stayed constant with non-intervention research.

Table 5. Trends over time (1970 -2014)

	70- 74	75-79	80-84	85-89	90-94	95-99	00-04	05-09	10-14
Areas of interest	n	n	n	n	n	n	n	n	n
Epidemiology/prevalence			1	3	1	9	13	4	7
Characteristics/ profile				2	1		1	3	7
Special education	1	2	2	2		2		1	1
Disability issues				1		1			7
Gifted education				1					7
Inclusive education				1				1	6
ICT/AT						1		1	4
Parental issues				1			1		3
scale development								3	2
Alternative communication				1					3
Transition									4
Instruction							1		1
Early intervention									1
Total	1	2	3	12	2	13	16	13	53
Special needs category									
Typical children									1
All disabilities	1	2		3		6	3	0	12
Intellectual disabilities			1	2			4	1	6
Hearing impairment			1		1	6	2		6
Visual impairment				3			1	3	2
ADHD							1	2	4
ASD							1	3	10
Gifted				2	1			2	8
Learning disabilities							1	1	1
Emotional and behavioral							2		1

Physical and health				2			1	1	2
Total	1	2	2	12	2	12	16	13	53
Types of research									
Empirical							1		4
Intervention									
Non-intervention		1	1	9	1	11	13	13	38
Non-empirical									
Review							1		10
Report	1	1		2		1			1
Total	1	2	1	11	1	12	15	13	53

Emergent Themes and Gaps

Medical and social model of disability. The synthesis revealed the medical nature of the publications. Epidemiological and characteristic studies, which included etiology, prevalence, characteristics, developmental profile, and risk factors studies, dominated the publications (44.9%). The large number of medical-based publications implied that KSA might still be rooted in the medical model of disability. The decision at the onset to include epidemiological studies in this review has shed light on the discrepancy between publications from the medical and social perspectives.

Program outcomes. Six studies evaluated the outcomes of small- or larger-scale programs: Al-Hoshan (2010), and, Almuaqel and Elbeblawi (2012) on transition to work programs; Aljughaiman (2011), and, Aljughaiman and Ayoub (2012) on gifted programs; Issa Haimour (2013) on special education programs in inclusive schools; and Hussain (2009) on LD teacher preparation programs.

Attitude towards inclusive education. Five out of eight studies on inclusive education investigated teachers' attitudes. Some factors that were found to influence attitude include education area, teaching experience, having a relative with disability, type of disability, and gender (Al-Ahmadi, 2010; Al-Faiz, 2007; Alquraini, 2012; Alsalhe, 2012; Dubis, 1988).

Multinational collaboration. All five publications that involved multinational collaboration across the Arab region were on symptoms of autism. Amr, Raddad, El-Mehesh, Mahmoud, and El-Gilany (2011), and Amr et al. (2012) collaborated across Jordan, KSA, and Egypt. Another group of researchers (i.e. Hussein, Taha & Almanasef, 2011; Taha, Hussein & Almanasef, 2013) collaborated across Egypt and KSA. A bigger multinational collaborative research effort to validate an Arabic version of an autism screening tool in nine Arab countries was reported by Seif Eldin et al. (2008).

Cross-cultural studies within the Arab region. The first strand of cross-cultural studies involved cross-cultural comparison within the Arab region as already highlighted in the above-mentioned theme. According to Amr et al. (2012) such comparisons were justified because, despite similarities in religion and language, diversity of social,

cultural, and economic factors exists. KSA has a much higher national income, but the rate of social change is faster in Egypt and Jordan.

Cross-cultural comparisons with Western systems. The second strand of cross-cultural studies involved Arabic versions of tools adapted from Western systems. For example, Kearney, Smith, and Tillotson (2002) examined Saudi students to determine whether commonly used instruments for cognitive functioning and adaptive behavior would predict level of mental retardation. Their findings support a degree of congruence among youth with mental retardation in the U.S. and in KSA. Similarly, other studies on tools adaptation and validation (e.g. Khusiafan, Hastings, & Sonuga-Barke, 2004; Seif Eldrin et al., 2008) also indicate that in general the findings in the Arab region replicated those from Western countries.

Gender and special needs. Nine studies were solely on males: emotional and behavioral problems ($n = 3$), HI ($n = 2$), gifted students ($n = 2$), ADHD ($n = 1$), and autism ($n = 1$). By contrast, three studies were on female students: gifted ($n = 1$), language disability ($n = 1$), and ADHD ($n = 1$).

Limitation of Study

Six of the dissertations from the 1980s and two conference papers (1980 & 1999) did not have abstracts, therefore some coding categories were incomplete.

Discussion and Implication

First, the findings confirm that this paper is the first review undertaken on Saudi special education literature published in established international databases. The findings suggest a gap in publications rooted in the social model of disability that covers social, cultural, environmental, and educational aspects of special needs (Gallagher, Connor, & Ferri, 2014).

Another important insight was the 10-year incubation period for publications to be disseminated internationally after implementation of policies (surge in publications was after 2010). We suggest that reviews of literature in other nations be conducted to either confirm or dispute this incubation period, especially in Middle Eastern countries, which appear to have progressed along a similar trajectory (IBE-UNESCO, 2007).

As seen in this synthesis, there is a need to support the emergent research and publication culture in KSA. Growth in research can be accelerated through multinational collaboration across the Arab region, as similarities in language, culture, and religious sensitivities potentially allow for larger-scale studies that would contribute towards psychometric impact. Countries with a longer history could also contribute through cross-cultural adaptation and validation of scales. The scales used in the Saudi research are adapted from English versions.

This review also illustrates that special education research in KSA can be described in terms of developmental stages. According to Levin, O'Donnell, and Kratochwill (2003), a program of educational research can be seen to occur in four stages. The first stage would involve preliminary ideas, observations, and pilot work, which qualitative and correlational methods allow. The second stage would involve controlled classroom experiments and classroom observational studies using quasi-experimental, single-subject, and qualitative methodologies. The third stage would involve knowledge generated from previous stages to design well-documented intervention and to prove effectiveness in natural settings. The fourth stage would involve determination of the factors that lead to the adoption of effective practices in typical school systems under naturally existing conditions. The findings suggest that research in KSA is still predominantly in the first stage as described by Levin et al. (2003).

For one, this review has identified that research interests were still quite narrow, with several potential imbalances in the foci of research. An obvious research gap was with respect to content area learning and instructional service delivery, topics that are primarily in the second and third stages of educational research. Previous findings in international literature (e.g. Mastropieri et al., 2009) also indicated that content area learning has historically been identified as lacking in research attention. Additionally, research on program outcomes, which constitute the third and fourth stages of educational research, also received less attention, which was also in line with international literature (Rose et al., 2010). It is thus implied that the emergent research culture in KSA needs to be boosted to move beyond the first stage of research into classroom experiments, effectiveness, and intervention research.

With respect to populations of interest, most publications addressed a combination of disabilities, which was in line with the analysis by Mastropieri et al. (2009). Trends in the last five years also indicated a proliferation of research in the more contemporary disability categories such as ASD, ADHD, and gifted and talented. However, there were only three publications on LD, a sharp contrast to the yield in other international reviews (e.g. MacFarland et al., 2013). Possibly this is because LD is academic-based, whereas most of the yields from this synthesis are clinically-based.

As for types of research, only five publications were intervention studies, therefore providing evidence that research in KSA is still lagging at the second stage of the research framework. Previous international reviews also indicated a smaller proportion of intervention-based research (Mastropieri et al., 2009; McFarland et al., 2013). Odom et al. (2005) has highlighted that special education research may be the 'hardest of the hardest-to-do science' because of the complexity of the special education field. The low prevalence of some disability categories, and the heterogeneity of the students with special needs pose a significant challenge to research design requiring equivalent groups and random assignment which is necessary for group-based intervention studies. This complexity is also reflected in the current review, as the Saudi intervention studies were mostly confined to those on gifted children.

Odom et al. (2005) proposed that single-subject research design might be a better fit for special education, given the difficulty in using experimental group design. This synthesis found a glaring gap in the non-usage of single-subject research design, which was in contrast to international trends (Horner et al., 2005). Single-subject research design should therefore be adopted, as this research design may just be the catalyst needed to propel educational research beyond the first stage in KSA.

The discussion elicited up to this point (i.e. models of disability, incubation period, stages in research) indicated a developmental growth perspective to describe special education research in KSA. This synthesis therefore supports the typological rather than the geographical approach (Anastasiou & Keller, 2011) towards understanding international differences, which lends credence to the notion of a shared global perspective in special education.

However, a major gender-based theme did emerge that is specific to religion and culture. The findings uncovered the threat of disproportionality in research related to gender in KSA. Internationally, female under-representation in special education is now of significant concern to educators (Oswald, Best, Coutinho & Nagle, 2003).

Conclusion

This synthesis documents the foci of interests and special education research trends in KSA. Gaps in knowledge areas that still lack a firm empirical database are highlighted, providing insights for future research priorities. We suggest a determined effort to publish postgraduate level dissertations and the use of single-subject research design to increase intervention-based research. The findings also provide insights to inform other countries with a developing special education system. Specifically, the findings indicate the need (a) to conduct literature reviews to check and balance research perspectives, (b) to reduce the policy-research incubation period, and (c) to identify the current stage of research and determine steps to move to a higher research stage.

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A FACTOR ANALYTIC VALIDATION STUDY OF THE SCALE OF TEACHERS' ATTITUDES TOWARDS INCLUSIVE CLASSROOMS (STATIC)

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General and special education teachers (N = 125) completed the Scale of Teachers' Attitudes towards Inclusive Classrooms (STATIC). The internal consistency of the instrument was strong with an alpha of .89. The measure demonstrated excellent test-retest reliability (r = .99) and a dependent t-test was non-significant, indicating mean group temporal stability. An exploratory factor analysis resulted in a five-factor scale accounting for 61.6% of the variance versus the original four factors identified by the author of the instrument. Future research and potential use of the instrument are discussed.

Introduction

Over the past twenty years, research on teacher attitudes towards inclusion of students with disabilities has continuously yielded similar outcomes; the majority of teachers have been found to have a tendency to demonstrate a negative attitude towards inclusion if they perceive they have not been provided with the appropriate support and training to meet the needs of students with disabilities (Hammond & Ingalls, 2003; Hunter, 2004; McHatton & McCray, 2007). The inclusion debate continues across the world. The term "inclusion" has many definitions in the professional literature that may cause teachers to feel unprepared and resistant to the idea. With a dramatic increase in the number of students with disabilities included in general education classrooms, educators are left with the challenge to find ways to meet the needs of these students (McHatton & McCray, 2007; McLeskey & Waldron, 2002; Shade & Stewart, 2001; Valle & Connor, 2011). Thus, general education teachers may be resistant to inclusion because of the lack of support and unpreparedness they perceive in supporting the diverse needs of students with disabilities (Hammond & Ingalls, 2003; Hunter, 1999a,b; Roach, 1995). Furthermore, given the current atmosphere of high stakes testing, teachers may feel pressured to teach to the "standard" to increase test scores (Valle & Connor, 2011) which may, in turn, lead school personnel to overlook the need to support students with disabilities.

To continue to educate all students regardless of their abilities in the least restrictive environment (LRE), a major change in teacher attitudes, expectations, and educational practices may be necessary (Cook, 2001; McLeskey & Waldron, 2002; Shade & Stewart, 2001). Therefore, an examination of teachers' personal beliefs, fears, and

concerns is critical to the outcomes of inclusive classrooms (Causton-Theoharis, Theoharis, Bull, Cosier, & Dempf-Aldrich, 2010; Cook, 2001; McHatton & McCray, 2007; McLeskey & Waldron, 2002; Shade & Stewart, 2001; Valle & Connor, 2011). If inclusion is to be successful, special and general education teachers must be prepared to clearly define and accept new roles and responsibilities (Horne & Timmons, 2009; McLeskey & Waldron, 2002). Moreover, significant changes may be required to restructure school organizations and teacher training to enhance inclusive practices (Fullan, 2007; Gersten, Vaughn, Deshler, & Schiller, 1997; McLeskey & Waldron, 2002; Spirthall, Reiman, & Thies-Spirthall, 1996).

Given these important issues surrounding inclusion, there is a need for research on teachers' attitudes toward inclusion practices. The purpose of this study was to examine and validate the Scale of Teachers' Attitudes towards Inclusive Classrooms (STATIC). The STATIC instrument has been used in research studies to examine teacher attitudes towards students with disabilities, and teachers' beliefs with regards to inclusion of students with disabilities in the general education classroom (Cochran, 1998; Mock & Kauffman, 2002; Nishimura, 2012). Although the STATIC instrument has been used to measure teacher attitudes, an external validation study of the instrument has yet to be conducted.

Method

Participants

General and Special Education K-6 teachers (N = 125) were recruited from six elementary schools in a district in Orange County, California, accounting for 81% of the teachers in the district. Of the 125 participants, 80 were general education teachers and 45 were special education teachers. Approximately 73.5% identified their race/ethnicity as European American, 12.8% Asian American, 9.4% Hispanic/Latino American, .9% African American, and 3.4% Other ethnicities. The participants' levels of education were: Bachelor's degree (44.4%), Master's degree (49.6%), Educational Specialist degree (5.1%), and PhD. in Education (.9%). Age and sex/gender data were not collected.

The majority of the teachers had more than 10 years of teaching experience (n = 81). The average class size in the school district was reported as 31-40 students in upper grades (4-6) and 21-30 in primary grades (K-3). Of the 125 respondents, 40.2% had at least 2-3 students with disabilities included in their classroom, 17.1% had more than 5 students, and 12% had 1 student included in their classroom. The identified disability categories of the students included in the classroom were learning disabilities (44.4%), autism (13.7%), emotional disturbances (3.4%), and health and physical disabilities (4.3%).

Procedures

Approval was obtained from the University Institutional Review Board before the study commenced. Permission to use the STATIC was obtained from its author prior to the distribution of the survey. Teachers were recruited at a weekly staff meeting. Of the 155 teachers in the district, 125 teachers completed the survey the first day that it was administered. The survey was administered in a group format at each of the six elementary schools via paper and pencil during the weekly staff meeting and then eight weeks later. Administration time was approximately 10 minutes. A participant's survey was deemed to be satisfactory if they completed at least 90% of the items. All of the participants' surveys met this criterion.

Measure

The Scale of Teacher's Attitudes towards Inclusive Classrooms (STATIC; Cochran, 1999) consists of 20 items that were designed to measure a teacher's attitude towards students with special needs in the general education classroom. The response format is a 5-point Likert-type scale ranging from "Strongly Disagree" to "Strongly

Agree,” with five reverse scored items. According to the author of the STATIC, the sum score of the twenty items is indicative of teachers’ attitudes towards inclusion (Cochran, 1998). Higher scores indicate positive attitudes, whereas lower scores indicate negative attitudes towards inclusion. There are no specific cut off scores. The STATIC instrument is displayed in Appendix A.

The validation study of the STATIC instrument included 516 general and special education teachers. Specific details on the demographics and numbers of general and special education teachers were not provided. Internal consistency for the total scale was high, with an alpha level of .89. Cochran (1998) conducted a confirmatory factor analysis of the STATIC instrument and identified and named four factors for the scale: Factor 1: Advantages and Disadvantages of Inclusive Education; Factor 2: Professional Issues Regarding Inclusive Education; Factor 3: Philosophical Issues Regarding Inclusive Education; and Factor 4: Logistical Concerns of Inclusive Education. Cronbach’s alpha reliability coefficients were calculated for each factor. Factor one evidenced a reliability coefficient of .87, Factor two .83, Factor three .57, and Factor four .62. Factor one and two were found to have good internal consistency. The internal consistencies for factor three and four were low (Mertens, 2010).

Results

The statistical analyses were conducted using the Statistical Package for Social Sciences (SPSS) version 15 (SPSS, 2005). The results are presented for a reliability analysis and an exploratory factor analysis (EFA).

Reliability Analysis

The internal consistency estimate was examined with Cronbach’s alpha on the 20-item scale. The Cronbach’s is appropriate to use with multiple response, Likert-type data. The results indicated that the internal consistency on the full scale matched that of Cochran’s analysis and was high and adequate for research purposes (.89).

Test-retest (temporal) reliability analysis was conducted after eight weeks with the entire sample. A two-tailed Pearson’s correlation revealed that the scores from Time 1 to Time 2 evidenced high temporal stability ($r = .99$). In addition, a dependent t -test was conducted to assess whether mean levels remained consistent between Time 1 and 2. The results revealed there was no significant difference ($t = -.436, p = .664$), which indicated the means remained temporally stable.

Exploratory Factor Analysis

An exploratory factor analysis (EFA) was conducted on the 20-item instrument using SPSS. Items were retained on a factor if loadings were .40 or greater according to generally accepted recommendations for item retention (Muijs, 2010). Using a varimax orthogonal rotation in the EFA, five factors were identified in comparison to the original four as identified by Cochran (1998). Factors were retained if the eigenvalue was 1 or greater. Table 1 demonstrates a comparison of Cochran’s results with the current results for item loadings and total variance accounted for in each factor.

Table 1. Exploratory Factor Analysis Results for the STATIC

	STATIC Item # Loading	Sugita & Busse Loading	Difference
FACTOR 1	7 (.67)	5 (.64)	11,14 (Cochran)
	11 (.60)	7 (.52)	5,20 (Sugita & Busse)
	12 (.55)	12 (.73)	
	13 (.78)	13 (.69)	
	14 (.71)	15 (.55)	

	15 (.70)	20 (.57)	
Factor Variance	20.2%	33.1%	
FACTOR 2	1 (.74)	1 (.68)	
	2 (.74)	-	2 (Cochran)
	3 (.74)	3 (.74)	
	4 (.75)	4 (.74)	
	9 (.47)	9 (.66)	
Factor Variance	16.4 %	8.7%	
FACTOR 3	5 (.61)	6 (.53)	5,16 (Cochran)
	6 (.64)	8 (.63)	8,11,17 (Sugita & Busse)
	10 (.65)	10 (.81)	
	16 (.48)	11 (.62)	
		17 (.50)	
Factor Variance	11.1%	7.6%	
FACTOR 4	8 (.66)	2 (.61)	8,17 (Cochran)
	17 (.74)	18 (.77)	2 (Sugita & Busse)
	18 (.45)	19 (.75)	
	19 (.64)		
Factor Variance	8.1%	7.1%	
FACTOR 5	N/A	14 (.51)	14,16 (Sugita & Busse)
		16 (.84)	
Factor Variance		5.1 %	
Total Variance	55.8%	61.6%	

The results indicated general congruence across both studies on many of the items (see Table 1 for comparisons) although different factor loadings were found in the current study for several items (see Appendix A for scale items). For example, Cochran found items 11 (Students with special needs learn social skills that are modeled by regular education students) and 14 (Self-esteem of children with special needs is increased when included in the regular education classroom) loaded on Factor 1 which he titled: Advantages and Disadvantages of Inclusive Education. In the current study, neither of these items loaded on the factor, rather items 5 (Although children differ intellectually, physically, and psychologically, I believe that all children can learn in most environments) and 20 (Students with special needs should be included in regular education classrooms) loaded on Factor 1. Item 11 loaded on our Factor 3 and item 20 loaded on Factor 1. In comparison, Item 5 loaded on Cochran's Factor 3 (Philosophical Issues Regarding Inclusive Education) and Item 20 loaded on Factor 1.

Of particular note, the current analysis revealed a fifth factor compared to the original four factor structure found by Cochran. In the current factor structure, the fifth factor is comprised of Items 14 (Self-esteem of children with special needs is increased when included in the regular education classroom; Cochran's Factor 1) and 16 (Special inservice training in teaching special needs students should be required for all regular education teachers; Cochran's Factor 4). In the current structure, Factor 1 accounted for 33.1% of the variance, indicating an upper level factor. Factor 2 accounted for 8.7% of the variance, Factor 3 7.6%, Factor 4 7.1%, and Factor 5 accounted for 5.1% of the variance. Internal consistency estimates were .810 for Factor 1, .796 for Factor 2, .751 for Factor 3, .666 for Factor 4, and .462 for Factor 5. These estimates indicate adequate internal consistency for Factors 1, 2 and 3, and low internal consistency for Factors 4 and 5.

Correlations between the factors (see Table 2) ranged from a low of .132 (Factors 4 and 5) to a high of .585 (Factors 1 and 2). These correlations indicate the factors evidenced a small to moderate amount of shared variance (from 2% to 34%) and that the factors provided unique variance to the factor structure.

Table 2. Correlations Between New Factors

Factors	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Factor 1: Beliefs in Inclusive Education	-				
Factor 2: Ability and Confidence in Working with Students with Disabilities	.585**	-			
Factor 3: Making Progress toward Inclusive Education	.538**	.506**	-		
Factor 4: Supporting Inclusive Education	.370**	.445**	.338**	-	
Factor 5: General Education Perspective on Inclusion	.428**	.358**	.395**	.132*	-

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Discussion

The results of this factor analytic validation study of the STATIC revealed that the overall general factor structure was similar between Cochran's study and the current analysis. There were, however, significant differences. The most significant difference was the addition of a fifth factor that was evidenced in the current analysis. Also, as shown in Table 1, several items loaded differently.

Factor analysis is an inexact method. The results from a factor analysis rely on a variety of decisions regarding the method chosen to examine factor structure, such as factor extraction methods (e.g., accepted item loadings and eigenvalues), rotation methods (orthogonal vs. oblique), and the factor analysis method (exploratory vs. confirmatory). Depending on the methods, different factor structures may be found for a given set of data and a given sample.

We chose certain criteria for this analysis. Specifically, we adopted an accepted approach for item loadings and included items that loaded at .4 or above in a factor, whereas others may have chosen a more liberal loading as low as .3 or a more conservative level of .5. We maintained the conventional guideline for including factors with eigenvalues of 1 or greater which resulted in the five factor structure. We also chose to use an exploratory factor analysis (EFA). The purpose of an EFA is, as the name implies, to explore a factor structure without a priori consideration. In essence, this method allows data to fall where they may whereas a confirmatory factor analysis

(CFA) is chosen when one seeks to confirm either a theoretical or previously accepted factor structure (Cochran used a CFA with orthogonal rotation). Given that there has been no other external factor validation study of the STATIC, we deemed an EFA was appropriate. Finally, we chose, as did Cochran, to use an orthogonal rotation (varimax) in our analysis. An orthogonal analysis is based on the assumption that the factors are unrelated whereas an oblique rotation method is based on the assumption that the factors are related (e.g., depression and anxiety). The small to moderate correlations we found between factors supported this choice.

Based on our analyses of the items and factor structure we have tentatively named the factors: Factor 1: Beliefs in Inclusive Education; Factor 2: Ability and Confidence in Working with Students with Disabilities; Factor 3: Making Progress toward Inclusive Education; Factor 4: Supporting Inclusive Education; Factor 5: General Education Perspective on Inclusion. Although the internal consistency estimate for Factor 5 was low, we decided to retain the factor due to its contribution to the overall variance accounted for (5.1%) and the strength of the item loadings. These factors are of course in need of external validation.

Strengths and Limitations

There are obvious strengths and limitations in our study. One strength is the use of an external sample to examine the factor structure of the STATIC. External validity is necessary to examine whether previous results can be replicated and generalized beyond a specific research finding. Another strength was the inclusion of a temporal reliability study. In our study, the entire sample completed the STATIC after 8 weeks. The resulting correlation of .99 and the non-significant dependent t -test indicated that, for this sample, the teachers' attitudes toward inclusion remained remarkably stable across a two-month period.

The major limitations are found in the sample. Although 125 participants perhaps provide adequate power for statistical analysis, a larger, more representative sample would have strengthened the conclusions of the results. Cochran's study was with 516 respondents – a much larger sampling (albeit geographically limited to the state of Alabama in the United States). On a related note, the participants in the current study were all from a specific school district in Southern California. The results may have been different if a more nationally or internationally representative sample had been used.

Implications for Practice and Research

The results of this study have several implications for practice and research. With regard to practice, it may be that the perceptions of teachers, particularly general education teachers, can inform practice of the specific types of issues that arise that preclude teachers from embracing inclusion in their classrooms. As noted in the literature review, general education teachers may be reluctant to work with students with disabilities due to insufficient teacher preparation and/or preconceptions about the potential of students with disabilities, or an inherent bias against inclusion.

With regard to research, several implications stem from our findings. First, more research obviously needs to be conducted on the STATIC. Researchers can extend the data to examine the factor structure of the STATIC with more representative samples. Our sample was limited to Southern California, where inclusion practices are often limited. It also would be informative to examine the use of the STATIC across areas/districts in which inclusion is more, or less, practiced. On a related note, research should be conducted with the STATIC to examine differences regarding the perceptions of inclusion between general and special education teachers, and variations of the STATIC to examine the perceptions of other stake-holders such as administrators, parents, and support personnel such as school psychologists, counselors, and social workers. School administrators in particular may have an enormous influence on inclusive practice.

Research also should be conducted to examine the content of the items on the STATIC. Specifically, an expert panel could examine the items for clarity and whether the items validly assess issues of inclusion. Research also

should be conducted to examine whether the STATIC is correlated with other measures of inclusive practices such as the Multidimensional Attitudes toward Inclusive Education Scale (MATIES; Mahat, 2007).

Conclusion

The results of this validation study indicate that the STATIC possesses strong internal consistency and temporal reliability. The factor structure of the measure is in need of further validation to validate its use. We found a five factor structure versus a four factor structure as compared to the original structure of the measure. As our examination of inclusive practice advances, we need to be aware of the perceptions of school staff regarding special education students and their needs. At the risk of overuse, "Perception is reality." Progress toward inclusion may mean altering perceptions through training and education to change the reality and to move closer to the realization of truly inclusive education. Although further validation is warranted, the STATIC appears to be a useful tool to use toward accomplishing these goals.

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SUPPORTING INCLUSIVE EDUCATION: NEGOTIATING HOME-SCHOOL PARTNERSHIP IN SINGAPORE

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While there has been growing theoretical and policy interest in the areas of home-school partnership and inclusive education, relatively little work has linked the two fields. Where there have been studies, these have focused primarily on parent or school perspective. With inclusive education in its nascent stage in Singapore, this study examines the different roles emerging from home and school as well as factors underpinning this partnership. Data were drawn from interviews with 13 parents and 30 school staff. Our findings indicate that home-school partnership is a work in progress that is continually subject to home and school dynamics. The expectations and perceptions of parents and educators must be taken into consideration if the partnership is to succeed and sustain. Support from the wider community creates a synergy which reinforces home-school partnership and increases the visibility of children with disabilities by turning a private concern into a shared societal issue.

Introduction

In 2004, Lee Hsien Loong set out his vision for Singapore by declaring in his inaugural speech as prime minister to build a nation leaving none behind. Lee (2004) explicitly stated, “We will look after the less educated and the elderly who have helped build Singapore. And we must also have a place in our hearts and our lives for the disabled, who are our brothers and sisters too” (para. 17). Lee (2004) went on to articulate: “Ours must be an open and inclusive Singapore” (para. 26).

Without any legislation providing for special or inclusive education in Singapore (Wong, Poon, Kaur, & Ng, 2014), this explicit declaration to support persons with disabilities has been a watershed, leading to the introduction of two key initiatives to include and support students with mild disabilities in mainstream schools (Lim, Wong, & Tan, 2014). All primary schools and 52 secondary schools are resourced with at least one allied educator (AED[LBS]) trained to meet the learning and behavioural needs of students with disabilities through the provision of in-class support, individual or small group intervention (e.g. literacy skills, social skills, and study skills), transition support and case management (Ministry of Education, 2013). In addition, 10% to 20% of teachers in each primary and secondary school received in-service training in special needs. They provide individual or small group support within classrooms, monitor academic progress of students with disabilities, and share expertise and resources with other teachers and parents (Ministry of Education, 2013). Following the introduction of these support structures, there has been greater presence of students with disabilities in mainstream schools. Today, students with disabilities who are cognitively able to access mainstream curriculum are part of the general education system, and are supported mainly by the AED (LBS) and teachers trained in special needs. An estimated 2.5% of school going children (or about 13,000) aged between 7 and 18 years are reported with disabilities (Enabling Masterplan, 2012). Of these, about 7,600 are in mainstream schools and 5,400 in special schools.

Home-school partnership generally describes a collaborative relationship between parents and educators where the underlying goal is to maximize the full potential of students with and without disabilities in schools (Deslandes,

2001; Henley, Ramsey & Algozzine, 2006). In this relationship, parents are viewed as experts on their children while teachers are seen as experts on education (O'Connor, 2007; Olsen, & Fuller, 2012). The benefits of home-school partnership such as improved academic performance, reduced classroom misbehaviour, more positive attitudes toward learning, and better school attendance have been widely discussed in the literature (Fan & Chen, 2001; Henderson & Mapp, 2002; Desforjes & Abouchaar, 2003; Levy, Kim, & Olive, 2006). While there has been growing theoretical and policy interest in the areas of home-school partnership and inclusive education, relatively little work has linked the two fields (Vincent, 2003; Norwich, Griffiths, & Burden, 2005). This is surprising given that the planning and provision of inclusive education hinges on the combined forces of parents and educators to understand the unique needs of children with disabilities and secure appropriate support within the mainstream setting to alleviate those needs. Where there have been studies connecting the fields, these have focused primarily on parental or school perspective which rarely paints a complete picture of home-school partnership. The National Center for Educational Statistics (NCES) conducted surveys to examine the level of agreement between parents' and schools' perceptions of home-school partnership. Discrepancies were apparent in their reports on school practices to involve parents and parent participation in school activities (NCES, 2001). For example, 78 percent of schools shared that they involved parents in the decision-making process to a great or moderate extent, but only 64 percent of parents affirmed this practice. While 81 percent of parents indicated their attendance at parent-teacher conferences, only 57 percent of schools confirmed high parental attendance (NCES, 2001). Such discrepant reports suggest the need to study the views and voices of parents and educators to paint a complete picture of home-school partnership.

This study seeks to understand the current state of home-school partnership in inclusive education in Singapore and identify factors underpinning this collaborative relationship through the multiple voices of parents and educators. This is of particular significance as Singapore is at a turning point in its efforts to recognize and work towards supporting individuals with disabilities, having signed the United Nations Convention of the Rights of Persons with Disabilities (UNCRPD) in 2012 (Ministry of Social and Family Development, 2012). The espousal of the UNCRPD will set the stage for greater visibility and representation of individuals with disabilities in school and the wider community.

Home-School Partnership Models

The changing paradigm of home-school partnership can be described as a shift in power and control among stakeholders. In the first quarter of last century, the partnership was marked by unilateral decision-making of educators whose professional competence to achieve desired learning outcomes for children was indubitable (Olsen, & Fuller, 2012). Parents were cast as clients who were potentially inadequate and dependent, and therefore had passive and marginal involvement in schools (Wolfendale, 1983; Fine, 1993). Since the 1970s, there has been growing recognition of parents as collaborative partners and equal allies in education (Ainscow, Howes, Farrell, & Frankham, 2003; De Boer, Pijl, & Minnaert, 2010; Olsen, & Fuller, 2012). Home-school partnership has since been characterized by joint decision-making between parents and educators who pool and share their knowledge and experiences to secure optimum education for children (Griffiths, Norwich & Burden, 2004). In recent years, this partnership has extended to the wider community. While educational provisions have conventionally been limited to the existing resources and capacities of home and school systems, emerging partnership draws on the wealth of expertise and resources within the community to ease the pressures and demands on parents and educators (Khong & Ng, 2005; Epstein, 2007).

Epstein (1992) adopts a holistic approach to home-school partnership by depicting home, school, and community as overlapping spheres of influence on children's learning and development. The model emphasizes the separate but complementary influence of home and school, and promotes alliance between the two spheres (Deslandes, 2001). Collaboration between home and school reaches the apex when parents and educators function as genuine partners in shared activities. The model also captures six classic types of parent involvement that encourage and strengthen home-school partnership (Epstein, 2007): (a) parenting (type 1), such as supervision of child's behaviour; (b) communication (type 2), such as teachers keeping parents informed about students' progress; (c) volunteering (type 3), such as parental assistance in school events; (d) learning at home (type 4), such as parental support in homework; (e) decision making (type 5), such as inclusion of parental voices in the development of mission statements; and (f) collaborating with the community (type 6), such as support networks for parents and after-school recreation for students. Notably, the typology indicates a two-way partnership and makes a distinction between school-based and home-based involvement. School-based involvement includes activities like volunteering (type 3) and decision

making (type 5) where parents support the school by assisting teachers in school programs and events or voicing their opinions and ideas in the evaluation and review of school policies and practices. Home-based involvement, on the other hand, encompasses activities like parenting (type 1) and learning at home (type 4) where the school supports parents by sharing information on child development and parenting skills or providing ideas on creating a conducive and nurturing home environment for learning.

Hoover-Dempsey and Sandler (1995, 1997) expand on Epstein (1992, 2007)'s model by examining parents' decision to become involved in their children's education. Hoover-Dempsey and Sandler (1995, 1997) propose that parental (a) role construction, (b) sense of efficacy, and (C) perception of opportunities, invitations, and demands for involvement predict parental participation in their children's education. More specifically, parents tend to become involved when they see personal involvement as part of their obligation as parents, when they believe they are competent at helping their children, and when they perceive their children's and the school's desire for them to be involved. Accordingly, parents are less inclined to become involved if they expect teachers to shoulder all the responsibility for their children's education (Ritter, Mont-Reynaud & Dornbusch, 1993), if they have low self-efficacy in supporting their children's learning and development (Deslandes, 2001), and if they perceive their adolescents' wish for more independence and less overt parental involvement (Eccles & Harold, 1993).

Until late 1990s, the primary focus for the education system in Singapore was to stay au courant with the latest developments in curriculum and pedagogy to maintain its leading edge in the global educational landscape, and thus the degree of parental involvement in education was marginal (Khong & Ng, 2005). The establishment of the advisory council Community and Parents in Support of Schools (COMPASS) in 1998 turned the spotlight on the passive and peripheral involvement of parents in mainstream education (Teo, 2000; Khong & Ng, 2005; Ministry of Education, 2012). All mainstream schools were, and still are, encouraged to develop policies and programs to promote and strengthen home-school-community collaborations. Since the inception of the COMPASS, 96 percent of mainstream schools have set up parent support groups which serve as a social platform for parents to volunteer for school activities, develop closer relationships with teachers, and network with other parents (Masagos, 2009; Ministry of Education, 2012). The parent support groups also serve as a communication channel for parents to seek information, raise questions, and voice concerns on school policy and practice (Fu, 2009; Ministry of Education, 2012). Recently, the Parents in Education website was launched to engage parents in education and child development at home by providing information and resources on parenting, school curriculum, and home learning activities (Ministry of Education, 2012).

While these efforts to foster and strengthen home-school partnership serves parents of typically developing children, no such platforms are available for parents of children with disabilities in mainstream or special schools who require additional support (Enabling Masterplan, 2012). To date, there are few studies on home-school partnership in Singapore. Given the gaps in research literature, this study seeks to examine the different roles emerging from home and school to support inclusion and identify factors underpinning this partnership which can augment the educational experiences of students with disabilities in mainstream schools.

Method

Sample

Thirteen parents participated in this study. In four cases the child's mother and father were interviewed together. In other five cases the child's mother was interviewed alone. One child's parents declined to be interviewed. Of the 13 parents, three obtained a bachelor's degree; three held a post-secondary diploma; four received a certificate of secondary education; and three had below secondary education qualifications. The parent sample was made up of lower to upper middle income households, reflecting a good representation of the larger population. Children discussed in the interviews included seven boys and three girls aged 14 to 17 years with mild disabilities such as autism spectrum disorder, dyslexia, attention deficit hyperactivity disorder, visual impairment, and complex medical condition (e.g., lupus, rickets). Of the ten children, seven were Chinese, two were Malay, and one was Indian. All of them were students from two mainstream secondary schools which were purposefully sampled for our study.

Both secondary schools were nominated by professionals (i.e., teachers, psychologists, and psychiatrists) and other parents of children with disabilities as an exemplary school that has shown good support for students with

disabilities. The first school is a government-funded, co-educational secondary school resourced by the Ministry of Education to support students with autism spectrum disorders. The second school is a government-aided missionary all-boys secondary school resourced by the Ministry of Education to support students with dyslexia. Thirty school staff (15 male and 15 female) involved in the education of the ten children with disabilities also participated in this study. The school sample was made up of 20 subject teachers, four department heads, two allied educators, two counsellors, and two principals. Of the 30 school staff aged 26 to 55 years, 21 were Chinese, six were Malay, and three were Indian. Majority of the staff obtained a bachelor's degree; only one held a post-secondary diploma.

Data Collection and Analysis

A semi-structured interview guide was constructed to provide insight into home-school partnership in inclusive education. To ensure consistency and comparability of data, all participants were asked the following questions: (a) how is your child/student coping emotionally in school, (b) how is your child/student doing academically, (c) how is your child/student supported in school, and (d) to what extent do you collaborate with your child's teachers/student's parent to support him/her better? Additional questions were posed to elicit more in-depth responses. Unlike the lead questions, probe questions were not asked verbatim and were adapted to facilitate the flow of the interview and enhance participant reflection.

Ethical approval was obtained from the Institutional Review Board of Nanyang Technological University and the Ministry of Education for this study. Participants were provided with written and verbal explanations of the nature and purpose of the study, and assured of the confidentiality and anonymity of data to encourage candour and open sharing of information. Thirty-nine face-to-face interviews were conducted with parents and school staff, with each interview lasting 90 to 120 minutes. In addition, four staff focus groups were organized to fill information gaps and gather feedback on the authors' interpretations of participants' perceptions of home-school partnership. Each focus group discussion lasted 45 to 75 minutes. All interviews and discussions were conducted in English, audio-taped, and transcribed verbatim for subsequent analysis. Pseudonyms were used for each participant to ensure confidentiality and anonymity.

The authors analysed the transcripts independently for emergent themes relevant to home-school partnership using the constant comparative method introduced by Glaser and Strauss (1967). Inductive coding was subjected to repeated refinement as more data were analyzed, and related codes were clustered into core themes. All discrepancies and redundancies were resolved through a discursive process. Themes were determined to be valid when they were endorsed by at least one-third of the participants (four or more of 13 parents and ten or more of 30 educators).

Results

Six major themes emerged during the interviews: (a) endorsement of home-school partnership, (b) home-school communication on a needed basis, (c) constraints on home-school partnership, (d) supplementary provisions to home-school partnership, (e) challenges in home-school partnership, and (f) community support in home-school partnership.

Endorsement of Home-School Partnership

Both parents and educators see partnership as a desired and desirable outcome for the betterment of children's education. Educators recognize the critical role parents play in the learning and personal development of children within and beyond the classroom (Peters, 2002):

"I think parental support is very important in every child's life. If parents are involved in their child's life, the child will be more resilient. They will be more attentive in class. They will have a better attitude towards learning, towards teachers, [and] towards peers." (Teacher B)

"With the partnership of parents, the school vision will be achieved because the parents are there to support the school. What we can do is within school. Beyond that, the parents got to come in." (Department Head A)

Parents concur that the responsibility of children's education should not rest solely on the shoulders of the school. They construe parental role as including personal involvement in their children's education:

"We cannot expect the school to give him everything on a single platter... We believe that the key to success is how closely parents actually work with the school... I do not believe that education is dependent on the school. It has to involve the parents as well." (Calvin's Father)

Home-School Communication on a Needed Basis

Both parents and educators report that the only time they contact each other is when students are in trouble despite acknowledging the importance of home-school partnership. This disconnection between rhetoric and practice is echoed by Epstein (2007). Aside from the biannual parent-teacher conferences, parents see no need to step into the boundaries of the school unless their children are struggling at school. Parents perceive the lack of contact from school as an indication that their children are coping well in school or educators are managing the needs of their children:

"I hardly contact unless problems come up... No contact is good. Smooth."

(Quinn's Mother)

"In secondary one and two, we didn't [meet the teacher]. There was no necessity because he was doing so well. The teacher didn't need to meet us." *(Wayne's Father)*

Some parents feel that their children are not receptive to their overt involvement as they are going through adolescence and desire greater autonomy (Eccles & Harold, 1996). Parents may perceive that their children do not want them to interfere in school, as evidenced by common adolescent pleas for independence from parental control:

"She has this attitude now... I guess she is growing up. I mean as a teenager, you don't like people to be over your shoulder looking at what you do." *(Elise's Father)*

"I normally do not like to intrude... when you talk to the teachers, the kids will be like 'Oh, what the teacher tell my mom?' I don't want to spoil that openness that he shares with his teachers in school." *(Jason's Mother)*

Educators themselves see communication with parents as a last resort to remediate outstanding problems. They hardly meet individually with parents unless exigent circumstances occur (Khong, 2004):

"I keep in touch with most of the parents quite often unless the student does not have many problems. Then I meet them like once a term." *(AED [LBS] D)*

"Parent contact is minimal because we usually call them when something bad happens." *(Teacher E)*

This practice is likely to be determined by constraints on educators' time and energy. Educators are continuously confronted by various demands and responsibilities (Griffiths, Norwich & Burden, 2004). Given that they need to grapple with lesson planning, curriculum teaching, co-curricular activities, administrative duties, and multiple initiatives instigated by the Ministry of Education, constant communication with parents of all their students may appear to be a laborious task.

Constraints on Home-School Partnership

The literature has drawn attention to a prominent difference between home and school in the education of children, that is, the care of a single child versus all pupils (Power & Clark, 2000; Griffiths, Norwich & Burden, 2004). This feature takes increased significance for children with disabilities who require additional learning and socio-emotional support. Educators are working at full stretch. At the same time, they are responsible for the academic achievement of all students under their tutelage. They cannot afford individual attention or lessons that children with disabilities genuinely need:

"Our responsibility is the whole student body. It is not just looking after one small selected group of students. But by looking after this small selected group of students, we want to benefit the rest." *(Principal K)*

"Some parents fail to understand that teachers themselves have a very big commitment. They do have to take care of rest of the kids." *(AED [LBS] C)*

Furthermore, schools do not have the expertise to adequately support the socio-emotional and behavioural development of children with disabilities. This is of particular importance during the adolescent period of storm and stress where they go through puberty and face increased academic demands and pressures:

"On our side we could not provide the regular therapy that they [students with disabilities] need. Our teachers are not trained to be therapists... So we have to tell the parents that we are sorry but their child needs help in areas that we are unable to provide." *(Principal K)*

"Lance is like an active volcano and we won't know when it will erupt... We are trying to look for professionals outside who can work with him on a one-to-one basis. The school does not have the calibre to support, so the experts really need to come in and help address his issues." *(AED [LBS] C)*

Although parents demonstrate empathy and understanding towards the schools, it does not mean that they lower their expectations of school support. They expect existing support to continue even though it may be minimal:

"The school provides remedial lessons for all students, not especially for Sarah... cannot because not only she has difficulties. I mean other students also have problems. The teacher cannot spend time on her only." (Sarah's Mother)

"We have home tuition because he cannot see a lot of things in class and we don't expect every teacher to give him one-to-one lesson." (Calvin's Mother)

Parents themselves lack confidence in their ability to support their children in school work. Parents with little formal education believe that they do not possess the necessary knowledge and skills to help their children with homework (Dauber & Epstein, 1993). The greater specialization of subject areas and corresponding complexity of school work at the secondary level further diminishes parental sense of efficacy (Eccles & Harold, 1996). Parental sense of competence is also tempered by the unique learning difficulties associated with their children's disability:

"Last time, I could help with primary school homework, but at secondary school, I can't help." (Quinn's Mother)

"I can speak English, but when it comes to writing I really can't help. I rely on DAS [Dyslexia Association of Singapore], school and tutor." (Samuel's Mother)

Supplementary Provisions to Home-School Partnership

Parents thus actively seek private tuition and professional therapy to supplement the inadequacies of school and home support and give their children with disabilities the best chance for mainstream school success:

"Samuel goes to DAS [Dyslexia Association of Singapore] every Tuesday for two hours. Now the DAS teacher mainly teaches him composition writing because he is struggling... I rely on the DAS teacher to see how they can help." (Samuel's Mother)

"We do have one educational psychologist. Whenever I have issues with Elise, I will get her advice. So we fall back on her to help us with certain issues that we cannot handle." (Elise's Mother)

The tripartite partnership brings together home, school, and external agencies in an effort to alleviate the needs and difficulties of children with disabilities. Parents gather feedback on their children's academic performance and classroom behaviour from the school, and work on the areas of concern with private tutors and psychologists, as evidenced in Ivan's case:

"The subject teachers will feedback on the areas he is not doing very well and I would feedback to his mother who will work things out at home together with the tutors." (AED [LBS] D)

"The psychologist is working very closely with Mrs Karen [AED (LBS)] to tackle those issues that Ivan have in school. I hope that he can learn coping skills." (Ivan's Mother)

The supplementary support of private tutors and psychologists, however, comes at an exorbitant price:

"We thank God that at this point in time we can afford to support Calvin financially, but up to what level? There is a limit to what we can really support him. How about other parents who are financially not able to support? It is even worse." (Calvin's Father)

By extension, parents who can afford supplementary provisions for their children with disabilities, which in turn relieves the demands and pressures on school. Parents who do not have excess income at their disposal, on the other hand, are confined to more passive roles and rely upon school to provide extra support:

"To hire a tutor is quite expensive. If we can, we will. It depends on our finances." (Sarah's Mother)

"I hope his subject teachers have extra time to coach him. I want to put him through Math tuition. It is a bit expensive so he does not want to go. Now my hope is that the school can give extra lessons to students with special needs, maybe after school extra remedial or something like that." (Samuel's Mother)

Challenges in Home-School Partnership

While educators affirm the importance of home-school partnership, they find it a challenge to secure parental involvement. Congruent findings were reported by Markow and Scheer (2005) in their survey of mainstream secondary school teachers:

"At this moment, partnership with parents is our weak link. It is a challenge. Last year, we organized a parenting workshop... It was very sad because on paper I had 50 parents who signed up, but on the night itself we only had three." (Department Head A)

To maintain a middle-class standard of living today, most families consist of dual working parents (Olsen & Fuller, 2012). Even though parents see personal involvement as part of their parental role and want to be more actively involved, this desire is complicated by layers of responsibilities which prevent them from being responsive to educator's overtures for greater involvement:

"So far, no [have not volunteered in school]. Although we were approached, we have no time."
(Elise's Father)

"Other than communicating to them that there is going to be such an activity, we don't really get parents involve that much. Due to their work commitments and stuff like that, it makes it very difficult for them but they are very supportive of their child to attend." (AED [LBS] C)

In addition, educators described parental denial as a particular bugbear in home-school partnership. Parents of children with disabilities can be defensive about their children's condition. Some parents are resistant to educators' referral for evaluation given the stigma associated with disability:

"Some parents do not want diagnosis. We cannot do anything if the child is not diagnosed. The parents are saying that their child is normal, so who are we to question that? If the parents say no or feel uncomfortable, that is where it ends." (Department Head A)

"We spoke to a mother who does not seem to be willing to get her child a diagnosis for autism. Is there some form of support? Somewhere we can refer to or get external help, even if the parents refuse to?" (Principal G)

Another cluster of parents have difficulties coming to terms with their children's disability. They believe that their children will outgrow their disability with the course of time, and refuse to seek or accept help:

"Parents are always hoping for a miracle although some of them are very educated. They read a lot and they know that this disorder is not going to go away. It is how you manage as the child grows up. Many parents are still in denial because it has been a tiring journey for them and the journey goes on." (Counsellor F)

Although educators understand that raising a child with disability is a daunting prospect to parents, they are concerned that parental disbelief may deprive their children of early and appropriate intervention (Olsen, & Fuller, 2012).

Community Support in Home-School Partnership

Educators are unequivocal in their belief that children with disabilities who can cognitively access general curriculum should be given the opportunity to attend mainstream schools, but they are inundated with numerous initiatives and varied demands. They question their capacity to provide quality support to an increasing number of students with disabilities:

"I am not against the idea that more spaces should be opened up for students with special needs. They should be given the opportunity but... there must be some benchmark. For example, every year the intake should not be more than 30 students with special needs. There is a cap and the rest go to other schools. Support is only workable when there is quality in it. If not, it is as good as not doing it." (AED [LBS] C)

"I feel that the support is not quite there for students with special needs. I must admit. It is there because my teachers have the heart. But if you are talking about real professional help, I must admit, as a leader, it is not quite there because my teachers are really, really stretched." (Principal G)

Educators emphasize that inclusive education should not be the sole responsibility of individual schools. They perceive a need for more resources and support from the Ministry of Education to fully address the educational needs of children with disabilities:

"Each of them [educational psychologists from the Ministry] serves like sixteen schools. And primary schools only. They support secondary schools on a consultancy basis, so they won't even go down to our school. I think that is the extent of support we have for now." (Teacher H)

"We would love to have a psychologist be attached to every school. In Australia, therapy work is part of the mainstream school. Therapy does not belong in our world, that's the issue." (Principal K)

They also contend that effective inclusion requires an orchestrated network of synergistic support within and across education, health, and social services at the societal level as it is clear that the expertise and resources of a community exceed those of a single family or school (Khong & Ng, 2005; Epstein, 2007; Olsen & Fuller, 2012):

We feel that there is a need for greater collaboration, not only from school but the society... from grass-roots leaders, from the Ministry of Social and Family Development, from religious organizations. I think it must be a multifaceted approach... They play a part because we can only do so much here and the damage can be done outside. (Department Head M)

Discussion

According to Hoover-Dempsey and Sandler (1995, 1997), parents' decision to become involved in their children's education is influenced by their construction of parental role, sense of efficacy, and perceptions of opportunities, invitations, and demands for involvement from children and schools. Hoover-Dempsey and Sandler (1995) further pointed out that role construction is a necessary but insufficient condition for involvement. To translate the role construction into action, parents must have a sense of efficacy for helping their children succeed in school. In this study, parents recognize the crucial role they play in the learning and development of children with disabilities within and beyond the classroom, but feel they do not have the knowledge and skills necessary to handle the complexity of schoolwork at the secondary level as well as the unique learning difficulties associated with their child's disability (Eccles & Harold, 1996). This does not automatically translate to a low sense of self-efficacy as parents actively seek alternative sources of support to help their children succeed in school.

In Singapore, private tuition has become commonplace due to the prominence placed on academic excellence (Cheo & Quah, 2005). Most parents hire experienced tutors to get individualized attention and lessons that their children with disabilities genuinely need. Furthermore, they engage licensed practitioners such as psychologists, speech and language therapists, and occupational therapists to address the socio-emotional needs of children. Private tuition and professional therapy serve to supplement areas not adequately provided for in mainstream school and augment home-based involvement activities like parenting (type 1) and learning at home (type 4).

School-based parental involvement, on the other hand, is negligible. Most parents are not involved in volunteer activities (type 3) or decision-making processes (type 5). They fit the image of a "good parent" who does not intervene and support school efforts from a distance as painted by Lortie (2002) in his study of teachers. This is consistent with the literature that parental involvement is still largely seen as unnecessary interference in school governance and policy matters in Singapore (Khong & Ng, 2005). Even communication between home and school is sporadic; it occurs as and when it is necessary. Given that successful students have parents who stay informed and involved in their children's education (Epstein, 2007), it is good practice for schools to update parents on a continual basis for both positive and negative events throughout the school year (Montgomery, 2005). Regular two-way communication enables parents and educators to promptly nip problems in the bud before issues become severe (Olsen & Fuller, 2012). As few parents are likely to become involved without encouragement from the school, schools need to take a proactive role in spurring parental involvement (Eccles & Harold, 1993; Epstein, 2007; Olsen & Fuller, 2012). Parents are more inclined to be involved when they think the schools are receptive to their involvement (Hoover-Dempsey & Sandler, 1995). In fact, Anderson and Minke (2007) reported that specific invitations from teachers were a stronger predictor of parental involvement than parental sense of efficacy and level of family resources.

Parents have layers of responsibility. They have the onerous task of juggling career with parenthood. For parents of adolescents with disabilities, the task is further compounded by age-specific and disability-specific issues (Singer & Powers, 1993). Apart from everyday stressors, parents need to manage the academic and socio-emotional needs of their children with disabilities. While private tuition and professional therapy are covetable provisions of support, they are extortionately expensive. It is also an exhausting and endless pursuit for parents to find the best services and newest information regarding their child's disability (Olsen & Fuller, 2012). The demands of time, energy, and emotion prevent parents of children with disabilities from being responsive to schools' overtures for contact. Schools need to understand the stresses and vulnerabilities of parents of children with disabilities to design strategies for more effective parental involvement.

Together with upward trends in dual working parents, nuclear families, and income inequality (National Family Council, 2011; Urban Redevelopment Authority, 2012), parents are increasingly confronted with financial and emotional squeezes such as rise in the cost of living, absence of extended families for support, and double responsibilities of the sandwich generation (Olsen & Fuller, 2012). This implies that more homes, particularly working class parents, will struggle to fulfil their parental responsibilities (Khong & Ng, 2005). Neither will they be able to afford costly private tuition and professional therapy to support the educational needs of their children with

disabilities. Schools will need to step in and augment home support in the learning and personal development of children. On the other hand, with rising trends in parental education and involvement, schools are subject to greater scrutiny and accountability than ever before (Khong & Ng, 2005). Educators must manage the different and higher expectations of middle class parents who are well-educated and want the best for their children. Given these two countervailing trends in parenting, schools need to learn how to engage diverse populations of parents in a constructive partnership.

Nonetheless, schools cannot be expected to shoulder all the responsibility of inclusive education. Neither educators nor parents can face the challenge of supporting children with disabilities alone (Khong, 2005). Parents and educators must see each other as collaborative partners and equal allies in their common journey to realize the full potential of children with disabilities (Teo, 2000). The wider community can reinforce home-school partnership by providing wraparound services and creating richer educational experiences tailored to the needs of children with disabilities (Epstein, 1992). This includes collaborating with service agencies, faith-based organizations or businesses to seek professional help, support networks or structured work placements for students with disabilities. Moreover, an orchestrated network of synergistic support within and across education, health, and social services at the societal level increases the visibility of children with disabilities and turns a private concern into a shared issue (Griffiths, Norwich & Burden, 2004).

Conclusion

While both home and school embrace the concept of partnership, it is an arduous task that requires a commitment of time, energy, and resources (Mortier, Hunt, Desimpel & Hove, 2009). The expectations, perceptions, and opinions of parents and educators involved in the education of children with disabilities must be taken into consideration if the partnership is to succeed and sustain (Olsen & Fuller, 2012). Home-school partnership is a work in progress that is continually subject to home and school dynamics. The success and sustainability of partnership necessitates an understanding of the difficulties homes and schools face. The phrase “the spirit is willing, but the flesh is weak” is an apt description of the current state of home-school partnership in a meritocratic Singapore society. Cooperation and support from the larger society is imperative to bridge the gap between rhetoric and practice (Epstein, 2007).

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HOW TO SUPPORT STRUGGLING WRITERS: WHAT THE RESEARCH STIPULATES

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The purpose of this paper is to give an overview of the current research involving composition writing with respect to students experiencing difficulties. It responds to the fact that composition writing is a largely neglected area in education and research. This paper will review the following: (a) the reasons why writing competence is so vitally important in many life situations, (b) outline the ordinary development of proficient writing skills, and (c) address the causes and characteristics of what constitutes severe writing problems. The main piece of this paper centers on describing best practice approaches by assisting students to become proficient writers. It concludes with an outlook on pressing research questions that need to be tackled in the near future to provide even better support for students who struggle with the concepts of written expression.

Composition Writing: An Under-Researched Area in Education

Composition writing is the act of transferring ideas or information into written text while following conventional patterns in order to achieve a communicative goal with a specific audience. Even though the great significance of this skill for all different areas of life appears to be self-evident, it is a stunningly neglected aspect of education. Teachers usually focus on instructing children on how to read, spell, and perform math during their elementary school education. In contrast, only little time is spent to assist students to put their thoughts into words in order to write short stories, essays, treatises, or any other kind of meaningful texts. Even after they entered secondary education, composition writing is usually not explicitly targeted. This situation might not only result from a deliberate disregard by educators for this academic skill. Teachers are often overburdened by the task of having to instruct students in this area. As Troia and Graham (2003) alluded, *Teachers ... frequently comment that they lack the knowledge, skills, and strategies they believe would be helpful to them in facilitating children's emerging competence as writers* (p. 75).

Research also focuses mainly on other aspects of classroom instruction and largely parcels out the skill to formulate words and sentences following conventional patterns to create a significant writing product. In 1984, Sonntag and McLaughlin pointed out, *While much research has been done on areas of reading and mathematics, little by comparison has been done in writing, especially in teaching students how to write compositions.* (p. 49).

The situation has changed since the mid-1980s and many research groups have emerged that have been very active in their endeavors to shed some light on the questions of what makes a proficient writer and how the corresponding skills can best be taught. Fortunately, there are now even a number of excellent textbooks dedicated to this topic (e. g. Graham & Harris, 2005; Graham, MacArthur, & Fitzgerald, 2013; Harris, Graham, Mason, & Friedlander, 2007;

MacArthur, Graham, & Fitzgerald, 2008). However, the gap between papers on composition writing and other areas of school education remains remarkably wide, especially when considering not only English-speaking publications. When taking a look at the data base PSYINDEX – the German equivalent of PsycINFO (the largest data file in the field of psychology and education, produced by the American Psychological Association), the difference becomes particularly evident. As of August 2014, PSYINDEX lists 1,380 journal articles or book chapters that contain the terms *math*, *mathematics*, or *calculating* in their titles, whereas only 37 publication titles mention either *text composition*, *composition writing*, *expressive writing*, *writing skills*, *composition skills*, *essay writing*, or *story writing*.

The major cause for these gaps between papers on composition writing and other areas of education might be similar to the aforementioned reasons why teachers may pay little attention to this academic skill: Writing is a very complex neurodevelopmental process. It requires brain-based components such as intact attention and concentration, spatial and sequential production, memory, higher-order cognition, language involving vocabulary and spelling, as well as executive functioning (Feifer & Defina, 2002). A person has to coordinate multiple cognitive, linguistic, and physical operations along with needing to consider genre-specific conventions while keeping the intended audience in mind when writing (Troia & Graham, 2003). This makes it extremely intricate to validly assess the product of one's writing endeavors. Generally, standardized diagnostic instruments and curriculum-based measures (CBMs) cannot adequately grasp the essence of what constitutes a *good* written text. Most of these instruments focus on productivity. For example, large parts of the *Test of Written Language* (TOWL-4) (Hammill & Larsen, 2009) assesses spelling and punctuation, as well as the student's ability to integrate the meaning of several short sentences into one major one. The three most widely used approaches of applying CBMs in measuring writing include: (1) counting total words written, (2) counting total words spelled correctly, (3) and counting the number of adjacent, correctly spelled words (Correct Word Sequences, CWS) (Watkinson & Lee, 1992). These methods possess a high level of objectivity. Most of all, they are easy to use. However, they often miss the point. Koutsoftas (2014) rightly argues that many passages that are rated very positively by most people can sometimes score rather low when standardized diagnostic instruments or CBMs are applied. Thus, writing and its assessment poses challenges for researchers that other school-related research topics do not. There is not much to objectively, reliably, and validly measure reading fluency or spelling. With writing, it is a whole different story.

The Importance of Being Able to Put Ideas Into Words

It is hard or even impossible to differentiate the significance of different school-related skills and to determine, which one is more important than another. However, there seems to be a broad consensus that reading comprehension is certainly one of the most important competencies a child can acquire in his or her first three to four years of schooling. Without adequate expertise in this area, students are not sufficiently enough able to understand, analyze, or apply the information in text and are thus bound to fail in most every school subject (Grünke, Wilbert, & Kim Calder Stegemann, 2013). Proficiency in deriving meaning from text is equally important in math (especially when having to solve word problems), language, science, religion, or social studies. In contrast, not being able to play a musical instrument or to run fast does not have the same disadvantageous effects on the academic career of a child. Ample skills in composition writing seem to be equally vital as ample skills in reading comprehension. In fact, both areas are very closely connected. Being able to relate events and represent their links in a mental model is crucial for both understanding and producing text (Arfé & Bosolo, 2006). However, the underlying competencies necessary for performing reading comprehension and composition writing tasks are not identical. In order to produce and record an appealing story, one needs to be adept in making meaning from text. But this is not true vice versa. People are oftentimes able to comprehend a passage, even though they lack the skill of composing an attractive narrative themselves (Carretti, Re, & Afré, 2013; Katusic, Colligan, Weaver, & Barbaresi, 2009).

By independently producing a text, children and youth can express their content knowledge, their intellectual flexibility, and their maturity. Oftentimes, the appraisal of student's performance in different school subjects does not only depend on their expert knowledge or reasoning abilities, but also heavily on their skill to put their ideas into a written form. To prepare for an exam, it is frequently essential to take notes, or excerpt the main points of a text.

What applies to basic school education is equally valid for higher learning: Without adequate skills in *thinking on paper*, students are bound to perform poorly in a whole array of subject matters. Additionally, this ability is one of

the essential competencies in many occupational fields. Finally, an incapacity of putting thoughts into written words excludes one from many leisure and social activities like sending an email, communicating through blogs, sharing an experience on Facebook, or posting a simple text message on a smartphone (Boyd, 2008; National Commission on Writing, 2004). Thus, it is of crucial significance to make sure that no student falls behind as the rest of the class progresses in their composition writing abilities.

The Development of Proficient Writing Skills

The so called *simple view of reading* by Gough and Tunmer (1986) is a popular mathematical formula that states that decoding (D) x language comprehension (LC) = reading comprehension (RC). This model explains the act of reading, processing, and understanding a text in a very concise and succinct way. However, no equivalent theory exists for writing. No *simple view* can adequately capture the complexity of the ability to compose a written text. Especially the development of higher-level skills in this area does not seem to follow as much certain fixed stages as it is the case with other academic competencies. The path by which children eventually attain adequate expressive writing abilities encompasses some small as well as some very major steps, a lot of plateaus, and even a number of temporary setbacks (Berninger & Winn, 2006).

The ability to compose text develops alongside the other three linguistic systems: speaking, listening, and reading. There is considerable overlap between all these related skills. Special competencies in one area usually enhance the development in another (Shanahan, 2006). Proficiency in text composition is acquired gradually with age and practice (Midgette, Haria, & MacArthur, 2008). However, unlike with the other three skills, there does not seem to be an end to perfecting writing abilities. Professional authors oftentimes publish their best work later in life. The same kind of progress can usually not be noticed when focusing on a person's speaking, listening, or reading competencies.

Even before they reach age three, children demonstrate an understanding of and an appreciation for writing (Santangelo, 2014). They are aware of the fact that letters represent meaning. Frequently, they try to imitate their parents by scribbling letter-like characters on paper and pretending to convey a message through this playful act. After they entered school, they acquire the alphabetic principle (i. e. they understand that there are systematic and predictable relationships between written letters and spoken sounds) and start writing simple words. They progress in their transcription skills (handwriting and spelling), and become more and more familiar with sentence generation strategies to transform their ideas into language.

During childhood up to puberty, student's so called working memory continues to increase in capacity. The term refers to *...a system for temporary storage and manipulation of information during the performance of a wide range of cognitive tasks* (Kemps, de Rammelaere, & Desmet, 2000, p. 89). Working memory capacity and its efficient use are seen as the main predictors of the composition writing ability in children and youth (e. g. Berninger & Swanson, 1994; Swanson & Berninger, 1996). This feature is so important, because it determines to what extent a student is able to control the engagement of the writing process (planning, generating content, and revising), while maintaining a representation of the intended audience (Alamargot, Caporossi, Chesnet, & Ros, 2011). Simultaneously, a person needs to access his or her long-term memory to retrieve content knowledge as well as knowledge about different genres, task schemas, linguistic conventions, etc. On top of it, students need to be able to flexibly select the most suitable strategy for a respective sub-task from their available repertoire, to monitor its usefulness while applying it, and to keep themselves motivated during the process (Limpo & Alves, 2013). Without an efficient use of working memory resources, a person is bound to fail in trying to perform all these tasks simultaneously.

Characteristics of students who struggle with written expression

Because composition writing is so demanding, but at the same time such a neglected area in school education and research, it takes no wonder that the prevalence of children and youth with severe problems in this respect is alarmingly high. In 2011, the *National Center of Educational Statistics* (NCES) commissioned the *National Assessment of Educational Progress* (NAEP) to gather data on the largest representative and continuing assessment of written expression in the United States. Within the scope of this survey, the written language abilities of 52,000 8th and 12th graders were assessed. The findings suggest that written language skills remain the single most challenging academic task to both teach and remediate successfully. A vast majority of secondary level students have not demonstrated written language competency for grade-level material with writing pitfalls especially

paramount among male students. At least one-third of High school students planning to attend college do not meet the basic readiness requirement for college composition courses.

The globally used *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) (American Psychological Association, 2013) describes a syndrome called *Written Language Disability* (WLD). Characterizations of this diagnosis vary in the literature. However, delays in the capability to compose a written text (usually of around two years), along with an average intelligence quotient (IQ) and fair academic skills in non-writing related areas are certainly the most common features in all definitions (Yoshimasu et al., 2011). According to Katusic et al. (2009), the incidence rate of boys and girls with a WLD varies between 6.9 and 14.7%, depending on how the diagnostic criteria are applied. The share of children and youth with reading, spelling, and math disorders in the population of students is usually a lot lower (Mayes & Calhoun, 2006). Regardless of what epidemiological study is used as a reference, boys always outnumber girls concerning the prevalence of this disorder by a large margin. A ratio of 2:1 to 3:1 seems to be the adequate magnitude. About a quarter of all students with a WLD do not meet the diagnostic criteria of a reading disability. Both problem areas are closely related. However, a considerable number of boys and girls with severe writing challenges are perfectly able to decode a text fluently and comprehend its content (Katusic et al., 2009).

If we additionally take the group of students into account that do not qualify for a WLD diagnosis, but nonetheless experience severe difficulties in composition writing, the number of children and youth in need of help becomes even larger. In fact, problems in composing meaningful text is characteristic for a large spectrum of special educational needs. They have been described in students with different kinds of emotional and behavioral problems (Bak & Asaro-Saddler, 2013), learning disabilities (Saddler, Asaro, & Behforooz, 2008), childhood autism disorders and Asperger syndrome (Asaro & Saddler, 2009; Asaro-Saddler & Bak, 2014), attention-deficit/hyperactivity disorders (Re & Cornoldi, 2010), or such rare phenomena like the Noonan syndrome (Asaro-Saddler, Saddler, & Ellis-Robinson, 2014).

Even though these young people have to cope with a whole variety of different challenges, their writing difficulties express themselves in very similar ways. The same is true for interventions to help these children and youth acquire composition skills (which we will describe in a later part of our paper): These students all seem to benefit from the same kinds of approaches (Saddler & Asaro-Saddler, 2014). Thus, the following remarks apply to a very large scope of young people with special needs.

In all cultural educational venues, it is mandatory to first excel in lower-level skills before it becomes possible to master higher-level abilities. For example, if children have not developed ample math fact fluency, they will not be able to solve complex word problems (Grünke & Calder Stegemann, 2014). Students with WLD and other forms of poor written expression usually experience severe difficulty with the mechanics of the writing process. This becomes especially apparent in their relatively slow and uneven handwriting (Graham & Weintraub, 1996). All initial writers struggle with fluency and legibility in one way or another, but children with problems in composition writing have never overcome this hurdle. Thus, they have to continue to devote a large share of their cognitive resources to forming legible letters instead of attending to planning, organizing, or other composing processes. In many instances, students cannot even read their own notes. This makes studying for a test, at best, very difficult and, at worst, nearly impossible (Graham, 2010).

Students with poor expressive writing also demonstrate very poor spelling, capitalization, punctuation, and usage skills. In addition, their texts contain an exceptionally large amount of grammatical errors (MacArthur & Graham, 1987). These boys and girls are constantly so engaged in trying to meet the demands of lower-level text production tasks that they cannot think about the content of what they want to communicate and are unable to consider their potential audience (Fulk & Stoemont-Spurgin, 1995). For them, composing becomes a knowledge-telling process in which they instantly write down anything that comes to mind – without considering the respective genre, the audience, or the purpose. Each thought just prompts the next one (Graham, 2010). Factoring out the mechanics of writing, not investing a sufficient amount of time into planning is the number one stumbling block that keeps learners from producing appealing texts (Rodríguez, González-Castro, Grünke, Cerezo, & Álvarez, 2015).

It is thus not surprising that these children and youth produce generally very short, incomplete, and poorly organized texts (Englert & Raphael, 1988). Their brief writing products mainly contain irrelevant information that is not arranged in any structured manner (MacArthur & Graham, 1987). They obviously are not sufficiently able to actively engage in a task and/or show the persistence necessary to succeed in such a challenging and sophisticated

assignment such as producing a meaningful and compelling text (Torgesen, 1982). Thus, quite a number of children who experience severe problems in expressive writing also suffer from some form of Attention-Deficit/Hyperactivity Disorder (ADHD) (Rodriguez, González-Castro, Grünke, Cerezo, & Álvarez, 2015). But even if students with severe problems in writing composition were able to apply the necessary concentration and endurance to finish an ambitious writing task, they would in all likelihood not be adequately proficient in executing and monitoring the cognitive processes that are essential for succeeding in their endeavors (Baumann, 1984). All these difficulties become ever more evident as the complexity of the task increases. Writing a story is usually less demanding than writing a persuasive essay (De La Paz, 2001).

Best Practices in Helping Students Become Proficient Writers: Teaching Basic Prerequisite Skills

In order to successfully be able to tackle higher-level writing abilities, it is indispensable to demonstrate sufficient expertise in lower-level skills (see above). The handwriting has to be adequately fluent and legible. In addition, one must possess ample spelling, capitalization, and punctuation skills, as well as a well-founded knowledge base about the grammar of the respective language he or she intends to write in. A person has to be able to execute all these prerequisite competencies without the need for conscious attention in order to compose text (Graham & Santangelo, 2014).

But even though these skills are so vital, they have been pushed *to dusty corners of the classroom* in recent years, as Schlagal (2013, p. 257) described it. Electronic keyboard- and keypad-driven communications with its spell-check functions seem to have given rise to the attitude that teaching children legible handwriting, as well as correct spelling, capitalization, and punctuation, is no longer important (ebd.). However, neglecting to instruct boys and girls in these areas has very harmful effects on their writing development.

Fortunately, there are a number of evidence-based practices that can remediate those basic skills (Howe, Roston, Sheu, Hinojosa, 2013; Nies & Belfiore, 2006; Simonsen & Gunter, 2001). Handwriting can best be taught by teachers visually and verbally modelling correct letter formation and by short daily practices with immediate, corrective feedback (Hoy, Egan & Feder, 2011, Schlagal, 2013). The same applies to interventions focused on improving spelling, capitalization, and punctuation (Sayeski, 2011). Two approaches that are exemplary in this respect are copy-cover-compare (CCC) and constant time delay (CTD). During spelling instruction using CCC, boys and girls are required to look at a target word, cover it, write it down, uncover the previously covered word, compare the spelling with the written response, and correct any errors if applicable. The steps of CTD include the presentation of a word, the provision of a constant time interval for a student to write it down (e. g. 5 seconds), and a reinforcement in case the word was spelled correctly (or a corrective feedback if an error occurred) (Cates, Dunne, Erkfriztm Kivisto, Lee, & Wierzbicki, 2007).

Teaching Sophisticated Writing Strategies

There seems to be a broad consensus among scholars that the Self-Regulated Strategy Development (SRSD) model (Harris & Graham, 1996) is the best concept to guide instruction when familiarizing students with the three fundamental processes of successful composition writing: planning, producing text, and revising (Santangelo, 2014). As Limpo and Alves (2013) point out, *In particular, the SRSD seems to be the most effective strategy instruction model, as its average effect size doubles that of the other ones* (p. 329). It is in large parts based on the learning strategies approach developed by Alley and Deshler (1979) (Graham & Harris, 2009) and was initially referred to as self-control strategy training (Harris & Graham, 1985). One of the reason for its potency is the fact that it was designed to address exactly the four key areas that the development of writing skills mainly depends upon: (1) self-regulatory or strategic behaviors, (2) writing knowledge, (3) writing skills, and (4) motivation (Sreckovic, Common, Knowles, & Lane, 2014). The two key instructional principles of Self-Regulated Strategy Development (SRSD) are explicit teaching and simplifying complex processes into small comprehensible steps (Regan & Mastropieri, 2009). Isolating and then automating certain actions that a learner must perform in order to reach a certain goal effectively reduces working memory overload. Regardless of what kind of specific sub-goals a teacher wants to aim for at a time, the following six stages of SRSD always guide his or her actions.

Stage 1 (convey and activate background knowledge). The teacher makes sure that the students possess the knowledge and the skills to use a strategy. This is done through informal observation or direct assessment. The teacher helps the students to remember the parts of the procedure that they are already familiar with or provides remediation as necessary.

Stage 2 (discuss it). The teacher presents a particular strategy as a useful tool to accomplish a certain task. Subsequently, he or she outlines and explains the different steps of the procedure.

Stage 3 (model it). The teacher demonstrates how to apply a strategy using simple problems while verbalizing his or her thoughts. This enables learners to get familiar with the metacognitive processes someone must use to master a task.

Stage 4 (enable memorization). The teacher provides ample practice opportunities to help students to memorize the steps of a strategy. To facilitate successful learning, he or she uses cue cards or other visual aids that present these steps. Oftentimes, mnemonics are also included as a help to make memorization easier.

Stage 5 (support it). The teacher scaffolds the application of a strategy and offers prompts to the students with gradual fading. As time progresses, learners should be able to apply the procedure more and more without help.

Stage 6 (enable independent performance). The teacher monitors student's progress while they are trying to tackle different subtasks of the writing process all by themselves and reinstructs them if necessary (Graham, Harris, & Saddler, 2009; Jacobson & Reid, 2007; Reid, Hagaman, & Graham, 2014).

These stages can be used as a framework to design instruction for teaching any kind of skill necessary to improve writing abilities in struggling children and youth. Below, readers find some examples of strategies designed to support the acquisition of planning, text producing, and editing skills that can easily be taught by going through the six stages of SRSD. The procedures mentioned are not a comprehensive collection of effective writing strategies, but just a small arbitrary selection out of a very large pool of helpful options. As numerous literature reviews and meta-analyses indicate, techniques like the ones described below have proven to be highly effective with struggling writers (e. g. Bangert-Drowns, Hurley, & Wilkinson, 2004; Datchuk & Kubina, 2012; Graham & Perin, 2007a; Rogers & Graham, 2008; Sreckovic et al., 2014). Additional and equally beneficial interventions to foster text composition are described in Graham and Harris (2005), Graham, MacArthur, and Fitzgerald (2013), or Harris and Graham (1996). Even if strategies do not explicitly focus on enhancing motivation, this essential ingredient in any favorable writing endeavor usually gets boosted by the mere fact that students are systematically led from one partial success to the next, while constantly getting reinforced by the teacher for their efforts. This side effect is an intended feature of SRSD.

Planning

Different text genres follow different particular text structures. For example, narratives involve a setting, an episode, and a conclusion. Frequently, a story is structured around a main character, a problem, an action required by the main character to solve the problem, an outcome of this action, and some kind of bottom line (Reid & Lienemann, 2006). With other genres, it is more difficult to pinpoint a basic outline. However, regardless of the type of text someone wants to produce, they need to sit down first and think about what ideas they intent to write about.

In order to compose a text of good quality, one must be mindful of the relevant structure and come up with a rough blueprint. There are different ways on how to help struggling writers master this part of the task. One of them is the use of *story maps*. These are graphic organizing techniques that are based on schema theory (Anderson, 1977). They depict all major elements of a narrative (settings, characters, problems, events, solutions, and conclusions) in the form of a diagram (see figure 1). A story map template is supposed to facilitate the brainstorming process of students by serving as a reminder of the different components of a tale and by providing the opportunity to systematically take some notes. It helps them to incorporate the different elements by providing them with a *bird's eye view* of the basic structure and the connection between the various parts of a respective narrative (Davis & McPherson, 1989; Li, 2007). Story maps have mainly been used to improve children's reading comprehension (e. g. Grünke, Boon, & Burke, in press; Grünke, Wilbert, & Calder Stegemann, 2013), but have also been successfully applied in building planning skills in poor writers (e. g. Hennes, Büyüknarci, Rietz, & Grünke, 2015; Li, 2007; Unzueta & Barbetta, 2012; Zipprich, 1995).

The question-asking strategy that Graham and Harris used in some of their early studies on teaching story composition to struggling learners (e. g. Graham and Harris, 1989a) is very similar to the story mapping approach

(Baker, Gersten, & Scanlon, 2002). As mentioned above, these graphic organizing techniques are meant for designing narratives. However, they could also be of benefit within the context of other text genres.

An additional (and advanced) way to help struggling learners to plan their writing product is *STOP & LIST*. This strategy involves four steps that students need to follow: (1) Sit down quietly, (2) think about the purpose, (3) list your ideas, and (4) sequence your ideas. Such a procedure can be used with all different kinds of genres. It helps children and youth to not instantly start writing as soon as they are assigned a topic, but to stop and list first (Troia & Graham, 2002).

Producing Text

The ability to construct sentences is undoubtedly one of the most vital competencies as a person tries to express his or her thoughts in writing. Children and youth with insufficient knowledge about the grammar of their language are certainly disadvantaged when trying to create such a composition in miniature (Saddler, 2013). Texts that contain many sentences that are short and choppy, frequently start with similar words, exhibit roughly the same length, or are characterized by fragments, run-ons, and ramblings, usually get rated rather unfavorably (Saddler, Asaro, & Behforooz, 2008). Unless students make ample improvements in this respect and acquire the skills necessary to produce meaningful and well-phrased groups of words which express a complete thought, they are bound to fail in their endeavors to create texts of sufficient quality. A simple and well-known strategy to help struggling writers is called *sentence-combining*. It provides structured practice in manipulating and rewriting short sentences of low quality into more mature and more varied ones. When using this approach, teachers or peer tutors create a number of exercises that consist of many kernel sentences. He or she then models how to combine two very similar ones, like *The dog is big. The dog barked.* These two entities can be incorporated into one, such as *The big dog barked* or *The dog that is big, barked.* As soon as students have become proficient in combining kernel sets, they can be taught how to combine sets of kernels into whole paragraphs, while promoting sentence variety (Saddler & Asaro-Saddler, 2010).

A much more complex strategy to help students improve their writing is called *POWER*. It is comprehensive in the sense that it not only focuses on the actual process of generating words and phrases, but also involves the other two elaborated procedures described in this article: planning and editing. During the planning phase, learners are encouraged to consider the intended audience of their text, make themselves aware of the purpose of their paper, and to activate their background knowledge regarding the respective topic. They take notes of their thoughts on a so called pattern guide and come up with a first structure for their text. The core of *POWER* is a phase, in which students go back to their pattern guide to formulate a first draft of their text. They then reread and appraise their writing product by marking sections they approve of and those that they believe need modification. In a subsequent step, they make the necessary alterations and think of two questions they could ask their teacher or a peer tutor in order to get some ideas on how to further improve their text. They then read the current version of their paper to this other person and let him or her critique on it. Both, student and teacher or peer tutor, then brainstorm about ways on how to advance the text to a higher quality level. Finally, the learner works the suggestions into his or her paper. During this last phase, the teacher or peer tutor assists the student in his or her endeavors to revise the text by scaffolding how to restate certain passages, rearrange the structure, insert new information, etc. (Englert & Raphael, 1988; Reid & Lienemann, 2006).

Editing

SCAN is a strategy designed to help students revise a persuasive essay. It serves the purpose of adding information to a paper if necessary, improving its clarity and cohesiveness, as well as correcting any spelling, capitalization, punctuation, or grammatical errors. When using *SCAN*, learners go through the following five steps: (1) Read your paper and refamiliarize yourself with it, (2) identify a topic sentence that reflects the desired intend of your paper, (3) add two or three additional reasons for your position, (4) go through each sentence and check whether it is comprehensible to the reader, useful for your argument, complete, as well as free of mechanical errors, and (5) make any final changes (Graham & MacArthur, 1988). If used with other kinds of text genres, the steps of *SCAN* have to be reformulated accordingly.

A specific technique focused at the last step in the SCAN strategy is called *COPS*. When applying this procedure, students have to appraise their paper and check (1) whether first words and proper names are capitalized, (2) whether the overall appearance is acceptable, (3) whether the commas and end punctuations are set correctly, and (4) whether every word is spelled the right way (Schumaker, Deshler, Nolan, Clark, Alley, & Warner, 1981). In case a student needs help, he or she is encouraged to ask a teacher, refer to a dictionary, or consult the internet (Reid & Lienemann, 2006).

Future Research Perspectives on Optimizing Current Treatment Options for Struggling Writers

The capacity to eloquently and coherently compose a text without committing too many errors in grammar, spelling, or punctuation is an extremely powerful predictor of academic and vocational success. It is also a vital prerequisite for participation in civic life. Despite the significance of this ability, we have not yet managed to comprehensively provide elementary and high school students with effective instruction in writing (Santangelo & Olinghouse, 2009). The number of children and youth with serious difficulties in this area is still alarmingly high (Feifer, 2013; Katusic et al., 2009). One reason for this is certainly the long time neglect of research in this field. The amount of studies on how to best teach reading or spelling still outnumbers the amount of studies on how to best teach writing by a great margin. However, mainly triggered by the pioneering work of Graham and Harris (e. g. 1988; 1989a; 1989b), a large body of findings regarding the usefulness of different approaches to teach text composition to struggling learners has emerged over the last two and a half decades.

In this paper, we presented an overview of techniques that really work. Their effectiveness has been documented in a number of literature reviews and meta-analyses that focused on students with WLD (Rogers & Graham, 2008), learning disabilities (e. g. Baker, Chard, Ketterlin-Geller, Apichatabutra, & Doabler, 2009; Cook & Bennett, 2014; Graham & Harris, 2003; Graham & Perin, 2007a; 2007b; Mason & Graham, 2008), attention-deficit/hyperactivity disorders (Cook & Bennett, 2014), intellectual disabilities (Joseph & Konrad, 2009), autism (Pennington & Delano, 2012), and other kinds of disabilities (Taft & Mason, 2011). Cook and Bennett (2014) point out that ... *SRSD programs were consistently found to be effective and evidence-based in both group design and single-case design research* (p. 345).

We thus now have a strong empirical base to inform high quality practice. However, the gap between research and implementation remains extraordinarily wide. Johnson and Semmelroth (2013) point out that, ... *while arguably no other content area in education has produced more instructional practice research than special education, the profession itself has made little progress in getting these instructional strategies into practice* (p. 71). What is true for special education in general is especially applicable to writing instruction. This defect has many reasons. One striking one was indicated earlier: Teachers are oftentimes very intimidated to tackle this task. They are rather skeptical as to their ability to make a difference as they strive to help students to become proficient writers (Troia & Graham, 2003).

Future efforts in accumulating empirical knowledge in this area should particularly focus on bridging the apparent research-practice gap. We know enough to break through the declining spiral of frustration, anxiety, and more failure that far too many low achieving writers experience every day. To achieve this, we believe that the following three research points have to be increasingly considered in the future:

(1) *Ways to change teachers' attitudes towards writing instruction.* Santangelo and Olinghouse (2009) make a strong case for this proposition. They rightly point out that ... *highly effective writing teachers not surprisingly are truly passionate about writing, and their classrooms are imbued with that belief ... They emphasize the value of writing and underscore that it can be difficult but also exciting and fun* (p. 2). The challenge now consists of identifying and testing options that can facilitate enthusiasm about teaching writing in educators. Text composition is a creative endeavor. How well a student performs in this area depends to a high degree on his or her self-efficacy (Sanders-Reio, Alexander, Reio Jr., & Newman, 2014). Even soothing background music has an advantageous effect on how well a boy or a girl is able to produce competent prose (Legutko & Trissler, 2012). Children and youth need a fear-free, relaxed, and encouraging atmosphere in order to be at their best when trying to creatively put their ideas into words. An instructor who radiates excitement and believes in his or her students is an indispensable factor in this structure of conditions. However, very few studies have so far been conducted to shed some light on the question of how such a positive attitude can be built up in teachers.

(2) *Ways to maximize the fidelity of expertly teaching writing skills.* Whether the aforementioned strategies to promote writing skills in students find their way into everyday practice depends heavily on teachers as implementers. As Fixen, Naoom, Blasé, Friedman, and Wallace (2005) rightly point out, ensuring that educators are provided with the support necessary to serve learners in a way that meets their needs is highly challenging. It is not sufficient to just instruct teachers once on how to apply different approaches. Mitchell (2014) calls attention to the fact that „... successful implementation of ... evidence-based strategies needs to be carefully planned and well-resourced, and requires changes at the practitioner, supervisory, and administrative support levels, as well as the system level (p. 2). All too often, teachers do not apply strategies with enough fidelity to the intervention model. They might be convinced that a certain approach really works and might be highly motivated to teach writing, but they frequently still do not put it to good use in their classrooms. Many need periodic reassurance on whether they are doing it *right*. They have to be provided with continuous supervision and opportunities for professional development to always furnish the best support under varying circumstances. However, we certainly need more implementation research that helps us to better understand what kind and what amount of support teachers need in order to actually apply effective strategies in everyday classroom life (Reinke, Herman, Stormont, Newcomer, & David, 2013).

(3) *Ways to involve students as teachers.* The application of some of the aforementioned interventions seems so simple that even fellow students should be able implement them with struggling classmates like it is done in the class-wide peer tutoring model (e. g. Maheady & Gard, 2010). Other forms of cooperative learning (like reciprocal peer tutoring) might also be useful in conveying effective writing skills. But we do not know much about whether these assumptions really hold water. In any case, research needs to focus on how instruction can be organized and delivered in a way that this demanding task becomes manageable for teachers. The fashion in which different approaches are described in empirical studies or even in textbooks is often not feasible for instructors who need to juggle a great amount of obligations and need to attend to a large number of students at once. More research is warranted that evaluates the use of different writing strategies under the conditions of everyday school life.

By pursuing these three research points, we will certainly be able to make a difference in providing a knowledge base for deciding how to reduce the greater number of students who fail in reaching their potential in life because of insufficient writing abilities. Overall, the approaches suggested in this paper may provide students the confidence, knowledge, and skills they need to succeed with writing across the life span.

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TEACHER VIEWS OF SUPPORT FOR INCLUSIVE EDUCATION IN BEIJING, CHINA**XU Xiaoli***University of Jyväskylä***MALINEN Olli-Pekka***Niilo Mäki Institute*

This study reports teachers' views and experiences about the support they receive for their teaching in inclusive classrooms focusing on support from families, resource teachers, and school leaders and administration. The results are based on 16 individual and focus group teacher interviews that were conducted in four different schools in Beijing municipality. The teachers identified the lack of family support as a major challenge for their work. Several teachers reported collaboration with resource teachers but the scope of that cooperation was quite limited. The teachers expressed satisfaction with the support from school leaders both directly and indirectly through opportunities for professional development. Despite receiving different forms of support the teachers expressed that it did not adequately address to the challenges they face when teaching inclusive class of learners.

Introduction

In mainland China, the first high-profile efforts to place children with disabilities in regular classrooms began in the 1980s (Deng & Zhu, 2007) even though there are anecdotes about individual cases of children with disabilities in mainstream schools already in earlier years (Deng & Zhu, 2007; Xu, 2012). In 1980s the Chinese educational legislation also became more supportive for inclusive education (Deng & Manset, 2000; Deng, Poon-Mcbrayer, & Farnsworth, 2001; Liu & Jiang, 2008; McCabe, 2003; Qian, 2003) and in the next decade the new policy of accepting children with disabilities in mainstream classes was given the name *Learning in Regular Classrooms* (LRC), or *suibanjiudu* in Chinese (Xu, 2012). There has been a vivid debate among Chinese scholars about the relationship between Chinese LRC and the Western notion of inclusive education (Deng & Zhu, 2007; Li, 2009; Liu & Jiang, 2008). As one aspect of this discussion some scholars have claimed a distinction between these two concepts (Malinen, 2013, p.21). Nevertheless, in this paper we use terms inclusive education and Learning in Regular Classrooms (LRC) interchangeably.

Currently there are many policies in the form of laws and regulations at the national, municipal level as well as district level, with purpose to support, instruct and promote the development of inclusive education in regular

Chinese schools. However, these policies often exist only as written documents and are not necessarily even known by the public. Another problem concerning these documents guiding the administration of inclusive education is that they contain a lot of soft words instead of hard regulations. Also in terms of the funding allocation, inclusive regular schools have received much less money than separate special education schools. (Peng, 2014)

With the adoption of inclusive education teaching can become considerably more multifaceted with greater responsibility being devolved to schools and individual teachers (Forlin & Forlin, 1996). Regular teachers in inclusive classrooms are confronted with various challenges and they need support to facilitate their work. A few Chinese empirical studies have investigated the support that teachers receive for their work in inclusive schools. One of the latest of these studies was a survey research by Wang, Wang, Cheng and Wang (2013) that was conducted among teachers of inclusive schools in Beijing. Their survey provided valuable information about the categories of support available for the teachers. Nevertheless, there is still need for studies that give a voice for teachers themselves to describe how these different forms of support are manifested in their daily work. This paper aims to address this need by reporting findings based on 16 individual and focus group interviews in four different inclusive schools in Beijing municipality. We concentrate on teachers' views and experiences about the support they receive from families, resource teachers, and school leaders for implementing inclusive education in their schools.

Method

Participants

The findings of this paper are based on interviews that were conducted by the other author and two local research assistants including between March 23 and April 12, 2012. The interview data was collected as part of an international comparative research project that studies teacher's roles in inclusive education in several different countries (Savolainen et al., 2012). The interviews took place in four inclusive schools located in four different administrative regions of Beijing Municipality. School A is a primary school located in Y County and about two thirds of its students are holding rural or non-local household residence permit (hùkǒu). School B is a secondary school located in H District. School C is a primary school located in X District. School D is a primary school located in S District, which is a new development area that is located relatively far from the city center. It is also worth mentioning that School D is located near a welfare house (fúliyuán) where many of its students are from. Therefore School D has quite high ratio of special education/regular students. It is worth mentioning that the four participating schools and their teachers do not necessarily represent typical inclusive school in Beijing. All participating schools had established contacts of the Beijing Municipal Special Education Center, which makes it likely that they were more experienced with implementing inclusive education than average Beijing school. This selection of schools was intentional since the target was to secure a rich-enough interview data for our analysis.

In total, 20 teachers participated on the study. The teacher participants vary in gender, age, teaching experience and experience of working with students with disabilities. The participants' experience varied from half a year to thirty-one years. Majority of the teachers are females. The subjects that they taught include Chinese, English, mathematics, science, calligraphy, psychology and painting. Two of them worked as resource teachers, responsible for operating resource room in their schools. Resource room (zīyuánjiàoshì) is a specially designed classroom that is used to provide individualized support for students with disabilities in regular schools (Yang & Xu, 2004) Both of them are only resource teachers in their schools. One of them has academic background in applied psychology while the other resource teacher does not have academic background in relevant fields.

In each school, three individual interviews and one focus group interview with a group of four teachers were conducted. This resulted into 16 separate interview recordings that had a total length little over 8 hours. Before the analysis the recordings were transcribed into Chinese writing by the same research assistants that were present in all the interviews. The transcription resulted in 135 pages of text that contain over 150 000 Chinese characters. The transcriptions have not been translated to any other language.

The interviews followed a semi-structured framework with questions dealing with participants' experiences and views related to implementing inclusive education in their schools. During the interviews the participants were encouraged to talk about their experiences through using open-ended questions and by asking follow-up questions based on their responses. The flexible nature of the interviews aimed to encourage depth and vitality and to allow new concepts to emerge (Dearnley, 2005). The interviews were carried out during school days at the participants' schools with the aim of saving them from transportation and other additional trouble. Each school provided a separate meeting room for the interviews to ensure the privacy of the interviews.

Three ethical principles guided the research. These principles informed by House (1990) were: 1) Mutual respect – understanding others’ aims and interests, not damaging self-esteem, and not being condescending; 2) Non-coercion and non-manipulation –not using force or threats or leading others to co-operate when it is against their interests; 3) Support for democratic values and institutions –commitment to equality and liberty. The participants were informed about the purpose of the interviews and that the data would be used for academic research purposes. In each school a permission to conduct the data collection was gained from a relevant school administrator. When reporting the results measures are taken to confirm the anonymity and confidentiality of the participants.

The data analysis began by categorizing the text in the interview transcriptions under certain themes such as teachers’ actions in inclusive classes, challenges teachers were facing and the availability of support for teachers. In this paper we will concentrate on teachers’ views of the support they receive for their work in inclusive schools. The interviews covered many different sources of support including nearby special education schools, regular peers of students with disabilities and other regular teachers. In this study, however, we focus on the support that originates from three different groups of actors which are 1) families 2) resource teachers, and 3) school leaders.

Results

Family support

It is clear that parents have a very important role on their child’s education. This is particularly true in the case of students with disabilities and other special educational needs whose schooling often requires more active family involvement. One key element of supporting this involvement is smooth communication between teachers and parents or other caregivers.

Chinese teachers generally raise many requirements on parents. Parents are asked to supervise children’s homework: to check that required quantity of homework is completed, requirements are achieved and texts are recited, to give children dictation at home and to sign in children’s homework (indicating that all the homework has finished). If possible, parents are also asked to tutor their children’s study at home. Many interviewed teachers mentioned parents’ insufficient involvement in their Children’s studies as support from parents as one major obstacle of their work. The lack of parental support is particularly obvious for teachers in School D where many students are from the nearby welfare house. *Of course we cannot require the teachers in welfare house to tutor these kids’ homework like parents because one teacher there has to take care of several children*, a teacher from School D said.

Both family and school have expectations on each other. Difficulties emerge when these expectations contradict. According to Huang (2001), Chinese schools are concentrating on academic education with the emphasis on students’ scores and enrolment rate to further education. In Chinese context schools often perceive themselves as the core providers of education and want parents to follow their orders thus extending class activities to the sphere of family life. The purpose of having parent-teacher conference is often not hearing parents’ *precious comments*, but raising demands on parents and putting pressure on them to support their child’s academic performance. On the other hand, some Chinese parents may actively seek to transfer their own educational responsibilities to schools comments like: *One sentence of teacher is much better than a hundred sentences of mine* (Huang, 2001, p. 25).

The contradictions between teachers and parents were discussed extensively in the interviews. A teacher from School C described the issue as *it makes my head ache the most*. Some teachers mentioned that the low level of parents’ own educational background as a major challenge of their work in inclusive class. *In my class, two kids’ mothers are illiterate, and some parents are not able to sign their own names*, one teacher from School C disclosed. Teachers in School A, even though acknowledging that the parents in general value education, told that parents’ low academic knowledge affects their Children’s academic performance: *Parents cannot do well in tutoring homework at home*. Some parents’ tendency to transfer educational responsibility from the family to school was also presented in the interviews. One teacher complained: *He (a parent) just pushes all the responsibility to teachers and takes it as granted, this is really hard for us to communicate, our education cannot get response from family education*.

The teachers also came up with some practical suggestions how to help parents with low educational qualifications to support their children’s schooling. One such suggestion came from a School C teacher who said: *We need organize training on parents . . . circulate homework of good practice among parents so that parents would know . . . how to make requirement on their own kid*.

While the interviewed teachers saw the communication with parents with low educational and socio-economic background as a challenge, some found parents with high educational qualifications even harder to interact with. *They think their theoretic level is high, and what I said has already been understood by them, these parents with*

high educational qualification usually respond to us with silence, a teacher from School C complained and shared a story about a boy student whose father is a PhD at a well-respected national research institute. Once in a painting class when another student had touched the boy by accident the boy revenged it by painting the student's whole bag. Soon the boy himself realized his offense and apologized. Afterwards, when the student told his parents about ruining the fellow student's bag the parent(s) only comment was: *just compensate (with money)*. Another teacher commented the incident:

He just wanted to solve the (immediate) problem rather than prevent (underlying) problems. He just thought that if (the child) ruin something he will pay .He would not think how to do next, would not think how to prevent such startling occurrences.

Teachers themselves also realized that the collaboration with parents is a major challenge, particularly with parents of students with special needs. Better academic performance and higher scores are in the common interest of teachers and parents thus possessing a potential to smoothen contradictions. *When they see their children's scores improve, they realize what they did (collaborate with teachers) is good for their children*, one teacher described this phenomenon.

A teacher from School D shared a story of successful family-school collaboration in providing socio-emotional support:

There is a kid in my class, tall and handsome. But he was always being timid and dared not to answer questions in class. . . I visited his home and got to know his living situation. His mother said that he wasn't good at communicating with his stepfather . . . we decided to cooperate and help the kid develop his self-confidence. At home, his stepfather tried to communicate with him and play with him. At school, I entrusted him to organize class activities and encouraged him to play with other kids. Gradually he is more and more brave and his academic performance improved a lot.

Modern communication tools have potential to smoothen interaction between families and schools. In addition to more traditional ways like face-to-face meeting and phone calls, the interviewed teacher utilized a range of other channels to stay in contact with the students' caregivers. School A had adopted a system called *Home-school interaction (Ji Xiaohudong)* to facilitate the communication between teachers and parents. School D utilized a same type of service called *Home-school communication (Ji Xiaotong)* and School C was using *Fetion (Feixin)* instant messaging service in communication with parents. All these communication platforms allow teachers and parents to communicate via SMS. Teachers using the platform can send messages to a group of parents or carry out individual communication with one parent. School A teachers who discussed about the *Home-school interaction* platform saw it as a very useful tool that they use frequently for day-to-day communication with the families. One teacher saw it as narrowing the distance between the school and the parents who do not otherwise have time to discuss with them. Previously, many Chinese schools did not have a systemic and effective method to reach and communicate with students' parents. Even in areas with stable internet connection, email is not commonly used as a priority communication method. Many Chinese people do not even have an email address. Instead, mobile phone is ubiquitous in China. Phone call and SMS are probably the most effective ways to reach people and spread notification. It appears that our interview Schools had recognized the importance of support from parents and made efforts to smooth the cooperation between schools and families. The schools had adopted communication methods that would easily accessible to the parents, many of whom were migrant workers with long work hours.

Support from resource teacher

When implementing inclusive education in regular classrooms, teachers are confronted with various problems that require many types of support. Resource teachers and resource rooms are one emerging form of support services in regular Chinese schools.

Article 19 of *Trial Measures on LRC Work of Disabled Children and Adolescents* (State Education Commission, 1994), stipulates specific regulations on resource room and resource teacher. It requires that primary schools in counties and towns with adequate conditions or with an extensive population of students with disabilities should gradually establish resource room, and equip it with necessary teaching tools, learning tools, rehabilitation equipment and literature material. In addition, full-time or part-time resource teachers should be assigned to operate the mentoring room and the mentoring teachers should receive professional training for special education.

In Beijing Municipality the first resource room was established in 1997 to a primary school in Xuanwu District (Sun, 2013). More established policy of setting up of resource rooms in Beijing Municipality started in the period of

the *tenth five-year plan* (years 2001–2005) when the municipal commission of education invested to build resource rooms in 20 chosen inclusive schools (Yang & Xu, 2004). Lately, the policy of establishing resource rooms has also taken root at the national level. The *Promotion plan for special education (2014 -2016)* includes improving conditions for running schools as a main measure to improve special education. The plan stipulates government to support and undertake building resource room in regular schools with a relatively big number of students with disabilities studying under the LRC model (Ministry of Education, 2014). Among the four Beijing schools where the interviews were conducted at least three had set up resource rooms. School B had a resource room, with three full-time resource teachers; School C had a resource room with a part-time resource teacher, and School D had a resource room with a part-time resource teacher.

Although the interviewed schools had resource rooms set up, one cannot forget the highly unequal distribution of educational resources in China. Resource rooms are more common in wealthy regions like Beijing, Shanghai and Zhejiang Province, while in poorer areas, establishing resource rooms is not yet in the agenda. Even in Beijing, reminded a teacher from School D, resource rooms are not available for every inclusive school: *Our resource room was established in 2008, arranged by District Special Education Center . . . because our school is near to a welfare house, the center gave us the priority.* Statistics support the claim. In 2012 when the interviews were conducted the Beijing Municipality schools had 148 resources rooms which was much less than the total number (1091) of inclusive schools (Sun, 2013).

Resource rooms are mainly targeted for students with more severe disabilities who are officially registered as Learning in Regular Classroom students but they can also be used to cater for the needs with specific learning disabilities, behavior problems or psychological problems. Concerning the use of resource room for these other groups of student with special needs a teacher from School B disclosed:

Nowadays the work of mentoring student with disabilities studying under Learning in Regular Classroom model and psychological health education is in fact mingled together. Therefore, the function of resource class is not only mentoring some students with disabilities studying under LRC model, but also to address the psychological problems of some regular students by providing psychological counselling and instruction.

On the other hand, there are limits to which groups of students with special needs receive support in resource rooms. For example teacher from School C told that at least in their school resource room is not a place for student with behavior problems: *Normally students with behavior problems are not willing to go to resource room, if they don't want to go there, we teachers cannot force them.*

In addition to managing the resource room resource teachers have a consultative role of supporting the regular teacher's work. *When I am really busy and have no time to solve the problem or the problem is worth researching I would ask her to discuss the problem with me and do some research together,* a teacher from School D disclosed. School D, was in a fortunate situation to have Ms. L. who has an academic background in psychology working as their part-time resource teacher. Unfortunately such a support is not equally available in many other Beijing schools. Wang and others (2013) who conducted a survey among 1703 inclusive Beijing teachers found out that guidance from professionals in special education or other relevant fields was the least available form of support for the teachers.

In School D, Ms. L. who was a part-time resource teacher described her work in the resource room with the following words:

Currently there are five to six students participating activities in resource room regularly and there are some other students coming to resource room irregularly. There are some students from the welfare house, and they have relatively severe impairments both psychologically and physically so they would come to me every week. Generally I will arrange five to six students as a group and do group training. If class teacher reflects to me that some student is having a problem, I will have a private communication with the student.

Ms. L. did not see her role as a resource teacher solely as helping students with their academics. She viewed boosting the psychological well-being of students with disabilities perhaps even more important function of resource teacher. Ms. L. described this aspect of teaching in resource room by saying:

Resource room provides them (students with special needs) with a place, a space. We bring special kids into regular school and hope that they can grow up like regular kids. However, they clearly know that they are special. While in a resource room, they can think that they are equal with other people here, because here everyone is a child with special educational needs . . . when they come here, they regard themselves as alike, as equal. So I think that resource room . . . brings them psychological relief. It makes them truly realize that there are people who care about me . . . sometimes, they are quite proud of it, saying ‘I have activity on Thursday, I can come but you (other students) can’t’. Perhaps there is a gap between them and regular students in academic performance, but resource room is a good place for building their self-efficacy and self-confidence.

In China it is common for resource teachers to hold more than one position in inclusive schools. In 2012 Beijing schools had 218 resource teachers but only 52 of them were working as fulltime resource teachers (Sun, 2013). In addition to the work in resource room, resource teachers are often subject teachers in regular classes. Resource teachers have to do also administrative work, prepare materials, write reports, and participate in professional development. Since large proportion of the resource teachers’ time is spent in other activities they are not able to reach all students’ special educational needs. The lack of time devoted to actual resource teacher work was identified as a major problem already some decade ago (Yang & Xu, 2004) but the problem has persisted (Sun, 2013).

Lack of professional knowledge of resource teachers is identified as another major difficulty for the development of resource rooms. Some regional governments, including Beijing, have allocated money to set up well equipped resource rooms. The problem of finding appropriately trained resource teachers has remained as a bottleneck for fully utilizing this newly built infrastructure (Peng, 2014). Even in Beijing most resource teachers do not have a degree in special education (Sun, 2013). In the interview schools, professional development was used to compensate the resource teachers’ lack of initial qualifications. For example Ms. D, who had been working in School C for 22 years and was in charge of the resource room at her school, received one-to-one instruction from an expert assigned by the Special Education Center of X District.

Support from school leaders

Higher salaries would be one concrete way for the school leaders to encourage inclusive teachers’ work. In 1994 Article 24 of the *Trial Measures on LRC Work of Disabled Children and Adolescents* (State Education Commission, 1994) stipulated that local educational authorities and schools should take measures to remunerate teachers for working in inclusive classes, so to encourage teachers’ positive participation in Learning in Regular Classroom work. Although this article was adopted over two decades ago in a major national policy paper for inclusive education, many teachers working in inclusive classes have not received any remuneration for their extra work. It is common that inclusive teachers get the same payment as regular teachers who do not have to take care of children with special educational needs. This was the situation also in School A. According to their teachers there was no extra remuneration for teachers working in inclusive classes. Instead of monetary incentives the leaders encouraged teachers to work for inclusive education by appealing to their spirit of devotion.

The interviewed inclusive school teachers may not receive financial rewards from the efforts but they reported receiving lot of support from their school leaders and administrators. According to the teachers from School B they could go to school leaders when a problem occurred: *Sometimes I go to Director L who is responsible for the Department of Junior High and sometimes I can even go to the principal to reflect my problem.* The teacher also saw practical value in these visits: *They usually have a more comprehensive perspective to view the problem and can offer me some suggestions thus I can adjust my own working conditions as soon as possible.*

It is possible that the teachers’ praise of support they receive from the school leaders and administrators is at least partly motivated by the desire to portray their superiors in a positive light to outside researcher. Whatever the case, other Beijing based researchers have also found that the teacher evaluate positively the support that school administrators provide for their work in inclusive classroom (Wang et al., 2013).

Another way in which the administration supported teachers work was to organize in-service training in issues related to teaching in inclusive classrooms. According to our informants, all of them had experience in receiving in-service training arranged by schools, district education commission or municipal commission of education in the

form of seminars, workshops, demonstration lessons in special education or inclusive classroom setting.

It is very common to have training opportunities in our school, there are trainings about general teaching, subject teaching, moral education, and many other themes, there is also some training for Learning in Regular Classroom, teachers from School A disclosed. The training related to inclusive education was arranged either internal training or externally. The internal training in School A was organized by the school itself, and external training was organized by district commission of education or municipal commission of education, usually in the form of demonstration lessons and seminars. When asked about the frequency of training in School A, the answer was *not regularly scheduled*.

One teacher from School A had participated two trainings for inclusive education last year. The internal training was delivered by the school's Dean of teaching affair office and the external training included a field visit to other inclusive schools. Another teacher from School A told that in previous two years she had attended several trainings of municipal level. In general, the informants expressed that the trainings had been helpful and they would be willing to participate them. Through the training they had learned much about theories of inclusive education. When it comes to training in particular teaching methods one teacher expressed her wish that: *We should have more opportunities to see how other teachers do in class, we need to exchange experience and learn from each other.* Concerning the organizer of the training she preferred training which was *at least Beijing municipal level*, or even on national level since *there are multiple forms of inclusive teaching and every area differs from each other.* Another teacher expressed a wish for international training: *Actually I want to know how inclusive education is operated in foreign countries.*

School B is located within the administrative region of H District, which has specific policy concerning inclusive education in its twelfth five-year educational development plan. A teacher from School B disclosed that in order to implement the District policy of improving the quality of LRC, trainings had been arranged at different levels. H District Teachers Training College was providing trainings for teachers once a week with inclusive education among the training themes. This weekly training was compulsory for the teachers. Other district and municipal level trainings had various topics and targets. Some were organized for more accomplished teachers while other some targeted schools with relatively weak teaching quality. School B had also regularly scheduled internal training. Experts were invited to conduct this training and facilitate teachers' exchange of experiences. A teacher from School B described one such training:

Last semester, we had training on teaching in inclusive classes, both class teachers and subject teachers teaching in inclusive classes participated. We spent two weeks in training, discussing about how to prepare teaching plan and how to teach in class. Every teacher shared their teaching plans and experts were invited to help us optimize our teaching plans. At the end we selected Teacher W to be the representative of our school to give a demonstration lesson in Beijing Municipality.

In School C the teachers were receiving training for inclusive education from the Beijing municipal special education center, X District special education center and from their own school. A teacher from School C shared that *Learning in Regular Classroom is the specialty of our school so the school is paying high attention . . . and the special education centers are specially organizing trainings for us.* Teacher L who specialized in inclusive education in School C told that *this semester I participated in Learning in Regular Classroom district level activity . . . The activity was observing demonstration lessons and giving comments. We also listened to other schools' working experience on Learning in Regular Classroom.* Teacher L found that this kind of training fruitful since *they are actual and concrete lessons given in inclusive classrooms I learned from their experience and I learned some practical teaching methods from them.* School C was also organizing internal training for teachers in inclusive classes. Much of this training was organized by the resource teacher and school leaders. In addition the school had invited a principal from a special education school train the teachers how to teach and take care of students with special educational needs.

There was also common professional development for the resource teachers working in different schools. Ms. L, the resource teacher in School D, described her own experiences in resource teachers' professional development:

We have regular activity for resource teachers every Wednesday. Resource teachers from different schools gather together, communicate and exchange ideas. For example, if I know one teacher who is very good at

individual training, I can go observe her lesson.

Another regular teacher from School D expressed a wish that special education school would assign special education experts to school D to give them more demonstration lessons and conduct workshops. Unfortunately such opportunities were not frequent. *There seems to be only one this kind of demonstration lesson on LRC in every two to three years*, another teacher in School D added.

According to the interviews teachers in four inclusive schools participated in all kind of in-service training in school, district as well as municipal level on varying themes. Some training was compulsory for all teachers while other training could have specific access requirements for participants. The training for special education, inclusive education was often provided by special education schools and special education centers of their respective administrative regions. Due to the lack of pre-service training for special education and inclusive education, the teachers expected to have more professional development in these issues training. The expectations concerning the content of the training varied. Some teachers wanted to have more training on theories in inclusive education, while others wished to have more training on practical teaching methods for inclusive classes.

Discussion and Conclusions

We began this paper with a short introduction of the overall situation of inclusive education in Beijing Municipality but at the heart of this research are the stories, experiences and views of teachers of Beijing inclusive classes. The current study provides teachers' themselves a voice to reflect their daily work in inclusive schools. This type of approach has been very rare in the English language literature on inclusive education in China, with only a few exceptions (e.g. Feng, 2010). At the same time one must acknowledge that this study does not reflect the situation of inclusive teachers' in entire Beijing, let alone whole China. Further studies have to be conducted to capture the variation of inclusive teachers' voices around China.

The interviewed teachers identified family support or more specifically the lack of it as one major challenge for their work in inclusive classes. Although the teachers and schools had made considerable efforts to facilitate the cooperation with students' families the teachers complained that some parents' low educational attainment made it difficult to collaborate with them successfully. Somewhat surprisingly, there were also teachers who found even more dilemmas when communicating with parents who have high academic qualifications and socioeconomic background. Teachers felt that they could not get a proper response from the parents and found it energy-consuming to deal with parental/family issues. Two teachers even specifically identified interaction with families as the most challenging aspect of their work in inclusive classes. This finding resonates with the earlier results of Engelbrecht, Oswald, Swart and Eloff (2003) who found the family issues to be major stressors also for inclusive teachers in South Africa. On the other hand, there may be cultural differences, since Forlin (2001) who studied teachers in Queensland Australia found collaboration with parents to be among the least stressful aspects of teachers' work during inclusive education.

The interviewed teachers received some support also from resource teachers who manage the resource rooms in their schools. The regular teachers valued the resource teacher model but the resource teachers' actual role in their daily work was quite small. This is understandable since the availability of support from resource teachers in is still very limited even in the wealthier regions of China. In Beijing, which was the site of this study most inclusive schools do not have resource at all teachers, most resource teachers do their work only part-time, and most resource teachers are not adequately trained for their job.

Considering the general lack of specific funding for inclusive education in Chinese general schools it can be surprising that the teachers' reported many different forms of support they receive from their school and district administrators. According to the teachers, their received direct support and encouragement from school leaders and they gave quite positive comments on their leaders' work. Naturally, this sort of praise of school leaders has to be taken with precaution since the interviewees may have been motivated to present their supervisors in a positive light for outside researchers. To decrease this tendency we tried to assure the interviewees about the confidentiality of the interviews and conduct the interviews in places where outside persons could not hear the discussion. Our impression is that most people felt free to respond to the questions and share stories of both success and failure. Perhaps, they felt that they could talk openly for outsiders who possessed no authority to discipline them from criticism and unorthodox thinking.

The teachers also had gained support from professional development that was organized by different levels of educational administration. Almost all teachers expressed a wish to receive more training on themes related to inclusive education. It is possible that this wish is at least partly motivated by the need to give socially desirable answers. In Chinese school context there are also concrete incentives to participate in professional development since it helps to climb the career ladders in the teacher ranking system.

To sum up, the interviewed inclusive education teachers in Beijing municipality had many different sources of support, some of which are not discussed in detail in the scope of this study. Nevertheless one must emphasize that the amount of support was not yet adequate. Forlin (2001) recognized that teachers tend to worry that they cannot master progress inside inclusive classrooms. During the interviews teachers expressed often feeling overloaded by their work in teaching inclusive class and were sometimes helpless and worried about how to proceed with their work.

It is quite disturbing that this kind of sentiment of teacher helplessness can be found from Beijing schools with better resources and greater access to different support organizations than the vast majority of Chinese schools. The situation clearly demands concrete actions like increasing dramatically the training of resource teachers and assigning a specific budget to finance the inclusive education as many scholars (e.g. Peng, 2012; Fei, 2007) have demanded. It is clear that much more has to be done before Chinese teachers can feel confident to meet the challenge of inclusive education.

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“TRY TO DO THE BEST YOU CAN”: HOW PRE-SERVICE APE SPECIALISTS EXPERIENCE TEACHING STUDENTS WITH AUTISM SPECTRUM DISORDER

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Children with autism spectrum disorders (ASD) present an exceptional need for varied instruction within the physical education environment. Adapted physical educators need to be prepared to make a significant amount of choices in regards to adaptations and modifications given the situations they may encounter with their students. However, many pre-service adapted physical education (APE) specialists may be unprepared to address the unique challenges faced with children with ASD's ever increasing presence in the classroom. This study involved interviews and observations of four pre-service APE specialists who were working one-on-one with a child with ASD during a practicum. In this analysis four factors, 1) physical environment, 2) instructional strategies, 3) behavioral issues, and 4) personal discernment, surfaced as major influences in the decision making of the pre-service teacher. This analysis looks to build a foundational understanding of how this relationship exists in the APE setting with children with ASD. This study reveals that pre-service teacher have limited knowledge which leads to an inability to make important instructional decisions and overcome barriers that arise with children with ASD. Teacher-training programs should address these concerns in order to build confident and successful teachers.

Introduction

Adapted Physical Education (APE) at its core, is physical education that has been adapted or modified, so that it is as appropriate for an individual with a disability as it is for an individual without a disability (Kelly, 2006). Furthermore, by definition, an APE specialist is a physical educator who provides direct services, e.g. teaching individuals with disabilities, and indirect services, e.g. assisting a general physical educator in modifying or adapting curriculum to fit the needs of children with disability in the least restrictive environment (Kudláček, Ješina, Štěrbová, & Sherrill, 2008; Sherrill, 1998). However, what is lacking is a consensus of a definitive, unified understanding of what a highly qualified teacher-training program needs to contain. An APE specialist, in approximately 16 states in the US (Wright & Wright, 2011), is required to hold certification above and beyond that of a GPE teaching certificate to teach individuals with disabilities outside of GPE. Lavay, Guthrie, and Henderson (2014), in an analysis of behavior management training and teaching practices among nationally certified adapted physical education (CAPE) teachers, revealed a majority (78%) had a master's degree, however, the amount of dedicated APE course work during various undergraduate and graduate degree programs greatly varied. Of the participants surveyed, 69% had taken 10 APE specific courses or less (Lavay et al., 2014). This evidence suggests a great deal of variability among APE professionals and accrediting programs; demonstrating a need for a better

understanding of the needs of APE specialists, in order to provide the appropriate coursework and practicum experiences to best prepare them for the teaching environment.

To best improve the future of the APE field, the factors influencing the perceptions and abilities of pre-service teachers (e.g. those who are still training in school or student teaching) must be better understood, so that changes within the teacher preparation programs can be made in order to better prepare future teachers. Graber (1995) demonstrated pre-service teachers have a greater difficulty incorporating content knowledge into lessons due, largely, to a lack of subject area competence, inability of the pre-service teacher to combine subject area expertise with appropriate teaching strategies, and a lack of knowledge about appropriate teaching progressions. With the need for APE specialists to understand a variety of content-based knowledge (Lavay et al., 2014), it is not surprising that there is a difficulty in incorporating content knowledge into daily lessons.

Ingersoll, Jenkins, and Lux (2014), recommend that physical education teacher education (PETE) programs can maximize knowledge development for pre-service teachers by structuring practicum experiences allowing for longer units and repeated units. By doing so, pre-service teachers will be more inclined to develop effective strategies in teaching, not on the rote knowledge needed for each changing unit. Stroot and Oslin (1993) similarly found that pre-service teachers provided evidence of content knowledge, but showed a limited ability to apply this knowledge when providing feedback. Ward, Kim, Ko, & LI (2015) in the efficacy of a content knowledge workshop, revealed a significant effect size (> 2.0) in teacher's pedagogical content knowledge, which in turn can have a meaningful impact on student learning. While, Ward and colleagues (2014) demonstrated this effect on in-service teachers, the necessity for future interventions can be diminished by properly preparing teachers to enter the profession. Pre-service teachers need guided practicum experience teacher-training programs need to provide opportunities to practice utilizing content knowledge in a realistic, but not altogether discouraging preview of what will occur when starting in the profession (Connolly, 1994; Graber, 1995; Jeong, 2013). Providing practicum situations where pre-service teachers can build knowledge through successful teaching experiences will go a long way to building confidence and prepare future teachers for what they will encounter as first year teachers (Morgan, 2008).

Effective teacher training becomes even more important when considering children with disabilities, especially those with autism spectrum disorder (ASD). According to the CDC (2014), currently 1 in 68 third grade students in the United States has ASD. Children with ASD are rapidly becoming a large portion within our population as a whole and are becoming an even greater number among individuals with disabilities. Global rates of ASD vary based on report and culture (Al-Farsi, et al., 2011; Parner, et al., 2011; Paula, Ribeiro, Fombonne, & Mercandante, 2011), however, it is clear that these children are in the classroom and the lack of knowledge and understanding of the disorder can cause a great deal of stress for both the teacher and the student. The American Psychiatric Association in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), clinically defines ASD by a deficit in reciprocal social interaction and pragmatic communication, as well as high rates of repetitive behavior (2013), which pose very unique challenges within the physical education setting due to limited ability to utilize instruction and hyper- or hypo-sensory needs (Obrusnikova & Dillon, 2011). In addition to social/communicative deficits and repetitive behavior, children with ASD have also demonstrated motor delays (Bhat, Landa, & Galloway, 2011; Liu & Breslin, 2013; MacDonald, Lord, & Ulrich, 2014; Staples & Reid, 2010). Moreover, there is a great need for APE and GPE teachers to understand the behaviors and limitation of children with ASD, so that they can be better prepared to adapt and modify instruction. However, the current instruction for physical educators in APE is not designed to provide them the opportunities and experience with dealing with behavior management (Kudláček, Ješina, Šterbová, & Sherrill, 2008; Lavay, et.al., 2015; Piletic & Davis, 2010). In order to better identify what changes need to be made, the influences facing an APE specialist needs to be better understood.

Young (2012) in an examination of pre-service physical education teachers concerns during early field experiences, demonstrated that within three teaching episodes (one lesson taught each week for three consecutive weeks) a significant shift from self concerning behaviors (i.e., anxiety, feeling under-prepared) to impact behaviors (i.e., Are students moving most of the time? Are students able to play the game successfully, etc.). This result demonstrates the necessity for pre-service teachers to have practical field experience teaching prior to graduation. Furthermore, this demonstrates strong evidence for ensuring students have experience with children with disabilities as well. However, this study takes into account one aspect (personal beliefs) of what is affecting the pre-service teacher's effectiveness.

Martin and Kulinna (2005) investigated the relationship of a teacher's intent and their effectiveness toward reaching that goal revealed that while teachers were 'pro' physical activity, health and fitness, they spent a majority of time (72%) on instruction and management and only 4% of time on promoting or demonstrating fitness concepts. Consequently, students spent a great deal of time (61%) either standing, sitting, or laying down (Martin & Kulinna, 2005). Without the necessary experience to create a structured learning environment, teachers will not be able to focus instruction on skills and activity, instead focusing on management, especially when considering the unique needs and challenges when working with children with ASD.

When considering the varied education, in regards to children with ASD, while teachers may have the best intents for teaching skills, if they are not given the necessary understanding the behaviors they will encounter or how to counteract them, much of their instruction will focus on management. In a recent analysis of APE specialist preparation regarding children with ASD (Healy, Block, & Judge, in press), only 48% of respondents were satisfied with how they were prepared by their graduate institution. Healy and colleagues (in press) recommend teacher-training programs add a specific course focused on ASD, but highlight the limited knowledge from university faculty to implement such a course. Clearly, with an already limited curricular experience with individuals with disabilities, the chance for gain knowledge about ASD is also limited. As this is a growing population within the school environment, future teachers need to have the knowledge and experience in order to be successful in the classroom; however, in order to understand what is necessary to include in course content, the factors that influence the decisions made in the classroom must also be understood.

Social Cognitive Theory

To best prepare future teachers for the physical education field a clear and focused education of coursework and practicum experiences are necessary to build foundational knowledge and efficacy within that content (Hardin, 2005; Taliaferro, Hammond, & Wyant, 2015). However, what is unknown is just how or what factors are affecting novice adapted physical education teachers when working with children with ASD; without knowledge of what factors to address, content for coursework is build blindly to address 'potential' issues based on understands from work with other children and disabilities or modified from what is seen in the general education or special education classroom. Bandura's Social Cognitive Theory (SCT) (1986) provides a theoretical understanding of how the relationship of individual and the environment should look like. SCT proposes that individuals are not driven solely by internal forces or the environment (Martin & Kulinna, 2005), but by a dynamic relationship between people and their environments (McAlister, Perry, & Parcel, 2008).

Additionally, SCT holds the belief that individuals exert a tremendous amount of control on how they interact with environmental influences and past experiences in being able to anticipate outcomes, engage in reflective thought, and self-regulate their own behavior (Martin & Kulinna, 2005), however an individual's self-efficacy plays a primary role in the decision making process (Bandura, 1977; 1997). In understanding how different influences affect pre-service teachers and their efficacy toward working with children with ASD, teacher-training programs can be enlisted to ensure that experiences are provided to build a pre-service teachers knowledge and efficacy with factors they will likely encounter as novice teachers. By understanding the influences affecting APE specialists, programs can be designed to give pre-service teachers systematic experiences in order to build content knowledge, as well as the efficacy to teach that content.

Purpose

To effectively investigate this phenomenon within pre-service teachers when working with children with ASD, the purpose of this study is to understand: 1) What factors influence pre-service APE specialist's self-efficacy when teaching individuals with ASD?, 2) What is the APE specialist's perception of his/her own utilized teaching strategies?, and 3) How does the relationship of the teacher and environment influence the pre-service teacher's self-efficacy of his/her own teaching practice?

Method

In order to best approach the research questions a mix of ethnographic interviews and observations were utilized, as the nature of this study was very inductive. This type of inquiry is particularly useful when researchers are interested in the experience of an individual within a naturalistic setting (Connolly, 1994). To better understand how an individual experiences a given topic, interviews and observations can provide insight into these experiences (Brinkmann & Kvale, 2015) because that person's *voice* is important (Siedman, 1998). By allowing experiences and, subsequently, themes to emerge from within the data, the researcher was able to induce a better understanding of the

influences that have an affect on pre-service APE specialists when teaching children with ASD. In the following sections, the researcher describes the steps taken to ensure the trustworthiness (e.g. the credibility, transferability, dependability, and confirmability) of the analysis and the findings according to Lincoln & Guba (1985). Prior to conducting the study, IRB approval of the protocol and site approval was received. All participants were informed of their rights and the precautions taken to ensure their anonymity. As the researcher was acting purely as an observer and no specific child information is included in the analysis, child assent was not needed. However, parents were made aware of the presence of the researcher in the environment and the study's aims; parents were given the right to have their child excluded from observation, but no parent elected to remove their child.

Participants

A purposeful sample of 4 pre-service APE master's students, 1 male and 3 females, was chosen for participation in this study. Participants were between the ages of 22-24 and had a background in physical education (e.g. a bachelor's degree in a physical education or related field). All participants had previous experience with student teaching in GPE, but none had ever been formally employed as a physical educator. All had limited to no experience with teaching APE prior to beginning their master's training program; none of the students had a direct experience prior to the master's program working with children with ASD. Participants were specifically recruited because they worked with at least one child with ASD in their practicum placement and for their desire to become an APE specialist after graduation from the Master's program. To retain their anonymity, all participants are here referred to by a pseudonym.

Derek is a 23 year-old male from the New England area. The year prior to beginning the master's program and practicum experience, he graduated with a bachelor's degree focusing in physical education with a concentration in APE (12 total credit hours). During his undergraduate experience, he worked with individuals in a fitness center, as well as at an aquatics center. Individual disabilities varied greatly from physical to cognitive, but Derek had no direct work with an individual with ASD during any of his experiences. After graduation from the master's program, Derek expected to get a job as a GPE or APE specialist, but was leaning more toward APE.

Samantha is 22 year-old female, also from the New England area. She entered the master's program with a bachelor's degree, majoring in physical education with no minors. During her undergraduate experience, she had 18 total working hours with individuals with disabilities. The focus was a community-based motor skill program and worked on functional skills with its participants. No one in this program was clinically diagnosed with Autism or ASD. After finishing the master's program, Samantha wanted to get a GPE or APE job back in her home state, as she was certified in that state through her undergraduate program.

Lyndsey is a 22 year-old female from a mid-Atlantic state. Upon entering her master's degree studies, she has a bachelor's degree in kinesiology with a concentration in physical education with an minor in APE. Of the participants, Lyndsey had the greatest prior experience working with individuals with disabilities; consequently, she was also the most adamant about finding an APE position after graduation. During her undergraduate degree, she volunteered with Special Olympics and with an adapted gymnastics program. During her volunteer experience, she came in contact with individuals with Autism and ASD, but had no direct working experience with them.

Stacy is a 24 year-old female from a mid-Atlantic state. Stacy had a bachelor's of science degree with a focus in health and physical education. She graduated the December prior to starting the master's degree program and worked as a substitute teacher until starting. During her substitute teaching, she had the opportunity to teach several classes in physical education and health. During this experience, she worked with students with disabilities included in GPE; none of the students, to her knowledge, was diagnosed with ASD. Upon graduation, Stacy wanted a GPE position, but looked forward to utilizing her APE knowledge to modify instruction for each and every student.

Site

As part of their practicum experience, participants taught APE (one-on-one) at a local school for children with ASD. While not completely indicative of all future placements within their careers, participants had the opportunity to work with the various behaviors, motor deficits, and communication abilities associated with ASD, allowing them the opportunity to try different behavior management, communication, and motor skill development strategies. Based on the individual child's IEP goals and objectives, participants worked with his or her student 1 to 2 times per week.

Data Collection

Interviews. In order to assess the how different factors influence the APE specialist, the researcher chose to utilize data collected through ethnographic interviews and observations. Interviews allowed the researcher to gain insight into the thoughts and perceptions of the developing pre-service teachers. Interviews were conducted pre- (one week prior) and post- (one week after) observations. The pre-observation interview was utilized to discover demographic information, past experience, as well as current perspectives on teaching. Additionally, questions were asked to build an understanding of what the participant perceived of how his or her student reacted to instruction. Questions were asked one-on-one in a semi-structured, open-ended format to allow for detailed answers, as well as opportunities for follow-up questions. This allowed the interviewer freedom to probe certain questions further or ask another question in an area that was not originally thought of (Patton, 2002). All participants were interviewed with the same set of initial questions; further probing questions were based on individual responses. Once pre-interviews were completed, an informal analysis was done to create a baseline of codes to use when observing (See Table 1).

Table 1. Emergent Themes and Codes

Themes	Code List	Example
Physical Environment Issues	Space	The room is divided by a moveable temporary wall; creating two spaces the gross motor area and a computer/TV area. This barrier leaves about 2/3 of the room for the gross motor area. ... On the north wall there are two doors leading to other classrooms, these doors are often left open. On the West wall there is another door that leads directly outside, although there is often a chair in front of it. Just as you enter the door, to the left on the east wall, there is a set of lockers that is used by staff to keep personal belongings in.
	Location	The weather has been so awful, we haven't been able to go outside and when we go outside, it's like usually like 100% she is attentive and able to do things.
	Others	Multiple students have come in and out of the room, some very briefly other not. Most are on some sort of break, they have little to no direction.
Instructional Challenges	Equipment	...not having enough equipment to have like a huge basket of basketballs, so he knows when he gets done with the basket he's done.
Instructional Challenges (cont.)	Time	S "Lets do one more then break" Aid, "I already told him it was break"
	IEP/Behavior Plan	She now has break cards, where if she takes one it's a two-minute break. And it's good, because it gives her time and space to calm down, but it does take out of out APE time.

Behaviors from Child	Positive Behavior	They walk about halfway around the U, then student starts jogging and S jogs with. Student jogs all the way to the end of the U... S encourages Student, "Nice job, nice job, go, go, go", student jogs all the way back around the U.
	Repetitive and Stereotypic Behavior	Student bounces on the ball, makes high pitch noises and flaps hands.
	Tantrum/Scream/Crying	D holds student's hand. Student walks with D, occasionally crying. When student is crying, D and aid stop until student stops crying
Personal Discernment	Past Experiences	...we don't really know a whole lot at this point, so the first couple weeks it was just getting to know your students, and like trying to survive.
	Self-Efficacy	If the kid is having a bad day, not gonna take it personally as I did in the past, like what am I doing wrong. You just have to realize like these kids are just having an off day, it mightn't be what your doing, it might be something else.
	Perception of Effect	As we walk back to the office, L says to me " some success is better than none"

Observations. To build an understanding of the external factors influencing the behaviors of the participants, in conjuncture with interviews, the research observed the environment that the participants taught his or her students. Observations (N=16) permitted the researcher to discern behaviors mentioned during the pre-interviews, as well as analyze what other factors were influencing the participants that were outside of their perception. Observational data were kept through a running record, as well as analytic and reflexive notes, capturing a detailed description of the events that occurred throughout the lesson; this level of strict accounting allowed the researcher to better analyze the situation by limiting bias through capturing as much detail as possible.

Each participant was observed once per week for 45-60 minutes, over the course of four consecutive weeks. By witnessing behavior over multiple weeks, the researcher was able to better understand the phenomenon that is occurring within the APE class setting as opposed to observing each individual once and witnessing a random occurrence. In addition to seeing participants multiple times, effort was made to see participants different times, days, and with different children to capture a greater range of occurrence. Credibility of the results was achieved through triangulation by analyzing multiple observations and interviews both within individuals and across participants (Lincoln & Guba, 1985). Lastly, a post-observation interview was conducted in an open-ended, semi-structured format similar to the pre-observation to further understand the beliefs of each participant. In this interview, the researcher sought to gain further understanding of the initial themes that emerged from the data, as well as gain insight into participant's perceptions of behaviors, etc. captured during the observation. Participants were asked his or her beliefs on how each of the themes was an influence on his or her teaching.

Data Analysis

Utilizing thematic analysis, as described by Braun and Clarke (2006), data was systematically coded and analyzed so that certain themes were allowed to 'emerge' from within the data (Table 1). Thematic analysis is not based on any pre-existing theoretical framework, and therefore can be used within different frameworks (Braun & Clarke, 2006). By utilizing this framework for analysis, thematic analysis affords the researcher the ability to incorporate a variety of background guiding principles. Bandura's SCT (1985) and Theory of Self-Efficacy (1977) for understanding behavior influences, creates the foundation of understanding that behavior is not guided by any one

factor, but an coalition between internal and external factors. These theories provided a guiding lens for the researcher to focus on, both, the environment in which the participant was teaching in, the participant's individual concerns, as well as the interaction between them. By following this guide, factors influencing the behaviors of the pre-service teacher were allowed to emerge from the data.

A better understanding and implications can be made by inductively looking at the data and allowing the themes to emerge through systematic coding (Refer to Table 1). Braun and Clarke (2006) put forth five phases for analyzing data: (1) familiarizing yourself with your data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, and (5) defining and naming themes. During the analysis for this study, following these five phases, the author, thus allowing for a deeper understanding of the data before the analysis occurred, completed the research. The researcher transcribed all interviews, verbatim, to ensure as much detail was included as possible. Handwritten observation notes were typed within 24 hours of completing the observation to ensure the freshest account of what occurred was detailed. In addition to keeping running records, the researcher kept analytic notes for each observation to allow for early analysis to be captured, as well as how the researcher was feeling and the thought process during that day's observations; capturing the vast variety of the differences that can occur each day for a person and taking that into consideration during analysis. During the beginning analysis, initial codes were developed through reading the interview and observational data (See Table 1). Themes were developed based on how certain codes fit together after initial coding. These themes were then reviewed, defined and then reviewed again to ensure they captured the true essence of the situation.

Trustworthiness and Credibility

This study was conducted in accordance to ethical standards defined through Internal Review Board approval. All participants signed a consent form for this study and were assured anonymity through the use of a pseudonym. The administration of the school was notified of the researcher's presence and study protocol, and site consent was granted. Lastly, a passive consent letter was sent to parents of the children that participant were working with detailing the study and informing them of our purpose. Trustworthiness and credibility were established through utilizing multiple sources of data over repeated occurrences. Additionally, triangulation was utilized to not only analyze data within one participant, but across participants as well; this allowed for a better understanding of how the themes transferred across individuals and situations (Lincoln & Guba, 1985). Member checks were done with participants to ensure that true opinions were being captured and not misrepresented; when there was a discrepancy about what was thought and what was captured, participants were asked to further elaborate and provide additional thoughts. Finally, a peer debriefing was utilized with an unaffiliated peer to ensure the validity of the emergent themes; this peer was given several excerpts of data with no identifying information (outside of the pseudonym), as well as the developed coded, and asked to verify the codes validity and the researcher's coding fidelity.

Findings

Through the use of thematic analysis (Braun & Clarke, 2006), four main themes 'emerged' from the data. These themes, as seen in Figure 1, all have influence on the pre-service APE specialist, and in-turn affect how the teacher will teach a child with ASD. Because teaching is reciprocal in nature, how the teacher teaches something will have an effect on not only their own experience and perceptions, but the child's behavior as well. Though the interviews and observations, it became clear that, as Bandura's SCT suggest, factors influencing the teacher are grouped into both intrinsic and extrinsic factors. Intrinsic factors, only affecting the teacher, include past experiences and their perceptions of the various teaching strategies, from here on referred to as personal discernment. Extrinsic factors are outside of the influence of the teacher and include the physical environment, instructional challenges, and the behaviors of the child. These factors influencing the teacher are not, wholly, revolutionary in the findings, but what one would logically find being involved in the teaching process of any individual student. This analysis however, gives insight into what is occurring in each of the influence factors when working with an individual with ASD, so that we may better understand how to prepare future teachers to work with this population of students.

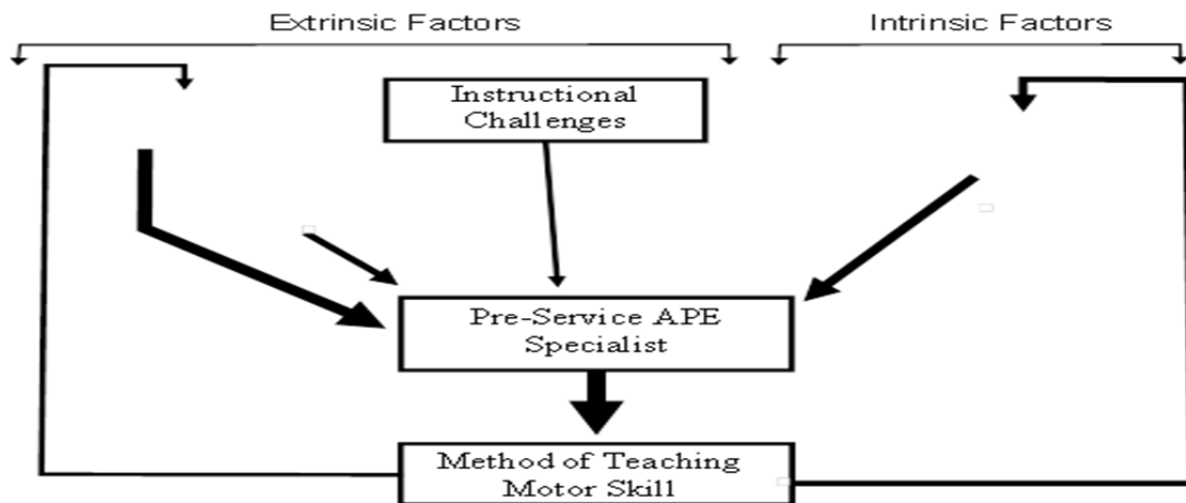


Figure 1: Factors Influencing the APE Specialist

Physical Environment Influences

During interviews of participants' teaching, it became very evident that the physical environment plays a large role in how the APE specialist addresses any given situation. The physical environment contains anything that is in proximity to the teacher and his/her student. For this study, the physical environment included a multi-purpose room that the majority of APE classes were held, the objects within that environment, and the number of 'other' individuals using the same space, as well as the noise level within the room. Each of the participants had some experience where the environment affected his or her teaching. One participant mentioned, ... *the room that we work in most of the time is so small and there's so much going on in there.* (Derek) Samantha further describes the effect of the environment: "... when it's rainy or snowing, we have to be in that room."

While a general gross motor room shared with the school, it not indicative of the placement of all APE specialists, it mimics the struggle APE specialists can face when working with a child with ASD. Many APE specialists will not have the luxury of having the gymnasium or motor room to his/herself each class period; often the room will be shared with the GPE classes or other small groups. Outside of the teacher's control, the environment can determine whether a certain activity can or cannot be completed. While many teachers have their own gym, they too are still at the mercy of school scheduled events, pictures, etc.

Throughout the interviews and observations, it was evident the environment also affected the child's behaviors, which has also been demonstrated in the literature (Virues-Ortega, Julio, & Pastor-Barriuso, 2013):

As we all get to the [gross motor room], the aid opens the door, it is very loud as we enter. D goes to the northwest corner and sets a black mat up on the floor... Student (St) begins to cry and falls to knees with his head on the floor. – March 24, 2014

Clearly, the environment not only limits the activities, but also may cause some unwanted behaviors to occur; Stacy stated, *If you [are] in an environment that has a lot of distractions in it, a lot of kids [or] a lot of things going on, especially because of kids with autism, their [going to] be looking everywhere. Moreover, Derek continues, Especially if [with] kids with autism, they can be easily distracted and there's a million noises and people coming in and out, it can definitely play a role, [it can have a] negative effect on it.* While in the situations presented in this analysis and not wholly indicative of all APE one-on-one settings, the majority of teachers will find that the space they are working in will have a great affect on what they are doing, who they are working with, and what they will be able to do.

All of the issues of space and environment play into what the teacher can expect to get out of the lesson for that day; the pre-service APE specialists were very cognizant of what his or her student could do, given the environment and would affect the lesson. Lyndsey states:

Some students, they [are] really set off with crowded spaces, [so] I am going to adjust for how much instruction I am going to expect out of them... giving them new things in an environment where its crowded or something is going to upset them.

By pre-adjusting their instruction for the environment, in order to pre-empt certain behaviors and increase learning time, pre-service APE specialists demonstrate the effect the environment plays. This however is often a skill that is 'learned' through trial and error; teachers in any field acquire this talent to read their students and adjust instruction on the fly. While this would be difficult to gain from any classroom instruction, it would be possible to access this skill set through practicums. Furthermore, the APE pre-service teachers understand what needs to be done to adjust and modify for it, further demonstrating its importance and need for inclusion for understanding for future teachers. Stacy says:

I mean, I don't let it bother me, I just go with it or I try to put her in a position where she is less distracted, so she's not, seeing things and can focus on what I am trying to say.

By improving the pre-service teacher practicum, future APE specialists will be better prepared and flexible due to their increased experience.

Instructional Challenges

If the environment is the space in which the teacher and student occupy, the instructional challenges can be explained as everything regarding the instructional portion of the lesson. This would include the equipment available, the time frame involved, as well as a student's IEP or behavior plan. All of these influences put certain constraints on what can or cannot be done during APE. When observing Samantha in this situation occurred:

S says are there any soccer balls, yesterday, I didn't see any. Another aid says there is about 5 over in the play-area. St says ok, I will go explore and leaves the GMR. S says I will set up, and give you a minute to play. S spins in a circle. S sets up a spot about 4 feet from basketball hoop. – April, 8, 2014

The APE specialist needs to either adapt other equipment to fit the needs of the lesson or work on a different goal for that class period. As see in the example above, Samantha wanted to work on basketball shooting with her student, but had to adapt the equipment that was available. While not the case in all situations and for every person, but for most, instruction is greatly influenced through the environment and equipment available, When asked *Samantha* revealed, *Sometime there's equipment, sometimes there's not. Which was also shared by Stacy, At [name of school], they have like nothing and so that makes it hard when you are trying to teach things. and Derek Whatever's there [is what] you have and there's not really many options, so... you really have to work with what you have. Try to do the best you can.*

Participants in this study understood modification was necessary and utilized what was available. While not every physical education teacher will have the same issues with equipment, often APE specialists will be sharing equipment with others, as typically many are itinerant teachers traveling from building to building. While these observations and interview responses may not replicate what is most teachers experience on a basis of equipment reliability, many teachers will understand the need to modify what existing equipment they have to fit the needs of their student. Often in order to modify equipment, as mentioned previously by Derek, teachers will need to work within the confines of what they have.

In addition to equipment, a child's behavior plan or reinforcement schedule had a great effect on the instructional goals for the lesson. Certain behavior plans for children with ASD utilize a time-on/time-off schedule or a break schedule. A time-on/time-off schedule would entail the child working for a certain amount of time, and then having a 1 to 2 minute break from guided activity. *Samantha's* student utilized this type of schedule, in which, her student had two minutes on and one minute off. She said:

Yea, so, typically it's chunks of type, with 2 minutes of work, 1 minute of break...and trying to jump between activities. So, typically it's walking on treadmill for two minutes, then he gets a break [sic] but then it depends on the day too. [sic] Two weeks ago, he literally laid on the floor screaming for the whole thirty minutes so, but yeah, typically it's chunks of [time].

As a result, regardless of all other factors, this participant lost a third of her instruction time, severely impacting how much she could do in a particular lesson and as seen in the example, that time can be even more limited due to behaviors very typical to children with ASD; this evidence is repeated consistently in other research (Obrusnikova & Dillon, 2011). Further, *Lyndsey's* participant has a student on a break timer where they may use verbal or non-verbal communication to request a break from instruction; when asked about is she said, *She can use it, like eight times in a*

session and we get nothing done. By the end of [the] session, and I have to go, ... I have another student and there's ... that break.

This was further demonstrated the end of one observation: *On our way back to the office to check out. L says she feels unproductive with St's long breaks. That each one is 5 minutes long (Recorded April 15, 2014).* By taking time off from instruction, the teacher has no choice, but to modify or limit the instruction; either the number trials for a certain skill must be cut short or the number of motor tasks for the lesson must be limited.

Behaviors from Child

The behaviors of the child with ASD, on- or off-task, can, arguably, be one of the largest influences on a teacher's instruction. Derek demonstrated frustration when asked, saying, *Within that 30 minutes [talking about the APE time], you might really only get like 5 minutes of actual teaching in.* A child with ASD can display a variety of behaviors, including social-communication deficits and repetitive or reciprocal behaviors or interests (DSM-5, American Psychiatric Association, 2013) that inhibits them from entertaining the cues for a given skill or will focus on extraneous details that are unimportant to the development of the skill. Furthermore, because it is a spectrum disorder, behaviors can vary a great deal from child to child (Scheuermann, Webber, Boutot, & Goodwin, 2003), so one set of guidelines will not work for all children with ASD. As seen by the numerous amounts of evidence-based practices for ASD (Wong, et al., 2013), it takes a multidisciplinary approach to modifying the instruction utilizing multiply strategies to limit the frustration for the child. All of which affects how the teacher will approach the lesson or activities; Lyndsey revealed:

If it's a bad day and the behaviors are really showing, then really the entire structure of the class is going to be different, cause the new goal is to keep his behaviors down, so the bad day gets turned into a good day. [sic] I might have all this exciting stuff planned, but if that's going to set him off, then that has to take a backseat. Likewise, that same student had a really great day the other day, and I took advantage of it.

As well as how a teacher approaches the lesson, itself; Stacy stated:

Today, she was really excited and will jump up and down. Which I take advantage of, you know, I'll hold her hands and dance or whatever. If they are pretty much done, there is no point in pushing them more for the lesson.

Through the child's behavior, a lesson could be extremely productive or unproductive. Throughout the observations, it became very clear, when a child is displaying a lot of behaviors, not much will get done for that lesson; for example in the following excerpt from observation notes:

St begins to cry and falls to knees with his head on the floor. St continues crying, while scooting across the floor. D moves to the mat and moves St into a sit up position, St continues to cry. D kneels by S's feet and grabs St's hands. St uses D's hands to pull himself up during the sit-ups. (Recorded March 24, 2014)

In this example, the behavior of the child dictated the course of the lesson and ultimate what skill was worked on; in an attempt to continue practicing and not lose out on PE time, Derek began practicing sit-ups with his student. While this may have not been a goal for the lesson, the behavior of the child caused the teacher, Derek, to adapt his plan and try to salvage the lesson.

On the other hand, if the child's behavior is not distracting to the lesson, a lot can be done in a short amount of time, as seen in the following excerpt:

After a fifth trial, St and S jump together. St smiles. S says "Jump it out" holding St's hands as they jump up and down. St gets the picture schedule out again, what's next. St [says] *Catch*. St stands on a spot and S kneels about 2 feet in front of St. S says hands out, look at ball. S tosses to St, St catches with two hands, then squeezes the ball. S says *I want you to catch with your hands 1, 2, 3, look at ball, catch*. St catches! S asks for the ball back. St jumps. S [says] *jump, jump, jump, S look at ball* repeats [catch routine] 4 times [successfully]. (Recorded April 8, 2014)

Multiple participants in this study utilized picture schedules to alert students to changes in activities, as well as what was being done for the day and when they would be done. Not only does this strategy give the student an understanding of what is coming up, but it can also be a way to improve their autonomy within the lesson. On the subject, Lyndsey said, *...she has a picture schedule that she chooses from, and you know for a student that does not*

really like APE, it's important that she feels more control. However, in the focus of this study, the behavior of the child plays a crucial role in the APE specialist's ultimate decision on what or how to teach the skill. Looking to Figure 1, through the behavior of the child interacting with the other factors on the APE specialist, the APE specialist will need to adapt his/her instruction to fit those factors and constraints. Additionally, depending on how the teacher utilizes the information the method of teaching will have a positive or negative effect on the child's behavior and thus affect the future teaching of the APE specialist.

Personal Discernment

During interviews and observations, it became clear that the teacher's perception of his/her own effect of utilizing teaching strategies and past mastery experiences were major influencing factors, along with the individual's self-efficacy due to past experiences; these themes played a very large role within the individual and interacted with their past experiences. By understanding the perceptions of teaching strategies and the effect they have on the situation at hand, future adjustments can be made to build confidence in utilizing the strategies. By building confidence with the strategy teachers will be able to be more effective earlier in their teaching. In a statement made near the end of her practicum teaching experience, *Lyndsey* stated:

I always wish I had more of that beforehand, um, I wish I had experience in a special education classroom, where they use more strategies that have to do with behavior, like, picture schedules or token reward systems. Um, I learned them soon enough when I came here, but also, it would have been nice to see a variety of them in use.

Without an exposure to effective evidence-based practices, future teachers are forced to learn as they go; which often wastes a great deal of his/her time and more importantly the student's.

Furthermore, each participant's unique background and perceptions played a large role in how he/she addressed the current situation. Each of the participants, before beginning their practicums, had little experience teaching individuals with disabilities, especially those with ASD. The majority of their pre-service experiences were in a GPE environment; their APE experiences were limited to either a limited number of students with disabilities included in a GPE classroom or one-on-one situations with a student with a disability. None of the participants, to their knowledge, had experience working with a student with ASD. Additionally, as the research suggests (Piletic & Davis, 2010), the majority of students had only one informational course focusing on APE: *Stacy* said, *We did have an adapted physical education class, but they didn't teach us [different strategies] or the different models of the specific disability, it was like a more general information class* This limited experience, had a direct role in the understanding and utilization of instructional strategies, shown by *Lyndsey*:

The tricky thing is knowing [sic] are the things you are doing on the right track. Like is it me or the student... Am I helping a kid reach their potential or am I less than what could be. It's really hard to know. Almost all the participants mentioned learning from one form or another of trial and error; said best by *Samantha*, *To be honest, a lot of trial and error... a lot of it is trying it, if it doesn't work move on... we can try this and when it work, they were like we can try it.*

Without the proper preparation for understanding the behaviors and how the evidence-based practices can work in the classroom, teacher's success rate when working with students with ASD is greatly lowered. The lack of confidence was shown by *Stacy*:

At the beginning of the year, I wasn't confident, just because I wasn't confident with [the evidence based practice], never heard of it. Didn't know what is was and was kind of shell shocked, when [my advisor] was like your starting this week, like 'good luck'... so the first couple of weeks it was just getting to know your students and like trying to survive.

Derek had this same recollection when asked about how he felt at the beginning of his placements, ... *yeah, definitely didn't have the strategies for it.* Limited experience and lack of understanding of strategies, may lead teachers to making a poor decision in choosing a method for teaching a skill, which may inadvertently negatively affect the behavior of the child, creating a snowball effect of bad behaviors. Referring back to Figure 1, the themes influencing the APE specialist, both internal and external have an effect on how that skill is taught; this then affects his/her own perceptions, as well as that of the student. This reciprocal nature of teaching can work in favor or against the teacher; by starting out with a good 'trick bag' future teachers will be more prepared to work within the other influencing factors to create a successful and effective lesson.

A teacher who is knowledgeable has a better understanding of what can work in a situation, and because they have knowledge of it or past experience, can make a more effective choice, shown by *Samantha*, speaking about her confidence after practicing for several months:

I feel like I have a cool bag of tricks and that I can pull from and experiences that I can draw from and say oh this behavior is similar to what so-and-so did and I know that when I had that before, this is what I did, so let's try this.

By building a repertoire of different skills and strategies through content knowledge and experience, participants in this study felt more prepared to encounter future situations. *Derek* discussed how he feels now moving forward to a future job:

Yeah definitely have the strategies for it. It depends on the kid and their behaviors, but I think definitely more so than I did before starting here... Oh, yea more confident. [sic] I've seen things that work, things that don't work.

By gaining positive experiences during the practicum, participants, in a short period of time, felt more confident to teach students with ASD in the future.

Discussion

To effectively understand the areas of need to meritoriously prepare future teachers to work with students with ASD, the primary influences of his/her teaching must be clearly defined. Ward (2014) admits that little is known about what it means to “*know physical education well enough to teach it*” and much more research needs to be done to define what teachers need to know. Through the breakdown of the influences guiding the teacher in his/her teaching, teacher-preparation programs can develop curriculum with an understanding of what needs should be met in each course. The first question this analysis sought to answer was: *What factors influence pre-service APE specialist's success when teaching individuals with ASD?* Though a thematic analysis of interviews and observations, behaviors from the child, instructional challenges, physical environment issues, and personal discernment arose as influencing factors. The influencing themes arising in this study are not uncommon and upon first glance would be what one would expect to see as influencing factors for a teacher regardless of discipline or geographical location. However, the benefit in this analysis is in the emergence of how future teachers feel about their potential for success in the future and, from participant answers, that future teachers are still not being prepared in the most effective way to gain a practical knowledge of what to do when teaching.

Research (Healy, et al., in press; Taliaferro, et al., 2015) suggests a balance of content knowledge and practicum experience is absolutely necessary to build confident teachers when working with children with ASD. When considering the limited knowledge base given about ASD and the prevalence of ASD in the classrooms, teacher-preparation programs need to include opportunities in practicum experiences for pre-service teachers to work with children with ASD (Hardin, 2005). It is evident that physical educators are gaining content knowledge, but lack the understanding to utilize that knowledge and link it to the current situation (Connolly, 1994; Graber, 1995; Taliaferro, et al., 2015). With a small amount of personal experience teaching children with ASD or a limited knowledge base of strategies to use, the pre-service APE specialist is limited to guessing. Without having previous experience, pre-service teachers will not be adequately prepared to handle situations as they happen and will be subjugated to a ‘learn-as-I-go’ method for developing strategies to teach students.

When considering the environment, as the findings of this study suggest, most APE specialists will need to be creative if ‘pulling’ students out of GPE; most likely, they will need to find a corner of the gym no one is using or an empty hallway. If weather or other circumstances force teaching to take place in the gym or multi-purpose room, the number of activities that can be presented maybe limited. For example, walking, running and riding a bike around the outdoor track is a popular and motivating activity for many of the children at this school, but these activities cannot be presented in the multi-purpose room. Furthermore, issues pertaining to the environment are well-known problems for children with ASD and in terms of behavior management, there are many things that a teacher can do to either preempt certain behaviors or modify the activity to adjust for a displayed behavior; it is evident in countless teaching strategies and behavioral interventions (Wong, et. al, 2013), but these strategies are often not a part of formal education of a PE teacher. If they are, strategies are very brief and a part of a much broader instruction.

Teacher-preparation programs know what future teachers should know and give an effective base of content knowledge for the skills they should teach (Connolly, 1994; Graber, 1995; Stroot & Oslin, 1993), however as was

reported by participants and is echoed by research (Ingersoll, et al., 2014) there is a disconnect between the pre-service teacher's content knowledge and the ability to implement that information (Ward, 2014). Participants in this study each had a sufficient GPE background of coursework from their perspective undergraduate institutions; nevertheless, participants lacked an ability, at the beginning of the study, to connect that knowledge with practice, especially when working with children with ASD. Children with ASD pose very unique needs in and out of the classroom and teachers need to be prepared for this. Meaning, they need to have the content knowledge of ASD, evidence based strategies to work with this population, and experiences to practice.

The next question driving this analysis was: *What is the APE specialist's perception of his/her own utilized teaching strategies?* This question emerged as a factor of the participant's personal discernment; in many of the conversations with the participants, whether in interviews or during observations, elements of uncertainty cropped up. At one point or another, participants mentioned a limited ability to perceive the effectiveness of his/her teaching or were at a loss for what to do in a situation. Often participants would default to what was done with other students or continue to try the current strategy unsuccessfully. Future adapted physical educators will face a variety of difficulties, behaviorally and physically, when teaching individuals with ASD, unique to what the other students with disabilities may pose. The participants at the beginning of his/her practicum displayed an extremely limited knowledge base and experience with students with ASD. To alleviate issues for both the teacher and the student, teacher-training programs should look to build experiences that help build a teachers knowledge and understanding of a variety of situations. As the saying goes, *if you have met a person with autism, you have met one person with autism* (Unknown); because of the nature of the disability, each child could demonstrate any number of behaviors that occur from children on the spectrum.

Since the participants had 1) a limited knowledge of the disability and 2) a vastly limited number of evidence based strategies for children with ASD, he/she were severely limited in the effectiveness of his/her instruction. Without being able to effectively address the issues faced, participants were limited on the overall number of goals and objective he/she could reach for any given skill. Furthermore, participants were limited to the number of trials that could be done in any given lesson. In order to be able to improve the overall success of the students, pre-service teachers need to be given a insight into evidence based practices and the opportunities to utilize those strategies in a practical way. Future coursework should incorporate a greater understanding of what types of issues will be faced with individuals with ASD and what strategies work best. At minimum, this will give the teacher a base for what to expect and what to do. In addition to content knowledge, future APE specialists would benefit from hands-on experience in order to practice those skills and hone their craft (Connolly, 1994; Taliaferro, et al., 2015). By building a better base of knowledge and experience level, future APE specialists will be more ready to act on the factors that influence their teaching.

Lastly, this study sought to understand: *How does the relationship of the individual and environment influence the individual's efficacy of outcomes?* Bandura's SCT (1986) describes that there is equal reciprocity between the internal thoughts and drive of the individual and the environmental factors that surround them. In this analysis, it became very clear that this was happening in each of the participants. Each participant had a fairly similar background of knowledge and experience with GPE prior to beginning their practicum experiences. Within each participant, the past experiences and self-efficacy of his/her teaching played a big roll in what he/she perceived could be done in any given lesson. On the other side, the child, environment, and situation each had an equal effect on the participant's decision of what or how to teach it (Figure 1).

In understanding not just that this relationship exists, but 'how it exists' is an important step toward making suggestions for teacher-preparation programs to build into future instruction. In this study, the instructional challenges and environmental factors were often mediated or exacerbated by the participant's personal discernment or behaviors from the child. If the environment had many distractions, the child's behavior would be effected; the APE specialist must then look at past experience, then decide if those were good or bad experiences, and from there, chose a way to teach for that given situation; this entirely happening within the teacher. With a limited amount of time, equipment, or a forced structure, an APE specialist has to fit the lesson and motor tasks within these constraints or it will not work. When considering this placement, within a school setting, an APE specialist needs to adapt to work with the GPE teacher to coordinate activities and equipment. When taken into consideration within

the larger constraints from the symptoms of ASD itself, not only will children with ASD be developmentally behind, which will alter their curriculum within APE, issues, like was experience by each of the participants above, will severely impact the number of goals a child can feasibly complete to mastery during the year. APE specialists need to have an understanding of how to develop a set of goals, typically two or three (as compared to a GPE curriculum of eight to ten goals), that a child can work on to mastery within that given year.

Experienced teachers have far more experience and knowledge to search through to find a good strategy to use for any given situation; pre-service or novice teachers lack this experience and will often have only a poor experience to draw from, which can lead to the 'trial and error' style of behavior management. The author is not suggesting that teacher-preparation programs train teachers to the experience level of very experienced teachers, that would be impossible, however, pre-service teachers need to be given a far more practical knowledge of teaching strategies and practice. Several participants had not knowingly encountered a child with ASD in a classroom, nor were given even a basic set of strategies to use.

Bandura's Self-Efficacy Theory (1977; 1997) suggests judgment of one's self-efficacy is derived from four sources: mastery experiences, vicarious experiences, social persuasion, and physiological responses. There is a great deal training programs can do to tap into these areas in order to improve the confidence of future teachers when working with student with ASD. To tap into building mastery experience, pre-service teachers need to be given the opportunity to have 'real' experiences with children with ASD in which they can be successful (Healy, et al., in press). Taliaferro and colleagues (2015) in an analysis of 98 undergraduate PETE majors, demonstrate a non-significant difference in self-efficacy between student who had prior coursework and experience and student who did not, with the exception of autism. This evidence suggests that there is something unique when working with children with ASD that can not be gained through coursework alone; students need to experience it.

Limitations

While building an important understanding of what factors influence the pre-service APE specialist in teaching motor skills to individuals with ASD and how that interaction exists, there are four limitations to this study. First, the purposeful sample for this study was small (N=4); the small sample is not large enough to truly ensure the transferability of the findings, nor was there experiences or education indicative of the physical education teacher preparation (PETE) programs as a whole. In addition, all the participants were from the same master's program and worked one-on-one with ASD within the same school environment. By having a relatively uniform participant sample, the findings of this study could be limited to this single phenomenon. Future research should seek to recruit individuals from a variety of experiences, educations, and locations.

Second, the participants were all working with individuals with ASD one-on-one and in a mostly secluded setting; findings may have been different had individuals from inclusive or small groups been included. By including those who worked one-on-one, this study was able to look at how the pre-service teachers used or did not use teaching strategies to cope with the behaviors from the child, environment, and instruction situation. It was clear in this analysis, that participants lacked that background experience. Future research, should focus on included participants teaching students in a variety of situations, e.g. small group, APE within GPE, self-inclusive classroom, and a full inclusion GPE environment. In each situation, the influencing factors will be there, but they may exist and co-exist differently. PETE programs should understand how pre-service teachers react to each of those situations, so that they can give them a well-rounded base of knowledge and experience prior to beginning his/her professional career.

Third, participants in this study were selected at the midpoint of his/her APE studies; this could have had an influence on their opinions and perceptions of strategies. Participants within this study showed tremendous growth in the short time being observed and interviewed, but his/her viewpoints may have been different at the beginning of the program. To best understand how these factor exist and which may have more influence over the teacher, participants should be included from the beginning of his/her studies to understand the growth of the individual.

Lastly, interviews and observations occurred over an eight-week span. This study was limited by time and funding, thus the researcher was only able engage with the environment for a short period of time. In order to more effectively build an understanding of how these factors exist in influencing the teacher, more time should be spent in the field observing and interviewing students in multiple settings. Pre-service teachers should be followed for a

longer period of time to gain a fuller wealth of information on the interaction of influences. By gaining a clearer picture of how factors exist, PETE programs can build course content to address the areas that lack.

Conclusion

Through this study, four factors emerged from data to provide a logical understanding of what is influencing pre-service teachers. In this analysis, the behaviors of the child, instructional challenges, physical environment, and personal discernment are all factors that would be expected to emerge for any teacher in any situation, however, this analysis allows for a deeper understanding of how these factors exist in influencing the pre-service teacher. Further study is needed to truly understand this relationship, but this study serves as a starting point for that analysis. Further researcher can start with these factors and focus on understanding what it is about each factor that is influencing the teacher and how does that teacher use the information to proceed with teaching.

It is evident that each of these factors plays a role within the teacher, but how it is used is not clear. The process for discerning information from these factors occurs within completely within the teacher and is not easily observed. However, what is clear in this analysis is that pre-service APE specialists need more guided instruction in strategies for children with ASD and initial experiences in working with these children in a variety of situations. By building a positive, successful experience in working with children with ASD during training, pre-service teachers will have a greater deal of confidence when they become a practicing teacher.

By understanding the relationship of how factors influence each other and exist within when teaching children with ASD, PETE programs can provide directed training to address these areas of need. Training programs have no effect on what the teacher will face in the environment, situation, or child, but can have an effect on the teacher's experience and efficacy toward working with children with ASD. By providing positive and successful experiences, pre-service teachers will be able to be more effective when facing the other influence and be allowed to make a more effectual decision in the teaching process.

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