

# International Journal of Special Education

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- **A Phenomenological Examination of the Influence of Culture on Treating and Caring for Hispanic Children with Autism**
- **At-Risk Youth in Australian Schools and Promising Models of Intervention**
- **Bahamian Teachers' Perceptions of Inclusion as a Foundational Platform for Adult Education Programs**
- **BOOK REVIEW - *Leadership for Inclusion: A Practical Guide*: Edmunds & Macmillan**
- **Instructional Variables of Inclusive Elementary Classrooms in Turkey**
- **Parental Involvement in the Individual Educational Program for Israeli Students with Disabilities**
- **Perceptions of Disability and Access to Inclusive Education in West Africa: A Comparative Case Study in Dakar, Senegal**
- **Prevalence, Diagnosis, Treatment and Research on Autism Spectrum Disorders (ASD) in Singapore and Malaysia**
- **Quality of Life of Students with Disabilities Attending Jordanian Universities**
- **Teachers' Perceptions of Students with Special Education Needs in Cameroon Secondary Schools**
- **The Effect of Embedded Text-to-Speech and Vocabulary eBook Scaffolds on the Comprehension of Students with Reading Disabilities**
- **The Effects of a Social Story™ Intervention on the Pro-Social Behaviors of a Young Adult with Autism Spectrum Disorder**
- **The Effects of Explicit Instruction on the Writing Ability of a Student with Noonan Syndrome**
- **The Work of Teacher Aides in Australia: An Analysis of Job Advertisements**

## International Journal of Special Education

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## I N D E X

VOLUME 29

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NUMBER 3

A Phenomenological Examination of the Influence of Culture on Treating and Caring for Hispanic Children with Autism.....	4
<i>Lynette Estrada &amp; Aaron R. Deris</i>	
At-Risk Youth in Australian Schools and Promising Models of Intervention .....	16
<i>Therese M. Cumming, Iva Strnadová &amp; Leanne Dowse</i>	
Bahamian Teachers' Perceptions of Inclusion as a Foundational Platform for Adult Education Programs .....	26
<i>Norrisa Newton, Yvonne Hunter-Johnson, Beulah L. Gardiner-Farquharson &amp; Janelle Cambridge</i>	
BOOK REVIEW - <i>Leadership for Inclusion: A Practical Guide</i> : Edmunds & Macmillan .....	38
<i>Maria Rapti</i>	
Instructional Variables of Inclusive Elementary Classrooms in Turkey .....	40
<i>Nimet Bulbin Sucuoglu, Selma Akalin &amp; Elif Sazak Pinar</i>	
Parental Involvement in the Individual Educational Program for Israeli Students with Disabilities .....	58
<i>Orly Hebel</i>	
Perceptions of Disability and Access to Inclusive Education in West Africa: A Comparative Case Study in Dakar, Senegal.....	69
<i>Elizabeth R. Drame &amp; Kaytie Kamphoff</i>	
Prevalence, Diagnosis, Treatment and Research on Autism Spectrum Disorders (ASD) in Singapore and Malaysia.....	82
<i>Tina Ting Xiang Neik, Hui Min Low, Noel Kok Hwee Chia, Arnold Chee Keong Chua &amp; Lay Wah Lee</i>	
Quality of Life of Students with Disabilities Attending Jordanian Universities .....	93
<i>Eman Al-Zboon, Jamal Fathi Ahmad &amp; Raied Sheikh Theeb</i>	
Teachers' Perceptions of Students with Special Education Needs in Cameroon Secondary Schools.....	101
<i>Rosemary Oneke Arrah &amp; Kristine D. Swain</i>	
The Effect of Embedded Test-to-Speech and Vocabulary eBook Scaffolds on the Comprehension of Students with Reading Disabilities .....	111
<i>Michelle Gonzalez</i>	
The Effects of a Social Story™ Intervention on the Pro-Social Behaviors of a Young Adult with Autism Spectrum Disorder .....	126
<i>Seda Karayazi, Patty Kohler Evans &amp; Janet Filer</i>	
The Effects of Explicit Instruction on the Writing Ability of a Student with Noonan Syndrome .....	134
<i>Kristie Asaro-Saddler, Bruce Saddler &amp; Tammy Ellis-Robinson</i>	
The Work of Teacher Aides in Australia: An Analysis of Job Advertisements.....	145
<i>Jennifer Stephenson &amp; Mark Carter</i>	

## A PHENOMENOLOGICAL EXAMINATION OF THE INFLUENCE OF CULTURE ON TREATING AND CARING FOR HISPANIC CHILDREN WITH AUTISM

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*Researchers have found that cultural factors may lead to lower rates of diagnosis in Hispanic children with autism and that parents lack the knowledge of therapies and practices used in the treatment of the autism spectrum disorder (ASD). Five research questions guided this phenomenological study. The focus of the first two questions was how culture may affect families seeking assistance; the third question queried how professionals play a part in the choice of therapies ; the fourth question dealt with how do families choose a therapy to aid their child with ASD. The focus of the last question was the involvement of other family members. The major themes included professional influences, concerns for children's futures as adults, parental involvement, and personalismo/familismo. The outcomes of the study demonstrate the influence professionals have on the families and the choices families make to aid their children with ASD. These findings will assist professionals to understand the Hispanic culture as it may relate to having a child with ASD and thus assist families to understand how to acquire the services needed.*

The effects of Autism Spectrum Disorder (ASD) pose challenges to all affected families (Hutton & Caron, 2005; Mandell & Novak, 2005; Shulman, 2002; Stoner, Bock, Thompson, Angell, Heyl, & Crowley 2005; Woodgate, Ateah, & Secco, 2008). The Hispanic population, which is the largest minority group in the United States (U.S. Census, 2006a), is not immune to the effects of autism. Neither is Miami-Dade County (Center for Disease and Control, 2006; Mandell, Listerud, Levy, & Pinto-Martin, 2002; Overton, Fielding, Garcia de Alba, 2007). In Miami-Dade County, Hispanics count for 61.3% of the population (U.S. Census Bureau, 2006b). It is projected that, by the year 2020, the Hispanic population will grow 46% while the Caucasian population only 24% in the United States (PEW Research Center, 2005). With these statistics in mind, research on Hispanic children and families is imperative, in order to assure proper services and practices to assist the children and their families.

One particular problem faced by Hispanic families in this situation is the lower rates of diagnosis compared to other ethnic groups (Mandell, et al., 2002; Overton, Fielding, & Garcia de Alba, 2007) and the apparent lack of understanding of therapies and practices used to treat ASD (Mandell & Novak, 2005). The area of concentration of this research has been focusing on the *decision-making process used for differential diagnosis of Hispanic children referred for ASDs* (Overton, Fielding, & Garcia de Alba, p. 1996) as well as examining racial differences in acquiring an ASD diagnosis by use of the Medicaid system (Mandell & Novak, 2005). Without a proper diagnosis, many parents are unaware of potential resources, their rights, community support systems and services, and their responsibilities as caregivers of children with ASD (Mandell & Novak, 2002; Shulman, 2002; Overton, Fielding, Garcia de Alba, 2007). The failures to access available services and understand essential rights and responsibilities impacts negatively on the families because they may not receive the support necessary for themselves or their children (Mandell & Novak, 2005; Woodgate, Ateah, & Secco, 2008). This problem may also affect society as a whole because society will be supporting the child with ASD as an adult, which in turn may have negative long-term psychological effects on his or her family (Hutton & Caron; Kasari, 2002; Shulman, 2002). Many possible factors contribute to the failure to use health care (Collins, Hughes, Doty, Ives, Edwards, & Tenney, 2002; Ell & Castaneda, 1998), including: (a) the lack of knowledge

within the Hispanic community of ASD; (b) the belief that ASD is shameful for the family, brought on by sin or by divine intervention to make one a better parent (Lopez-DeFede & Haeussler-Fiore, 2005; Santana-Martin & Santana, 2005); (c) parents not knowing the English language, thus not understanding their rights (Alvarez-McHatton, 2007; Alvarez-McHatton & Correa, 2005; Bacallao & Smokowski, 2007); (d) fear of deportation because they might be illegal aliens; (e) lack of finances or health insurance (Cruza-Guet, Spokane, Caskie, & Szapocznik, 2008); (f) lack of social support (Brice, 2002; Ell & Castaneda, 1998; Mandell & Novak; Oyerman & Lee, 2008); and/or (g) perception of discrimination (Alvarez-McHatton; Alvarez-McHatton & Correa, 2005). It is my aspiration that this study, using a phenomenological approach will contribute to the body of knowledge needed to address this problem.

The purpose of this phenomenological study was to describe and understand ASD as it relates to the effects it has on Hispanic families and treatment decisions made by Hispanic families within Miami-Dade County. This was made possible through access to families attained through the University of Miami Center for Autism and Related Disabilities (CARD) Center, Parent to Parent of Miami, and Atlantis Academy, a local school tailored to children with disabilities. The effects of autism on the family are generally defined as the way autism affects the families socially and economically (Cantell & Baker, 1984). The families' understandings of educational theories and practices for their children were also addressed.

## **Method**

### *Participants*

There were ten participants in this study, eight mothers and two fathers. The common characteristics shared by the participants were of being of Hispanic ethnicity and being a parent of a child with ASD living in Miami-Dade County. Two participants had children who were not yet in school, two had children who were in elementary, two had children who were about to transition into adulthood, and the last two participants children were adults.

### *Materials and Procedure*

Meetings were held with the gatekeepers and potential participants in order to give an overview of the study and invite potential participants to take part in the study (Seidman, 2006). Interviews were conducted in English or Spanish and were audio recorded.

Data for this study included demographic data and recorded interviews. Data were collected and put into an outline format by using Roman Numerals and letters that identified key elements within the interview. Using the outline format allowed the researcher the ability to place important dates of specific events or other notations easily on the margins of the paper (Hatch, 2002). At the end of organizing the data, recurring or similar experiences were grouped and/or clustered together in columns. The topics at the top of these columns were abbreviated with a code. Codes were alphabetized for the researcher to be able to find specific topics with ease. Thus, the option of recoding the data if in case the original coding system did not function was available (Creswell, 2003).

### *Procedure*

Interviews were conducted at a location agreed upon with the participant. The purpose of the study was re-stated; participants completed a demographic data form, and participants were reminded of the projected time for the interview. Each interview lasted approximately one hour. The interviews were recorded for accuracy and transcribed within two weeks. The participants were asked questions that were peer reviewed by an expert panel consisting of parents, teachers, and other professionals that have dealt with families living with a child with autism. During the interview, field notes were taken. This allowed for follow-up questions in order to clarify answers being given by the caregivers.

The common language of inhabitants of Miami is Spanish; however, English is also commonly used. Participants in this study spoke English, Spanish, or both at the same time. The primary researcher is fluent in both languages and the interviews were conducted in the language of choice of the participants. The interview was composed of the following elements: 1. Setting the stage, review of consent form and ask for anything that needed clarification. 2. Review of documentation verifying diagnosis. 3. Interview questions were given in an open-ended format. This format enabled parents to express their experiences and viewpoints using their own voice (Seidman, 2006). 4. Allowing the participant's the opportunity to review the transcripts after it had been transcribed in their preferred language prior to analyzing data to ensure accuracy.

## Results

### Themes

The following section presents the research findings for this study. The findings address the focus of the research questions and literature review that guided this study. Salient themes are presented with examples of the statements participants made. All responses convey the lived experiences of the participants in their own words, feelings, and represent their encounters as a Hispanic guardian of a child with ASD.

Data collected for analyzing were based on the research questions (a) Does culture play a part in the age of diagnosis for a Hispanic child?, (b) How does culture influence the choices that Hispanic families make to aid their child with ASD?, (c) What possible effects do professionals have on Hispanic families with a child with ASD?, (d) What therapies are Hispanic families choosing to aid their child?, (e) To what extent are external family members involved in raising the child with ASD? Data collected for analyzing were based on the research questions, which included experiences with professionals, involvement of the parents, and cultural influences.

### Experiences with Professionals

For the purpose of the research findings the word professional included pediatricians, neurologists, teachers, psychologists, social workers, and speech and language pathologists. The first research question, does culture play a part in the age of diagnosis for a Hispanic child? Parents were asked to share the age in which their child officially received a diagnosis of ASD. Within this study the age of diagnosis had no consistency. The age of diagnosis ranged from 22 months to 10-years of age. Some of the parents encountered more challenges than others in order to obtain the diagnosis. In their discussions with the professional, the word *autism* never came up for some families. One family learned of the official diagnosis only after they changed doctors.

*P3: Well, the autism I was at 3 when I took him to Dr XXX At 15 months you know developmental delays, language delays, for early intervention and that was from 15 months 'til about I think he was 3. I mean I kind of we always kind of knew that was probably at 3 that was the official from Dr. XXX. It was kind of a confirmation as to what we kind of suspected all along because he pretty much knew it. He had a previous neurologist and I kept asking him and oh don't worry about it and sure enough he had already diagnosed him when I go back to the papers he never wanted to tell me. Which is kind of stupid and I got very upset about it because you know it doesn't make sense but sure enough it was in there when I actually got the paperwork from him afterwards that I asked for copies that I was going go to Dr. XXX and he had it in there.*

Most families expressed the stress and confusion they had when they knew something was wrong with their child.

*P3: So I cried the whole time. I really did because even though I knew in my heart – if this is just getting it official you know like stamped but it was just so so sad for me.*

*P8w: I have also investigated, but it's confusing...*

Most families knew long before they received an official diagnosis of autism. The following are examples of parents knowing something was wrong and having to challenge the professionals.

*P1: And there I read that like the only way to diagnose autism is by asking the parents and they ask the five famous questions that they ask. And I said yes to most of them and so from there on I did not say anything else to the pediatrician like oh he is not talking. I just went to him and showed him the book and I was like this is it. And I just need you to give me a prescription to go see a neurologist.*

*P3: At about age one. I was thinking that there was a problem with XXX and that is when I approached the pediatrician at that point.*

*P5h: Well, I think that it was more or less when he was two years and some when we noticed something. We mentioned to the pediatrician and he said not to worry that he was little and he*

*will growing, and that was normal.*

Studies have demonstrated similar scenarios where parents had the preconceived notion that something was wrong with their child and the professionals were setting their concerns aside.

*P1: No she's oh ok, she's autistic ok, but she felt in a way I realized he's autistic he's the neurologist problem he's not my problem.*

*P7: Classic, we kept asking the pediatrician, something does not seem right xxx7 does not seem to be reaching his development mile stones at the time that he should have been meeting them and um.... The pediatrician said he is a boy, boys are slower, you have a daughter and she is very advanced, so your son is you know... sometimes in the older sibling, tries to take care of things or get involved, so the second child gets a little lazy; and this is just the way a lot of boys are.*

This finding continues to add to the body of literature that resonates that *parents of children with autism are usually the first to recognize the symptoms and subsequently have difficulty convincing reluctant grandparents and medical personnel of the problem* (Hutton & Caron, 2005 p. 181; see also Gray, 1994; Gray, 2006).

The negative experiences parents continue to have with the professionals continues to be very real.

*P4w: I would like to find a way to solve this problem or find someone that could help me with this problem. Do you understand? Because this is not normal. This is not something that we bring. We don't ask for it.*

*P5h: Well, when we got here, we started looking for special programs that the government would offer.*

*P5w: Public schools didn't accept him because he was too old. With the exception of P3, all participants have had and continue to have some sort of negative experiences. Once P3 changed neurologists she felt blessed. Everything fell into place. Although she still frustrated with the neurologist and the educational system, she knows her experience has been very positive compared to others.*

*P3: Well, we have been lucky again, I think I have you know a guardian angel has been with me all this time, and God has been good. So we have been lucky.*

Although all parents expressed concerns with their professional encounters in one way or another, P5's experience was the most extreme and heartbreaking.

*P5: Because they said that it was the parent's fault that the parents were from different cultures. Back then they didn't even know the cause and today they still don't know; that was the parent's fault.*

#### *Personalismo*

Culture makes possible for a person to make sense and devise a solution for situations which may arise within their lives (Barnes, 2005). The belief is that the cultural theory of familismo and personalismo may be the link connecting the Hispanic culture to the decisions they are making to care for their child with ASD. Research question 2, how does culture influence the choices that Hispanic families make to aid their child with ASD?

Within the Hispanic culture, personalismo is described as being able to have a warm and trusting relationship with others (Barker, Cook, & Borrego, 2010). There needs to be an ongoing respectful and family like dialogue between professionals and families (Brice, 2002; Barker, et al.). The Hispanic culture tends to prefer to work with professionals who are also Hispanic (Guilamo-Ramos, Dittus, Jaccard, Johansson, Bouris, & Acosta, 2007; McCabe, 2002). If unable to acquire a Hispanic professional, then they would prefer someone who understands the language and their culture. The families within this study were no different. Participants expected me to respect and speak their language of preference. Before beginning the interview, all participants initiated a personal conversation. They

wanted to hear in detail about my experience with ASD and about my personal experiences outside of ASD (Barker, et al., 2010; Guilamo-Ramos, et al., 2007; McCabe, 2002). Participants were genuinely interested and gracious with their hospitality (Brice, 2002). This technique of allotting extra time at the beginning of a session to discuss other events in a person's life is recommended when working with Hispanic families (Barker, et al. 2010). This preamble enabled a comfortable setting and ambiance for the parents to be candid with their responses on how their culture influences the choices made to help their child with ASD.

Personalismo became evident as the emergent theme in this research question as parents described their experiences with the professionals involved in their child's care. As discussed in the literature review, Hispanic families prefer someone who will speak to them one to one; someone who will sit down and discuss personal information without having a sense of being rushed. The families are aware that professionals have a job to do, but they would like to be related to on a more personal level and not by the book all the time. The following are examples of how parents felt rushed or impersonal with professionals.

In the first section P1 is discussing her experience with the doctor. In the second example we were discussing how she relates to the school.

*P1: No, she's oh- ok she's autistic. Ok but she felt in a way I realized he's autistic. He's the neurologist problem he's not my (the pediatrician) problem. You know, I treat him if he has a cold or he has this but they treat it like two different problems you know... and that's her s that's the pediatrician. Uh, the neurologist- you know just typical neurologist he just saying ok this is it and this is he is autistic and you just need to take him into a school or take him to therapy.*

*They have been nice but they really do not do it because in her program it is a problem because there are other children with other disabilities and for example she does not really do the schedules in school. And I did tell her you know I noticed they have a schedule that works and she was like Oh ok but I don't have time to do it. All so nicely but she's not going to do it.*

*P2h and P2w want to be a part of the school process. However, they continue to face barriers.*

*P2: They (the school) brought teachers that were like we really we do not want to be bothered by you guys. You know they had an open house, we were like the only parents who showed up and they were like they acted like they would have been just as happy not to see anybody. And he could not do therapy there. He could not have outside therapy come in. He could not have CARD come in and do anything. Nobody.*

#### *Parent Involvement*

The importance of parental involvement is no different within the realms of this study. The authors found by calculating the responses that seven of the families are not satisfied with the information and/or treatment they are receiving from the educational community. Based on the responses given by the families, they do not feel as if they are being listened to by the educational professionals. Research question 3, what possible effects do professionals have on Hispanic families with a child with ASD? As previously stated, the families interviewed for this study have not had consistently positive experiences with the professionals in their child's care.

*P1: And there I read that like the only way to diagnose autism is by asking the parents and they ask the 5 famous questions that they ask. And I said yes to most of them and so from there on I did not say anything else to the pedestrian like oh, he is not talking. I just went to him and showed him the book and I was like this is it. And I just need you to give me a prescription to go see a neurologist. I did not fight you know I just went and I said to him. Because she was like Oh when I told her like no he does not speak she was like saying like everyone else says no he is too small he is a boy because she spoke really early. I mean if you speak with her she uses all her verbs and she but he was behind so.*

*P6a: Well, really, really, really, when it came to sign language we had no instructions. They would teach him one thing and we had to guess what it was over here. One day XXX came home and he was going (movement and sound with hand). I said no it's turkey. I had to go*



*back to the school and she laughed and said no, that means dirty. This is a turkey and this is dirty. I had to bust my hump trying to communicate with him because they would teach him one thing and not let us know what they were teaching.*

Families who have had educational or medical training have been able to understand more than the families who come from other backgrounds. P1, P2, and P3 were families that had some knowledge about working with education or medicine. P1 was becoming a special education teacher.

*P1: We wanted to know like we knew something was going on but, like everyone else, we couldn't like pin point what was so before we had this problems I was studying to become an ESE teacher and I remember at 2:00 am in the morning I was studying to do the finals and there was 1 chapter about autism and there I read that like the only way to diagnose autism is by asking the parents and they ask the 5 famous questions that they ask. And I said yes to most of them and so from there on I did not say anything else to the pediatrician like oh he is not talking. I just went to him and showed him the book and I was like this is it. And I just need you to give me a prescription to go see a neurologist. I did not fight you know I just went and I said to him.*

*P2w worked in a school in North Carolina that catered to the needs of severely disabled children. Despite her background, she was overwhelmed by having to care for her son. She believes God gave her the care of her son since that is what she did.*

*P2w: He was three years old. Exactly at three, because I was working at a school, which contained kids with special education needs, but it, was a combination of regular and special needs kids. The special need kids were with the normal kids. That was until 5 years old more or less. He entered as a regular child at the age of 3. He was with other teachers, as I was working in a different class with other kids. I noticed that x2 was different, as I would observe him through the window. I would see him hide behind the teachers instead of being out and about playing with the other children. It was very unusual. I would confront the teachers as to his behavior being unusual; yet they would just treat him as any other child. And these are educated individuals.*

*P3 is an active member of the advocate community in Miami-Dade County.*

*P3: It was very noticeable for me and as an RN I kind of you know there was something there. You know?*

On the other side of the coin, we have the families who are coming into a diagnosis with little to no experience. They are learning the process as they go along if at all. P4 insists she has learned nothing despite her son already turning 18.

*P6a: We learned everything through trial and error.*

*P6a: A lot of trials and a lot of errors...nothing, nothing they only had 1 class where they had this lady and the class was like mentally retarded children that really had nothing to do with autism. She only taught us about where they would masturbate and how to be instructed on where. You can only do it here or there. This was the only instruction that we ever gotten.*

*P7 (shares her vivid recollection of her experience with her son's diagnosis.): Well that would depend entirely on the teacher... it was very disheartening too because you would come to the classroom with the recommendations then of course the other issue is what that was terrible was this whole issue of a veil of secrecy... So awful. I have to tell you that once I found this out... I called the district. I did the whole line- you know? The region, district no one would listen to me my complaints went unheard there was another mother who did the same thing her son was in that class until finally I had it. I said this is too much. I am going to write an email to Jeb Bush, who was the governor at that time. I can tell you they got a lot better for XXX. Yeah because anytime there was a problem they wanted to make me happy. Because you know what I just got to the point I was just fed up.*

The role of the parent should not be ignored. No one has more interest in the advancement of a child than

the parent. The family will be with the child throughout the child's educational career and will have to live with whatever educational decisions are made by the professionals (Tam & Heng, 2005).

Research has found that Hispanic families tend to be very respectful towards professionals or experts in a particular field (Brice, 2002). However, within this study, most families were eager to discuss the concerns they have had with professionals. Families believe doctors or educators do not know what ASD is or how to handle it. In this study, 100% of the families did not find some doctors helpful at some point in the treatment of their child.

Another profession that is relied on heavily is the field of education. IDEA was created in order to ensure all children will have access to a free and appropriate education. Thus, education plays a pinnacle role in the future of all children. This is no different for a child diagnosed with a disability such as autism. According to educational research, the communication between parents and schools must be effective in order for children to succeed (Parette, Chuang, & Huer, 2004). In this study, participants believe they have not been able to acquire information to assist their child. Participants have described teachers as *nice* but not knowledgeable of what ASD is. Teachers were described as overwhelmed and in need of more training.

The Hispanic culture is not immune to the autism epidemic. Some Hispanic families are finding themselves thrust into the stress of living in a new country with a different culture. The results of this study as to whether culture plays a role in the age of diagnosis are unclear due to the size of the population of the study being eight participants. The study does coincide with the findings of the Centers for Disease Control and Prevention (2013) stating that ASD could be diagnosed at any age. The average age of a diagnosis is three years one month (Mandell, Novak, & Zubritsky, 2005). The average age of diagnosis in this study was four years and five months. There is a one year five month age difference in the diagnosis between the study and the national average. This can be due to a result of a lack of knowledge of ASD (Lopez-DeFede & Haeussler-Fiore, 2005; Santana-Martin & Santana, 2005) and a lack of social support (Brice, 2002; Ell & Castaneda, 1998; Mandell & Novak, 2005; Oyerman & Lee, 2008) due to not having family nearby.

#### *The Future*

The families within this study continue to forge forward with the therapies chosen more by word of mouth than by professional recommendation. The families believe the Hispanics must stick together and help each other (Calzada, 2010). The participants in this study do not trust the professionals 100% with the care of their child. Participants' believe that God has given them this and their child with surpass this.

*P1: I'm not trying to think about it too much because I try to focus on my energy. Right now and all the moment, right now and everything, right now top see the future would change. But obviously, I want him to get married I want him to be at least independent.*

The thought of the future is a concern for 100% of the families. All of the families mentioned to me their desire for their child to be independent. All families want their child to work, have friends, and get married.

What therapies are Hispanic families choosing to aid their child? According to the demographic survey administered to families, the families used eleven therapies. These therapies are summarized in table 1.

**Table 1. Therapies Utilized at Home**

Therapy Used	Number of Families
Occupational Therapy	3
Speech or Language Therapy	3
Behavior Therapy	2
PECS	1
ABA	2
Floortime	1
Social Skills	1
Music Therapy	1
Faith	7
Physical Therapy	1

Diet	2
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### *Familismo*

Research question 5: To what extent are other family members involved in raising the child with ASD? ask families to discuss the way the family assists them in the raising of their child with ASD. Most of the participant's answered this right away. Some had to stop and search for words. The Hispanic community is known for a strong family support system (Brice, 2002). The role of a Hispanic child in the make-up of the family is one of pride, especially for the male child. Children are raised to strengthen and be a part of a larger unit. They are not raised to grow and acquire their own personal goals or foster independence away from their family (Brice, 2002). The parents within this study aspire for their child with ASD to be able to work, perhaps get married, and be independent. The mother's primary role is that of caring for the children.

According to Calzada (2010), behavioral familismo has five themes:

1. Shared finances. Family members support one another out financially.
2. Shared living. Extended family share living arrangements.
3. Shared daily activity. Families are together when they are not working.
4. Shared child rearing. The entire family is vital in raising children.
5. Immigration. Families assist each other in motivation and finances to immigrate to the United States.

With this in mind, the findings of this study manifested familismo most evident in this question. Families tended to rely on each other for shared child rearing. Despite the fact some families are out of the country, most participants rely on family for outings, childcare, and transportation. P6m and P6a were a good example of these themes. They pool their money together for finances, they live together in order to facilitate rearing of the child with ASD.

As families, the biggest concern is what will happen to the child after they die. Some families admitted to it being the responsibility of the sibling. Only one couple said that they do not want the responsibility to fall on their other children. Within this study, seven of the eight participants share all aspects related to the development of the child with ASD with other family members. Evidence suggests that this is more so with second generations (Halgunseth, Ispa, & Rudy, 2006).

### *Frustration with Professionals*

The participants reflected on the role their family plays in their lives with a child with ASD. For example: Families within this study rely on those family members who are close by for helping with watching other children, transporting the child with ASD to therapies, or sharing custody of the child with ASD with a non-parental family member, as was the case with P6. This mother/aunt duo has shared custody of the 21 year-old child for many years. This relationship is documented and enforced by both the mother and the aunt who have been living together since the child was a baby. P1 relies on her mother and aunt to watch the children so she can get chores done. With the exception of P3 and P6, most families did not rely on other family members to enforce strategies given by the professionals. In fact, P8w has kept the diagnosis away from her mother who resides in a foreign country. P8w stated the stress her mother was in when she suspected something was wrong with her child.

*P8 My mother was very sad. She had heart problems, but we had to tell her. She used to ask me what does he say? Is he talking? Is he eating with a spoon? So we had to tell her that they were testing him. She saw him and she wants to know his progress. My mother adores him and she asked what was it that they told you? So when I told her that he had a low level of autism, she got very bad. She started lighting up candles and started to pray.*

*P8w Does not want to worry the family members back home. She continued to express her frustration of being in this country alone with a child with ASD and no job. She expressed the anxiety and stress they are under because they are alone.*

*P8w: But we immigrants without money is very stressing. Then, you add the child situation is more frustrating... Our life at home is horrible.*

Within the confines of this study, P8 is not alone. P1 have moved around the country looking for help for

their son. They feel alone, with no support. Due to the distance, they do not see their family members often. Neither does P4. Despite her expression of how alone she is she presses forward because she feels this is from God. This is her *cross to bear*. Most participants have taken on this view of self-sacrifice for the good of the child. Families have moved across the country, mothers have stopped their education and/or working in order to care for their child.

*P2h: See being down here he does not see the family at all, that much in NC. He's been to Venezuela a couple times, maybe once every couple years. So he's really not there long enough for him to you know be there every day for a long period of time.*

This study utilized qualitative research in order to delve into the parental perspectives of living with children with ASD. The interview provided a wealth of information on how parents perceive the influence that the medical and educational professionals have on the decisions they make for their child. Participants shared a lived experience. They expressed concerns related to their child's diagnosis, services, and future. Once data were reviewed and analyzed, the interpretation of findings was organized according to the research questions and the thematic units that emerged. These were: (a) negative experiences with professionals, (b) concerns for child's future as an adult, (c) frustration, (d) personalismo/familismo, and (e) parent involvement.

#### *Frustration with Educators*

The educations of students go hand in hand with the educations of their teachers (Barth, 2001; Leithwood, 2002; Lieberman & Miller, 2002; Marzano, 2003; Valli & Hawley, 2001). *Evidence suggests a strong link between highly collaborative school cultures and schools' effectiveness* (Leithwood, 2002, p.99). Parents who come from a diverse cultural and linguistic background *can be challenging* (Tam & Heng, 2005). However, researchers have found that the collaboration between schools and parents have been invaluable to the advancement of a child's educational and emotional skills (Padgett, 2006). In order to maintain positive communication with parents, parents should be treated as partners with valuable knowledge, which may assist professionals in the interventions used for the treatment of their child (Tam & Heng, 2005). This can be made possible by providing personnel who are familiar with their language and cultural needs (Felber 1997; Tam & Heng, 2005).

The majority of the participants reported frustration when working with the educational school system. Parents do not feel they are taken seriously by the educational system. They have been made to feel as if they are in the way. P2h shared, *You know they had an open house, we were like the only parents who showed up and they were like they acted like they would have been just as happy not to see anybody*. Participants expressed their lack of support within the schools. As soon as they ask for help or clarification then they (the parents) becomes a problem. P7 shared her experience:

*P7: His IEP's nothing was being met. It was a just you know it was one of those situations where you know a group of people basically saying they are basically babysitting your child... it was very disheartening too because you would come to the classroom with the recommendations then of course the other issue is what that was terrible was this whole issue of a veil of secrecy. They never wanted you to go into to observe your child. no one would listen to me my complaints went unheard there was another mother who did the same thing her son was in that class until finally I had it. I said this is too much. I am going to write an email to Jeb Bush. Who was the governor at that time? So I wrote to Jeb Bush and sent him an email... yeah because anytime there was a problem they wanted to make me happy. Because you know what I just got to the point I was just fed up. It became like a joke don't get Mrs. XXX mad because she is going to call Jeb.*

Parents feel that teachers need additional training and understanding in order to be able to work more effectively with the ASD population.

#### *Concern for the Future*

All participants reported frustration with their lack of control and knowledge of what the future will bring. Participants became extremely emotional about this question. They all want to help their children become functioning citizens in society but they fear they lack the knowledge as to how to accomplish this. Right before the interview of P3, she was removed from her son's IEP because he had just turned 18. She did not know she had to take legal action in order to continue to help her son. She assumed as his mother and his lack of abilities that there would be no question as to her guardianship. Now, she feels

lost and frustrated. Asking, what can be done? P5w and P5h tried to find their son jobs but no one wanted him. The current program available for training people with special needs is not appropriate for their son. He has no wish to return to the program.

#### *Parent Involvement*

Another aspect of the Hispanic culture is their involvement with their children. All families within this study consider themselves active in their child's lives. All families interviewed included the mother.

The parents who participated in this study attend regular school meetings and meet periodically with teachers and therapists. Parents are eager to learn ways to help their child with ASD to overcome their diagnosis. P6m and P6a attempted to attend a behavioral management class that would help them with their child. They wanted to learn how to communicate with their child. They have questions such as: How can they get him to do homework, become more independent, and write? Instead, they claim to only have been taught the appropriate places the child can masturbate. All participants expressed concern of the lack of support from schools, the medical profession, and the community. They wish to find ways to help their child.

#### *Personalismo*

The findings of this study incorporate the theoretical framework of personalismo as the premise for how which Hispanic families choose to aid their child with ASD. Family is key (Guilamo-Ramos, et al., 2007). Within this study four out of eight families had other guardians present during the time of the interview. The families often relied on each other for information and would correct each other if necessary. Only once was it observed that the wife was not as responsive when her husband was in the room. In this study, 100% of Hispanic families interviewed expected a conversation before the interview began. Families offered something to eat or drink as a discussion of my personal connection with ASD began (Brice, 2002; Guilamo-Ramos, et al., 2007). Once dialogue was established, I officially began the interview as if they were old friends.

#### *External Support System*

The participants who have family in Miami-Dade County rely on the support and services of those family members. Most support came in the form of child care. This enables parents to work, complete household duties, or for transporting the child to and from school and therapy. Most families expect the siblings to help with the upbringing of the child with ASD as well. The sibling's role is to help with chores or to entertain the child with ASD so that the parents can get things accomplished.

#### *Faith*

All participants expressed an extraordinary faith. They believe they will be able to get through this situation with God's help. Participants believe God will lead them to the right people who will assist them with their child. Participants believe their child was given to them for a purpose and they will endure. They, also, have faith that their child will learn and become good people or perhaps get married:

*P8 I want him to study normally, well, taking into consideration his abilities. I want to have good grades academically and I want him to learn how to live. I worry about school because he is very quiet and if they hit him, he will stay quiet and then people can abuse him. I would not want him to go through that. I want him to be able to learn how to live in a society. Mom and dad are not eternal so he needs to understand that.*

#### *Behavioral Familismo*

Within the realm of this study, all participants with family members living in Miami-Dade County share child rearing. All participants rely on family to help with day to-day activities like chores and transportation. P6 went as far as to grant guardianship to her sister so that she would have equal say in decisions regarding her son. The involvement of the entire family help to reduce stress by allowing parents to go shopping, go to work, or just have a break. All participants that have family support expressed gratitude to their families.

Also within the behavioral familismo, families share daily activities. Families are together when they are not working. All siblings are encouraged to partake in the lives of the child with ASD. For example, the three younger children of P5 take the eldest brother to the movies or to the store. They assist the parents by entertaining. P7 says her daughter helps by taking her son to therapies and by playing with him. P3 says that grandparents, the aunts and the uncles are active in the care of the child with ASD and help her

out. On weekends the families are expected to be together helping around the house or by entertaining the child so that chores and/or work can be done.

### Discussion

The Hispanic culture mandates families need to be respectful to professionals (Brice, 2002). They believe the professionals know best. Based on the responses of this study, the professionals the families rely on are the pediatrician and the educational professionals. This study illustrates a discrepancy with the age of diagnosis of the Hispanic families in Miami-Dade County compared to the national average. Pediatricians should be encouraged to participate in community or national workshops on ASD in order to gain a better understanding of how to diagnosis and treat ASD properly. Due to the high prevalence in ASD in schools, I suggest teachers be required to be endorsed or certified in ASD or as an add-on to their SPED certification. This endorsement can be added on to the professional certificate as an endorsement like English as a Second Language (ESOL) is in Miami-Dade County.

Consistent with previous recommendations, it is the job of the professionals to help educate the families. Professionals need to be cognizant of the parent's lack of knowledge of how to help their child with ASD due to language barriers, parents not understanding their rights, and lack of support. Professionals should not assume parents do not care or understand everything they are being told. Instead, professionals should assume parents do not know nor understand the ASD diagnosis.

Most families are away from their home countries and away from their families. They are here alone starting a new life with a child with ASD. Families should be strongly encouraged to seek out other Hispanic families within the community. Professionals need to give parents community-based information like those found in Parent to Parent of Miami and The University of Miami Center for Autism. I recommend a buddy system for interested families either through use of internet or phone conversations. If a newly diagnosed family does not understand information given to them or if they need someone to talk to, they can call their buddy and acquire the support they may need. I believe a core group of buddies can be trained and be prepared to train other buddies in the future.

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## AT-RISK YOUTH IN AUSTRALIAN SCHOOLS AND PROMISING MODELS OF INTERVENTION

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*The largest population of youth at risk for involvement in the juvenile justice system are those with disabilities and mental illness. There has been scant research into the pathways that these students take from home, school and the community to involvement in the justice system in Australia. This paper utilises insights from critical disability studies, critical criminology, disability studies, and special education to identify the complex intersections of individual, social and systemic experiences for this group and to examine risk and success factors in the educational domain. Suggestions are offered for improvement, based on evidence-based practices and promising programs.*

The prevention of youth involvement with the juvenile justice system has traditionally been addressed by different human services disciplines in isolation, but the frameworks informing these practices are not mutually exclusive. Gagnon and Mayer (2004) discuss the use of different frameworks across the disciplines of education, juvenile justice, social work and mental health, and the fact that the frameworks overlap or have the potential for overlap. Working in the Australian context Richards (2011) specifically identifies the operation of both welfare and juvenile justice models. The welfare model assumes that offending behaviour is rooted in factors and experiences beyond the youths' control, and thus considers the support needs of the youth and is focused on 'rehabilitation'. The juvenile justice model, on the other hand, sees offending as an act of free will and deserving of punishment, effectively precluding consideration of the impact of impairment and social context. Richards's points out that in the Australian system, elements of both of these models are present and that the juvenile justice system is more welfare-oriented than the adult justice system.

Significant research has sought to identify the range of factors that put youth at risk for delinquency (Catalano, Loeber, & McKinney, 1999; Hawkins et al., 2000; Loeber & Farrington, 2000). These include individual, family, school, community, and peers, with the number, types, duration, timing, and severity of risks identified as affecting the likelihood of antisocial behavior (Christie, Jolivet & Nelson, 2005). Quinn, Rutherford, Leone, Osher, and Poirer (2005) further identified a range of demographic variables that appear to contribute to delinquency including: (a) ethnic and minority status, (b) poverty, (c) aggressive behaviour, (d) family problems, (e) inconsistent discipline/parenting, (f) physical abuse, (g) substance abuse, (h) living in a high crime area, and (g) a family culture of delinquency.

Youth with disabilities typically have poor academic and social outcomes, including: (a) lower grades, (b) failed courses, (c) below average literacy skills, (d) below average skills in Mathematics, (e) low rates of high school completion, and (f) communication skills deficits (Gagnon, 2008). These students also have high rates of school suspension and expulsion (Beauchamp, 2012). In relation to the specific experiences of young offenders with disabilities in education Leone & Mayer (2004) suggest that many times there is a disconnect between students and the school system, causing student disengagement and problem behaviour. They cite several school factors as possible contributors to this *lack of fit*: (a) the general climate of the school, (b) classroom setting events, (c) teacher-student communication, (d) high-stakes testing, (e) discipline policies, and (f) diversity issues. The argument has been made that such systemic failures to accommodate children with disabilities in the school system lead to disproportionate representation in the delinquency system (Tulman, 2003).



Taken together it is clear that the confluence of offending and disability in some young people is likely to create complex challenges for social services and in particular education providers. In understanding the parameters of reform needed to support young people with disabilities who are at risk of offending, it is necessary to develop a picture of the nature of impairments commonly experienced by this group and the ways that these intersect with social disadvantage and service frameworks to create and sustain pathways to offending and involvement in the justice system.

*Young people with disabilities at risk of offending*

Juvenile offenders with disabilities are not always identified or formally diagnosed, making it difficult to build a profile of exact prevalence and characteristics of the population. However, a picture of impairment in the lives of young offenders is beginning to emerge from a range of research in the US, UK and Australia, which indicates higher than expected prevalence of cognitive disability (Hayes, Shackell, Mottram, & Lancaster, 2007; Salekin, Olley, & Hedge, 2010; Holland & Persson, 2011; Indig et al., 2011); mental health disorder (Teplin et al., 2007; Vermeiren, Jaspers, & Moffitt, 2006); speech, language and communication difficulties (Snow & Powell, 2011); specific learning difficulties (Macdonald, 2012); and social, emotional and behavioural difficulties (Games, Curran, & Porter, 2012; Indig et al., 2011). Overall, mental illness (or emotional disturbance), learning disabilities, and borderline intellectual disabilities have been identified as the most prevalent disabilities found in juvenile correction facility populations (Gagnon & Buttell, 2008).

Cognitive impairments include diagnostic labels such as intellectual disability, learning difficulties, acquired brain injury, foetal alcohol syndrome, dementia, neurological disorders and autism spectrum disorders (NSW Law Reform Commission, 1994). In Australia, as well as the USA and UK, intellectual disability is more common among juveniles under the supervision of the criminal justice system than among adults under the supervision of the criminal justice system or among the general population. For example, three per cent of the Australian population has an intellectual disability and by comparison, 17 per cent of juveniles in detention in Australia have been found to have an IQ below 70, with this group also known to be at a significantly higher risk of recidivism than other juveniles (Frize, et al., 2008).

Mental health disorder is also known to be over-represented among juveniles in detention compared with those in the community. Mental health disorders and more serious mental illness impair the mental functioning of an individual and are characterised by the presence of one or more of the following symptoms: delusions, hallucinations, serious disorder of thought, a severe disorder of mood, and sustained or repeated irrational behaviour (Mental Health Act 1990 (NSW), s11). The relationship between first-stage mental health problems (e.g., conduct disorders) and more severe mental illness has also been associated with contact with the juvenile justice system (Zubrick, Silburn, Burton, & Blair, 2000). The majority (87%) of respondents in the 2009 Young People in Custody Health Survey conducted in NSW Australia were found to have at least one psychological disorder, with only 13% of the population having no psychological diagnosis present. Nearly three in four (73%) young people had two or more psychological disorders present. The two most common psychological disorders were attention or behavioural disorders (70%) and substance use disorders (64%) (Indig, et al., 2009).

Oral language competence is compromised in individuals with speech, language and communication difficulties. Snow and Powell (2008) found that over 50% of a community sample of young male offenders had significant deficits on measures of figurative/abstract language, sentence repetition and narrative language skills, indicating that juvenile offenders are more at risk from language problems than non-offenders. Deficits in communication and social skills, and sometimes willingness to please others with providing positive answers, can cause this population to confess to crimes more quickly, and they are more likely to plead guilty. Difficulties in communicating with their legal representatives may make them less likely to appeal their sentences.

Specific learning difficulties including dyslexia, dyspraxia, and attention deficit disorder have likewise been identified to occur to some degree in at least 20 per cent of the prison population, indicating that people with specific learning difficulties are twice as likely to be sent to prison as those without this condition (The Dyslexia Institute, 2005). Researchers have suggested that rather than assuming a direct link between specific learning difficulties, antisocial behaviour and crime per se, it is the cultural and educational deprivation associated with the presence of specific learning difficulties that may be criminogenic (Svensson, Lundberg, & Jacobson, 2001).

While the above discussion highlights the various conditions that are commonly experienced by young people with disabilities who are at risk of offending, further research indicates that for many young people these issues may be multiple and co-occur in the context of complex social disadvantage. These further dimensions of disadvantage include precarious housing; social isolation; family dysfunction; having a parent who has been incarcerated, having been removed into out of home care and problematic drug and/or alcohol use (Carney & Buttell, 2003; Draine, Salzer, & Culhane, 2002; Hamilton, 2010). A cohort study of people with complex impairment who had been in custody in NSW Australia confirms that this group have a constellation of experiences which appear to combine to make them significantly vulnerable to early, ongoing and intense contact with the criminal justice system (Baldry, Dowse, & Trollor, 2013).

#### *Conceptual and practical approaches*

The impact of multiple impairments coupled with social disadvantage and the role this plays in offending remains poorly understood. What is clear is that this group pose a significant challenge both conceptually and practically. Conceptually for researchers to take account of the dynamic interactional effects of impairment, social disadvantage and offending and practically for service systems and policy makers to design and deliver services which move beyond addressing such issues singly or in isolation from one another.

Conceptually Dowse, Baldry & Snoyman (2009) suggest combining the theoretical approaches available in critical disability studies and in critical criminology to enable new ways of thinking about disability and offending and the social service responses it. They suggest that this approach brings disability to the centre of the analysis and provides a new way to make visible material structures, ideological discourses and experiences of impairment that fundamentally and differentially structure an individual's pathway into, around and often back into the criminal justice system. In this analysis, the offending behaviours of persons with disabilities are not dismissed, ignored or excused. Instead, they are re-situated in individual and social systemic contexts, opening up new ways to identify conceptualisations, structures and interventions that enable the support and development of new individual, systemic and political levels of engagement. This then highlights social support and enables thinking about ways to make it possible for individuals to more frequently take non-offending pathways (Dowse, Baldry & Snoyman, 2009).

Adopting a hybrid critical criminology / critical disability studies approach to the reintegration of young offenders with disability draws out the complex interaction between individual factors relating to impairment, socio-economic, and health, life histories of disadvantage such as institutionalisation, exclusion from education, abuse and neglect, and systemic issues around social exclusion, discrimination and poverty and the sociocultural construction of disability. This moves beyond current thinking on disability and offending that typically focus on the impact of impairment or, at best, impairment and aspects of personal socio-economic disadvantage.

Practically, both youth with and without disabilities involved in the juvenile justice system have poor outcomes in respect to reintegration and recidivism (Gagnon, 2008). The financial and social costs of maintaining these youth in correction facilities are substantial, easily reaching \$1.5 million over a lifetime (Cohen, 1998; Baldry, Dowse, McCausland & Clarence, 2012). With these conceptual and practical caveats in mind the paper now turns to examine risk and protective factors that have been identified for young people with disabilities at risk of contact with the juvenile justice system.

#### *Risk Factors*

Becroft (2006) discusses four categories of factors (in addition to having a disability) that contribute to youth offending: (a) family, (b) community, (c) friends, and (d) school. Although the focus of this paper is on education, none of these factors can be taken in isolation, so each is considered in this section.

Families play a crucial part in determining the outcomes of their children. Becroft (2006) describes the family factors that put children at risk. Many are centred on the interaction of parents with their children and include the lack of strong adult role models, lack of affection from parent to child and low levels of parental support as well as poor supervision, which allow youth to form friendships with undesirable peers. Parents are role models for their children; therefore antisocial behaviour such as substance abuse, violence, and criminal justice involvement on the part of parents put their children at risk for the same. Lastly, Becroft identifies low income as a family-related risk factor.

There is a strong connection between lack of parental supervision and the involvement of children with antisocial peers (McLaren, 2000). When family relations become strained and/or poor, children seek acceptance from friends. As children reach adolescence, it is these peer relationships that hold the most importance to them; therefore having friends who are involved in criminal activity can lead to poor outcomes (Richards, 2011). Friendship issues also include gang involvement, delinquent siblings, and lack of pro-social skills within a peer group (Goldstein, McGinnis, Sprafkin, Gershaw, & Klein, 1997), all factors likely to make vulnerable young people at risk of offending.

Community also plays an important role, as this is where young people socialise and grow up. Youth living in low socio-economic communities with high rates of crime and violence, drug use, and transience have been found to be more likely to offend (Greenwood, 2006). They are also disproportionately victims of crime themselves, identified as a further risk factor for offending (Richards, 2011). Teens who live in communities that provide limited opportunities for recreation or employment are also more likely to offend (Leone, et al., 2003). Lastly, returning youth to their communities upon release from incarceration with no plan for support or change has been associated with recidivism (Gagnon & Richards, 2008).

Leone et al., (2003) discusses several ways that schools and education systems contribute to the criminality of youth, particularly overcrowding and the absence of clear rules and policies and ineffective follow-through when rules are broken. However, others believe that the immediate and most obvious contribution to youth offending made by schools is their inability to keep all students engaged. Becroft (2006) estimates that over 80% of offending youth are not engaged in the school system. This disengagement may be due to lack of enrolment, suspension, expulsion, truancy, or waiting for a place at an alternative setting. Suspension and expulsion are of particular concern, as not only have they been found to be ineffective practices that do not target the underlying cause of student misbehaviour, but there is also a high correlation between suspension/expulsion and youth offending (Daly, 2013). Becroft (2006) cites truancy as another major contributor to risk of offending whereby students who are habitually truant typically fall behind in their academics and are more likely to drop out; abuse drugs and alcohol; experience or commit violence; and become delinquent. Rather than find ways to keep them engaged or re-engage them in their education, many times education systems exclude such students further with 'solutions' such as alternative schools, correspondence schools, and expulsions.

#### *Success Factors*

There are of course many young people with disabilities who do not come in to contact with the juvenile justice system. It is reasonable to assume that their experience may be the inverse of those who offend. Examining both the risk factors and predictors of success can assist in being proactive and designing intervention. Parents of successful youth: (a) encourage and reward good behaviour, (b) know where their children are, (c) know who their friends are and monitor those friendships, (d) have a consistent, positive approach to discipline, (e) spend time with their children pursuing hobbies, (f) are involved in their children's education, and (g) show their children affection (McLaren, 2000).

As detailed above, involvement with antisocial peers is a precursor and risk factor to youth offending. Strong family bonds go a long way to supporting adolescents in participating in appropriate peer relationships, particularly when parents monitor their children's activities closely. Young people who are positively engaged with school are also less likely to develop friendships with antisocial peers. Finally, having the ability to communicate well (a skill which many students with disabilities do not possess) is a strong predictor of success in this area (McLaren, 2000).

Involvement in community activities decreases the chances that a young person will become involved in criminal activity (Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002). Arthur et al. (2000) discuss the phenomenon of 'social bonding,' which describes the quality of the relationships a young person has with adults, school and the community. The quality of social bonding is increased through community participation, for example in a church, social or sporting group. Youth with high levels of social bonding are less likely to commit anti-social acts, as they are more likely to be aware of the consequences of jeopardising their relationships with adults in the community.

Involvement in education is a powerful protective factor against involvement in the juvenile justice system (Arthur, et al., 2002). Simply attending school on a regular basis reduces the chances that young people will get involved in criminal activity, even if they are not achieving academically (McLaren, 2000). School involvement contributes to students feeling that they are part of the wider social fabric.

Students with disabilities who receive appropriate educational supports are more likely to stay engaged with school, and therefore less likely to offend (Arthur, et al, 2002).

The following evidence-based educational interventions are well aligned with Dowse Baldry & Snoyman's (2009) theoretical analysis and seek to support the engagement of at-risk youth with disabilities. These interventions were designed to meet the individual social, academic, and emotional needs of all students. Proactive school and classroom behavioural support make it possible for individuals to more frequently take non-offending pathways (Leone & Mayer, 2004).

#### *Evidence-based Educational Interventions*

Leone and Mayer (2004) made a series of suggestions to prevent *lack of fit* and student disengagement with their education and the school system. The first of these is to ensure that the school's supports are congruent with their academic mission. In other words, if high achievement is mandatory then supports must be in place for students who will be at risk of not meeting this standard, including some students with disabilities. Secondly, school discipline is identified as key – it should be proactive, consistent, and positive. Disciplinary policies and practices should have a solid research base. Although it can take years to fully implement and requires a large commitment, positive behaviour interventions and supports (PBIS) are the most recommended, as they have a strong evidence base (Sugai & Simonsen, 2012).

Positive behavioural interventions and supports (PBIS) is defined by Sugai and Simonsen (2012) as: “an implementation framework that is designed to enhance academic and social behaviour outcomes for all students by (a) emphasising the use of data for informing decisions about the selection, implementation, and progress monitoring of evidence-based behavioural practices; and (b) organising resources and systems to improve durable implementation fidelity (p.1).” PBIS has been widely implemented in the US, the UK, and is gaining momentum in Australia. The following evidence-based practices can be successfully integrated into the PBIS framework in the classroom and school to keep students engaged and prevent behavioural problems.

Having clear, well-defined school and classroom expectations is one of the first steps to maximizing engagement and preventing off-task and disruptive behaviours. These expectations should be posted, taught, reviewed, and referred to frequently (Cumming, 2013). During classroom instruction, maximising student participation is crucial. This can take the form of passive participation (listening) or active participation (contributing to discussion, writing answers on paper). If students are actively engaged in instruction, then it is difficult for them to engage in unwanted behaviours such as talking out or leaving their seats (Ornelles, 2007). Providing students with increased opportunities to respond will provide them with the opportunity to be more actively engaged during academic instruction (Simonsen, Fairbanks, Briesch, & Myers, 2008). Strategies to actively involve students in instruction include: (a) the use of response cards, (b) systematic direct instruction, (c) classwide peer tutoring, (d) guided notes, and (e) computer assisted instruction (Cumming, 2013).

Alberto and Troutman (2009) recommend the use of research-based classroom management strategies for students with challenging behaviour. These strategies include: (a) specific and/or contingent praise, (b) class-wide group contingencies, (c) behavioural contracting, and (d) token economies. Teachers should also use contingent and specific praise to recognise student achievement in both academics and behaviour.

Token economies, behavioural contracting and class-wide group contingencies and are often used to encourage desired behaviours such as positive verbal interactions, appropriate classroom behaviour, student attention, peer social acceptance, and assignment completion (Simonsen, et al., 2008). Simonsen, et al., (2008) also found that these strategies decreased negative verbal interactions, transition time, inappropriate behaviour, talk-outs, and out of seat behaviour. A token economy is a symbolic reinforcement system based on a monetary system. In this system, students earn tokens or points in exchange for performing pre-determined tasks and behaviours (Zirpoli and Melloy, 2007). Behavioural contracting is simply a written contract between a student and a teacher regarding the performance of specific target behaviours in exchange for specific consequences (Zirpoli & Melloy, 2007). Classwide group contingencies operate in much the same manner as a token economy but on a group rather than an individual scale.

Cognitive Behavioral Interventions (CBI) is an evidence-based approach that is defined as: *a behavior modification approach that promotes self-control skills and reflective problem-solving strategies.*

*Interventions combine elements of behavior therapy (modelling, feedback, reinforcement) with cognitive approaches (problem solving, self-monitoring, self-instruction, communication skill building, relaxation, and situational self-awareness training) to teach individuals to recognize difficult situations, think of possible solutions, and select the most appropriate response* (NICHCY, 2010; Research terms, Cognitive Behavioral Interventions). Strategies used in this approach include problem solving, self-monitoring, self-instruction, communication skill building, relaxation, and situational self-awareness training. Social skills instruction is an effective intervention that is based on CBI and used to support students with disabilities in overcoming social interaction deficits (Cook, Gresham, Kern, Barreras, Thornton, & Crews, 2008). The most effective strategies for teaching social skills include a combination of modelling, coaching, and practising (Gresham, 2002).

Functional behaviour assessment or FBA is a widely accepted data-based assessment and decision making practice that is used to determine the purpose or function of behaviours (Horner, Sugai, & Anderson, 2010). Once the functions of the behaviour(s) are determined, a Behaviour Intervention Plan is developed to support the student with disabilities in developing more appropriate behaviours that meet the same function as the inappropriate behaviour.

Students with disabilities involved in any educational system, including those of juvenile justice systems should have an individual education plan or IEP. This allows relevant information to be shared, so each student with disabilities can be properly supported to achieve their academic, behavioural, and vocational goals (Government of South Australia, 2014). The Australian Government prescribes at a minimum, that this plan should include: (a) academic goals, (b) social-emotional goals, (c) strategies to support the student in meeting these goals, (d) who is responsible for each part of the plan, and (e) progress evaluation methods and time lines. A transition plan as well as a behaviour intervention plan (if applicable) may be part of the student's IEP also. Unfortunately, not all Australian states and territories require schools to create IEPs for students with disabilities, so there is much inconsistency with this practice among schools and states.

#### *Improving Results through Collaboration*

Among the best practices identified by the NSW Parliament Report (2012) belongs collaboration. The current alarming recidivism of students with disabilities back into the juvenile justice system demonstrates a crucial need for intervention. Although programs supporting youth offenders exist in education and justice systems, they often exist in isolation, with stakeholders from one system being unaware of programs available in the other system. Various research results stress the importance of collaborative efforts between juvenile justice, education, workforce development, mental health, community and youth and families. This suggested collaboration can be used to help combat the high recidivism rates of youth with disabilities through careful planning of each student's education and/or transition from the correctional facility back into his or her home, school, and community environments.

Gagnon and Mayer (2004) stress the importance of collaboration during transitions both into and out of correctional settings. Collaborative transition planning should ideally begin before the student transfers out of his or her home school and into a correctional setting (EDJJ, 2003). They posit that in order to provide an appropriate education for students with special needs, it is imperative that any educational documentation (Individualised Education Plans, health records, etc.) transfers with the student in a timely way. This will ensure uninterrupted supports and services for the student. Students in these alternative settings should also be provided with a rigorous curriculum to prepare them for their return to their home schools, so communication between the two entities is crucial from the beginning (Gagnon & Mayer, 2004).

Many times, students have difficulty re-entering the *real world* after becoming accustomed to the structured, institutional environment of the penal system (Griller-Clark, Rutherford, & Quinn, 2010). Careful transition planning can smooth the transition for the student and those involved with him or her. First and foremost, a transition team must be formed. This team consists of, at a minimum, the student, family members, representative from the justice system, and a representative from the school the student will be attending upon his or her release. Other members could include people that provide support services for the student, such as: community members, potential employers, special educators, and medical or psychological professionals (EDJJ, 2003). The team then meets to discuss the student's current strengths and support needs, and builds upon those strengths to design a transition plan. The student's role in this process cannot be underestimated, as, if the decisions are made for the student rather than by and with him/her, the efforts will be likely to be unsuccessful.

The transition plan should include two major categories, planning and services. Planning consists of identifying goals and benchmarks, designing implementation, deciding who is responsible for each part of the plan, and determining how and when progress will be monitored. Gagnon & Mayer (2004) also recommend that in addition to traditional academics, the service part of the plan include services that assist students with adaptive behaviour, such as: (a) vocational education, (b) social skills training, (c) anger management therapy, (d) independent living skills, (e) health education, and (f) parenting classes. They suggest that students have the opportunity to access information on transition-related topics, such as community services, mental health services, and financial support. This can be accomplished through the use of a transition library, limited computer/Internet access, and/or visits from community members.

Other recommendations for facilitating the successful transition of students with disabilities from a juvenile corrections setting back into the community are apparent in the literature and are related to support. Students with disabilities should receive targeted support for at least 12 months, as research shows that they are less likely to reoffend if they haven't done so for a year after they are released. Unrhu and Bullis (2005) suggest that students should be supported by a transition specialist who works directly with the student and collaborates with individuals and organisations involved in supporting the student. This will provide the student with a *wraparound* of support services, which is crucial, as youth who receive social services after they transition out of the corrections system have better outcomes than those that do not (Unrhu & Bullis, 2005).

Bertram, Suter, Burns, and O'Rourke (2010, p.713) define wraparound services as, "a community-based, family-driven collaborative team planning process that engages informal supports and formal services with families in culturally competent, individualized, strengths-based assessment and interventions." The wraparound process has emerged as best practice for students with disabilities and co-morbid mental health and/or behavioural issues (Walker & Sanders, 2011). The transition specialist can also act as the coordinator of wraparound services both while the student is in custody and upon release. Parents, teachers from the correctional facility, teachers at the student's home school, representatives from vocational service agencies, social services, and medical personnel may be involved in providing key services such as schooling, employment, mental health services, health care and housing.

#### *Where to from here?*

Youth with cognitive disabilities, mental health disorders, learning difficulties, speech, language and communication disorders; and social, emotional and behavioural difficulties are at a higher risk of offending and being incarcerated when compared to those without disabilities. A number of risk factors precipitating this have been discussed in this paper. While there is rich literature presenting both success factors that contribute to minimising the risk of offending, and evidence-based practices identified as effective for this population, a significant gap between theory and practice remains. To address this systemic changes are needed.

Firstly, there is a need for collaboration between sectors including education, juvenile justice and welfare. This collaboration includes shared access to a student's documentation across sectors, which will prevent isolated efforts to support the student, often repeating approaches that have proven unsuccessful in the past. As identified by the report of the NSW Parliament Standing Committee on Social Issues (2012), *there are inadequacies with the transfer of information about the strengths and needs of individual students, with the result being that families have to re-tell their story every time they apply for support or go through a transition.* (p.27) This is especially problematic, as access to information is crucial in order to develop a support plan 'made-to-measure' for each student.

Secondly there are a number of changes required in education sectors more generally. In spite of Australian legislation supporting inclusive education (*Disability Discrimination Act, Disability Standards for Education*), all levels of the educational system still continually fail students with disabilities and mental health issues. In order for inclusion to be successful, schools must employ practices that keep students engaged, and instruction must be differentiated to address diverse student needs. Yet, as demonstrated above, suspension, and expulsion are the most commonly used approaches with at-risk youth. The NSW Standing Committee on Social Issues (2012) indicates that 88 % of youth in custody had been suspended from school at least once, and 47% had been excluded from school. While the Standing Committee states in this Report that it would *support a review of DEC's policy regarding suspension and expulsion of students in these additional needs groups*, it was also highlighted that this is *beyond the terms of reference for this Inquiry* (p. 93). This raises an important question: Whose responsibility is it? Is it up to the various state departments of education to initiate the revision of their

own policies regarding suspension and expulsion? Or should a national approach be taken in this matter? In order to address the issue of suspensions and expulsions as ineffective, professional development and pre- and post-service training should be designed to raise teachers' and school leaders' awareness of ineffective vs. evidence-based practices and how these can be implemented by all teachers.

Thirdly, the role of individual educational plans is grossly underestimated in Australia. While mandated by law in number of developed countries (e.g., U.S.A., Great Britain, Czech republic), a number of Australian states and territories (e.g., New South Wales) leave the decision about developing individual educational plans to individual teacher/school. The findings of the NSW Parliament Report (2012) indicate that many students with disabilities do not have individual educational plans, and if these are developed, these substantially differ in quality. Furthermore, even if an individual educational plan is developed, a student is rarely involved. Follow-up IEP meetings with all involved stakeholders are also rather rare.

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**BAHAMIAN TEACHERS' PERCEPTIONS OF INCLUSION AS A FOUNDATIONAL PLATFORM FOR ADULT EDUCATION PROGRAMS**

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*Despite the paradigm shift globally regarding the adoption of inclusive education, teachers still have varying preconceived misconceptions about its successful implementation and practices in the general education classroom. This qualitative study focused on teachers' perception of adapting inclusive education policies and procedures in The Bahamas and its implication for adult education. The participants of the study were teachers (n=18) in the K-12 educational system in The Bahamas. The findings from this study revealed that there was a vast misconception of the definition of inclusive education. Secondly, five overarching factors that influenced teachers' perception of inclusive education were (a) lack of training, (b) insufficient resources and (c) administrative support, (d) teachers' attitudes and (e) inadequate /misconception of information regarding inclusive education. The study further provides an overview for implications for education and training of general education teachers charged with the responsibility of accommodating children with disabilities in regular/inclusive classrooms.*

Inclusive education is on the global agenda to attract the involvement and collaboration of all stakeholders. The support for this action is being guided through the principles of The Salamanca Statement (1994). Legislation by national, regional, and international agencies is aggressively enacting policies and laws to support and promote the education of all children in the general education setting. Teachers are perceived to be an integral component in the implementation of inclusive education (Haskell, 2000). Research communicates that teachers' perception are the key to the success of inclusive programs, as they are critical to the process of including students with disabilities into regular classes. It is important to examine the attitudes of educators toward the inclusion of students with disabilities into regular settings as their perceptions may influence their behavior toward and acceptance of such students (Hammond & Ingalls, 2003). The success of inclusive programs may be at risk if regular classroom teachers hold negative perceptions toward the inclusion of students with disabilities (Van Reusen et al., 2001). Negative perceptions of inclusive education may become obstacles, as general education teachers attempt to include students with disabilities (Cawley, Hayden, Cade, & Baker-Kroczyński, 2002).

The most salient trend in education involving individuals with disabilities is that of inclusion. Teachers are regarded as a key component in the educational system. However, instruction in the general education classroom is influenced by the individuals being taught. The need to sensitize educators to this perplexing issue is paramount to the success of all students. If teachers were more receptive toward inclusion, student achievement, socialization, skill acquisition, and access to education would increase for students with disabilities. Findings from Andrews and Frankel (2010) recognized that inadequate training and skills required to teach students with special needs are important in the implementation of inclusive education programs.

On this premise, the study was conducted to examine teachers' perception of inclusive education and its implication for adult education. For the purpose of this study, adult education encompasses continuing education with a focal point on professional competence and best practices. It is envisaged that the findings from this study will have significant impact on adult education as it relates to inclusive

education The Bahamas. Moreover, it will inform policy makers of designing a framework to deliver inclusive education programs necessary to increase the achievement of students in regular classes. The results will also inform college administrators of practical internship experiences that would enhance the preparation of our future teachers. Finally, the study aims to sensitize readers about teachers' perception on inclusive education and the implication for adult education.

#### *Theoretical Framework*

The theoretical framework that acts as a foundational platform for this study is Andragogy (Knowles, 1980). The term andragogy, which is influenced by humanistic education, is defined as *the art and science of helping adults learn* and is often utilized to distinguish the difference between education of adults and children (Davenport, 1987). There have been a myriad of discussions regarding the concepts of andragogy and pedagogy and its application and implication to adult learning. Likewise, much dialogue defining andragogy as being teacher centered compared to pedagogy which is learner centered (Hunter-Johnson and James 2012; Shipton, 2011). The andragogical approach, which is reflective of the andragogical orientation, is grounded on four assumptions developed by Knowles (1980) that are often categorized as the principles of adult learning. Such assumptions are grounded on an individual's maturity. Knowles (1980) believed that as an individual matures: (1) their self-concept moves from one of being a dependent personality towards being a self-directed human being; (2) they accumulate a growing reservoir of experience that becomes an increasingly rich resource for learning; (3) their readiness to learn becomes oriented towards the developmental task of their social role and (4) their time perspective changes from one of postponed application of knowledge to immediacy of application and accordingly their orientation towards learning shifts from one of subject-centredness to one of performance-centerdness (1980, pp. 44-45).

The theory of andragogy which delineates principles of adult learning is most appropriate for this study as it provides an underpinning cementing the professional/continuing education of all general educators. Further, it provides effective strategies to ensure successful development and implementation of an adult learning environment.

#### *Literature Review*

Educating students with disabilities alongside their peers in general education classrooms has increased significantly over the past decade, affecting all aspects of schooling (Ainscow & César, 2006; Cook, Cameron, & Tankersley, 2007). Romi & Leyser's (2006) study argues that not only do teachers' perceptions of inclusive education affect inclusive practices, but the role of teacher educators in preparing new graduates to work in inclusive classrooms serve as a critical component in successful inclusion as well.

According to Cushner, McClelland, and Safford (2012), inclusive education refers to *the practice of including another group of students in regular classrooms: students with physical, developmental, or social-emotional disabilities, and those with chronic health problems* (p. 403). Since the idea of inclusive education is to provide whatever adaptations are needed in an effort to ensure that all students (regardless of their disability) can participate in all classroom experiences, and as much as possible, in the same manner as everyone else, the efficacy of inclusive educators' preparation for working in inclusive classes is of great importance.

The review of literature compares primary and secondary teachers' perceptions of inclusive education, in addition to explaining the factors that influence these teachers' perceptions. The review comprises three sections: The first section provides a cross section of recent studies that have examined primary teachers' perceptions of inclusive education and the influencing factors. The second section highlights recent studies that have examined high school teachers' perceptions of inclusive education, in addition to the influencing factors as expressed by these teachers. Finally, the review of literature explores the importance of adult education programs for primary and secondary teachers towards the accommodation with children with special needs in the regular education inclusive classroom.

It is crucial to ascertain teachers' perceptions of inclusive education so that policy makers can address existing deficiencies in an effort to ensure successful inclusion of all students with special needs. It is equally important that adult education programs are designed to adequately train teachers to operate efficiently within inclusive classroom settings.

*Inclusive Education Research*

Utilizing the assumption as a backdrop that the successful implementation of any inclusive education policy is largely dependent on educators being positive about it, extensive research has sought to examine teachers' perceptions towards the integration and, more recently, the inclusion of children with special educational needs in mainstream primary and secondary schools. (Ali, Mustapha & Jelas, 2006; Loreman, Forlin, & Sharma, 2007; Ross-Hill, 2009; Jerlinder, Danermark, & Gill, 2010; De Boer, Pijl, & Minnaert, 2011). Findings of these studies were parallel in terms of the influencing factors of the teachers' perceptions of inclusive education.

Research conducted by Ali, Mustapha & Jelas (2006) and Loreman, Forlin, & Sharma (2007) revealed that general education teachers were unwilling to participate in the practice of inclusive education due to insufficient training in special education. The teachers surveyed in these studies expressed concerns regarding their lack of knowledge about, and experience with, various disabilities. In comparison to the findings of Ali, Mustapha & Jelas (2006) and Loreman, Forlin, & Sharma (2007), Ross-Hill (2009) found that many high school teachers were more apprehensive towards the practice of inclusion, when taking into consideration the amount of special education training they had received. Teachers who reported higher levels of special education training, or experience in teaching students with disabilities were found to hold more positive perceptions toward the practice of inclusive education. Research in several countries (Forlin, 2006; Romi & Leyser, 2006; Winter, 2006); Ashman & Elkins, 2009; Hunter-Johnson, Newton & Cambridge-Johnson, 2014) shows that many school teachers have limited skills to teach in inclusive classrooms; this, consequently, translated into serious concerns on the part of teachers to be engaged in inclusive education settings.

*Primary Teachers' Perceptions of Inclusive Education*

David & Kuyini (2012) support the view that teachers' negative perceptions towards disability lead to low expectations from their students which result to decreased learning opportunities and low academic performance. Avramidis and Norwich (2010) discovered that teachers who have no direct experience with integration, have very negative perceptions whereas those with more experience with disabled people adopt more positive perceptions towards integration. According to Avramidis and Norwich (2010), training in special education appeared to lessen pre-service teacher's concerns regarding inclusive education. Subban and Sharma (2006) support that teachers who reported having undertaken training in special education were found to hold more positive perceptions about implementing inclusive education. Loreman, Forlin and Sharma (2007) reported similar findings which showed that teachers' perceptions of inclusive education were negatively impacted by their training, or lack thereof, in special/inclusive education.

In contrast, Ali, Mustapha, and Jelas (2006) found that in general, teachers held positive attitudes towards inclusive education. According to the results of their study, the teachers agreed that inclusive education enhanced social interaction and inclusion among the students and thus minimizing negative stereotypes on special needs students.

*Influencing Factors of Primary Teachers' Perceptions*

An international study of four countries by Loreman, Forlin and Sharma (2007) found that factors such as close contact with a person with a disability, teaching experience, knowledge of policy and law, and confidence levels had significant impact on student teachers' attitudes. Research regarding teachers' perceptions of inclusive education has provided varied results. Some studies suggest perceptions toward inclusive education were strongly influenced by the nature of disabilities (Avramidis and Norwich, 2010), while other studies have indicated that teachers were more positive about including only those children whose characteristics were not likely to require extra instructional or management skills on the part of the teacher (Hwang & Evans, 2011).

Numerous studies revealed that the teachers' reluctance towards the practice of inclusive education was due to a lack of training in the area of inclusive education (Muhanna, 2010; Kilanowski-Press, Foote & Rinaldo, 2010; Bradshaw and Mundia, 2006). Bradshaw and Mundia (2006) assert that teachers may welcome all learners but feel *ill-equipped* at times to deal with the diverse range of needs. Muhanna (2010) concurs that teachers' feelings of inadequacy are potential barriers to inclusive education.

*High School Teachers' Perceptions of Inclusive Education*

Several studies have shown that primary and high school teachers share similar perceptions regarding inclusive education; some negative, and some positive as well (Dupoux, Wolman, & Estrada, 2005;

Barco, 2007; Ross-Hill, 2009). Barco's (2007) findings suggested that secondary teachers held both positive and negative perceptions toward inclusion; these perceptions varied when it came to issues of making accommodations and modifications for disabled students, whether part time or full time in the inclusive classroom setting. Similarly, Wiggins (2012) found a significant relationship between high school teachers' perceptions of inclusion and classroom setting. This researcher concluded that teachers with experience in teaching within inclusive classrooms held more favorable perceptions toward inclusive education than those teachers who did not teach in inclusive classrooms.

In comparison to Ross-Hill (2009), Dupoux, Wolman, and Estrada (2005) found high school teachers' perceptions of inclusive education to be more negative than those of primary teachers towards mainstreaming students with learning disabilities. However, there did not seem to be any significant association between grade levels taught and teacher perceptions toward inclusive education. Bradshaw (2003) and Barco (2007) concur that teachers' feelings of inadequacy are potential barriers to inclusive education. Barco (2007), in agreement with Ali, Mustapha, and Jelas (2006), found high school teachers' perceptions toward inclusive education to be more positive, alluding to the practice as being beneficial. Both studies emphasize, however, that the success of any inclusive education program depends upon the perceptions of the teachers in the classroom.

#### *Influencing Factors of High School Teachers' Perceptions*

A willingness on the part of teachers to support all children in the mainstream classroom, including children with special needs, is the hallmark of inclusive education. According to Avramidis, Bayliss, & Burden (2010) high school teachers have diverse conceptualizations of inclusive education, and some challenges to the success of implementing such a practice include issues of knowledge, training, and resources.

As with the study conducted by Avramidis, Bayliss, & Burden (2010), De Boer, Pijil, and Minnaert (2011) also suggested that educational environment-related variables, such as the availability of physical and human support, were consistently found to be associated with attitudes to inclusion. Findings revealed by Slavica (2010) concur with those of Hwang & Evans (2011), which found that a lack of support by administrators influenced negative perceptions in teachers towards inclusive education. As with primary teachers, researchers (Gaad & Khan, 2007; Kalyva et. al., 2007) have found that insufficient teacher preparation and training pose a hindrance to the process of inclusion at the high school level as well.

#### *Importance of Adult Education Programs for Teacher Preparation in the Inclusive Classroom*

Underlying inclusive education is the assumption that the general classroom teacher has certain knowledge and understanding about the needs of different learners, teaching techniques and curriculum strategies. According to Florian and Rouse (2009), *The task of initial teacher education is to prepare people to enter a profession which accepts individual and collective responsibility for improving the learning and participation of all children* (p. 596).

Studies suggest (Bailleul et al., 2008; Florian and Rouse, 2009) that the quality of the teacher contributes more to learner achievement than any other factor. Similarly, Reynolds (2009) concur with Bailleul et al., (2008) in proposing that the need for 'high quality' teachers equipped to meet the needs of all learners becomes evident to provide education for an inclusive society. Reynolds (2009) argues that it is the knowledge, beliefs and values of the teacher that coincide to create an effective learning environment for all learners, making the teacher a critical influence in education for inclusion and the development of the inclusive school.

A major component of an effective educator involves understanding how adults learn best (Lieb, 2008). The role of teachers today in inclusive education requires extensive background knowledge about various types of learners and their specific needs. As research indicates that the more preparation prospective teachers receive, the more likely they are to remain in the profession (Darling-Hammond, 2003); this further reinforces the need for effective teacher education which takes account of the increasing diversity of needs in today's classrooms.

According to Bourdon and Roy (2004), significant challenges confronting adult educators include a diverse adult population presenting a variety of educational needs, and the establishment of new training programs stemming from the education reform in common basic education, i.e., programs that are based

on a change in adult education practices, including the diversification of adult education approaches and the classification of disciplines.

These challenges, according to Saint-Laurent (2007), raise a question concerning teachers' ability to face these changes, in terms of their training and past experience. Similarly, Bourdon and Roy (2004) found that the initial and continuing training in adult education, especially for student teachers in the field of special education, posed an even greater challenge on its own. The problem of adult education is treated from the standpoint of the training of future teachers of adult learners, as well as that of adult learners said to have *low schooling* and whose characteristics lead to a reflection on the content and training devices offered to their current and future teachers (Molina & Villemagne, 2011).

The education of teachers and school personnel is the primary way of ensuring that evidence-based teaching strategies are applied when working with students with special needs (National Research Council, 2001). Teachers have the advantage of directly being able to identify each student's specific needs and goals; when they have the knowledge of evidence-based practice in the classroom, they are better equipped to match the strategies to the individual needs of each student served (Simpson, 2005), thereby ensuring success for all students.

Researchers suggest (Bailleul et al., 2008; Reynolds, 2009) that the knowledge constructed by future teachers is acquired not only in the formal context of initial training, but also in the field, in contexts other than the purely academic setting. In this frame, the implementation of practical activities involving the application of diverse knowledge has its place in a training curriculum for inclusive educators.

With the current nature of teacher preparation programs and their reported limitations in equipping teachers for inclusion, factors associated with teachers' attitudes such as those identified in the present research (i.e., discomfort, fear, teaching experience, knowledge of policy and law and uncertainty) may be important considerations in programs (Loreman, Forlin and Sharma, 2007). The McKinsey Report (2007) examined data from 25 school systems and concluded that the high-performing school systems *get the right people to become teachers; they develop these people into effective instructors, and they put in place systems and targeted support to ensure that every child is able to benefit from excellent instruction* (p. 37).

Schools and districts must determine how to provide the most effective training prior to placing para-educators with students in general education classrooms and how to provide ongoing supervision and support to allow para-educators to provide quality services. Providing release time for special educators to initially acquaint para-educators with the student before they enter the classroom may represent one way to do this. Scott, McGuire, & Shaw (2006) suggest that the Universal Design for Instruction is an avenue by which adult instruction in post-secondary education may be facilitated; it requires that faculty anticipate student diversity in the classroom and intentionally incorporate inclusive teaching practices.

Another approach for training general educators in inclusion, which may help to redress the disjointedness of general and special education, calls for infusing special education content and curriculum into general education courses (European Agency for Development in Special Needs Education, 2010). Providing all teachers with disability awareness training and methods for making school subjects more inclusive (especially physical education) would greatly facilitate a more equitable learning environment.

The review of literature assumes that teacher education for inclusive education should prepare teachers to engage with learner diversity arising from age, gender, sexual orientation, ethnic, cultural, linguistic or religious background, socioeconomic status, disability or special educational needs. The research findings lead to the recommendation that teacher training institutions emphasize teaching skills that would enhance teacher trainees' capacity to support students with disabilities in inclusive classrooms.

## Methods

### *Study Setting*

Within the archipelago of The Bahamas, The Ministry of Education is the premier institution exclusively responsible for the educational system. Throughout the 700 plus islands and cays, there are approximately two hundred and six schools in the school system; one hundred, sixty-one are fully maintained by the government and forty-five are private schools. However, initially, there were minimal special education schools.

There has been much discussion within The Bahamas, regarding special education and by extension, the all inclusive classroom. However, it was not until the establishment of The Education Act (1962) that special education and special services for children with special needs were formalized and delineated (Stubbs, 2008). Since then, there has been much progress regarding the advancement of specialization and the all inclusive classroom. Such initiatives includes but are not limited to: (a) in 1994, The Bahamas commitment as one of the 92 governments that agreed to provide inclusive education according to the Salamanca Statement and Framework for Action which advocate inclusion (b) In 2002 the launching of the National Commission on Special Education which revealed a need for 5000 plus children with special needs in need of special services. This was a pivotal discovery which led to the decision that children with special needs would no longer be denied access to general education classrooms (Stubbs, 2008). (c) The government of The Bahamas in conjunction with the Inter-Development Bank begun a myriad of initiatives promoting the inclusion of special education in the mainstream education setting. At the preschool and primary level, there was the introduction of a special education unit that was dedicated specifically for children with special needs dependent upon their level and type of disability while still allowing them to be amalgamated in mainstream school. (d) Most recently, 2013 the government of The Bahamans sponsored its first graduate cohort of special education teachers specializing in Literacy and Inclusive Education at the local college.

#### *Study Design and Data Collection*

The research methodology used in this study was a qualitative phenomenological design which was reflective of semi structured interviews with participants using preset questions outlined by the researchers. Data was collected from 18 public school teachers (ten elementary and eight secondary) throughout the New Providence District in The Bahamas. The interviews were tape-recorded and immediately transcribed. Analysis was conducted through the process of open coding (Miles & Huberman, 1994; Strauss & Corbin 2010). Working within the research structure provided by the research objectives and the conceptual framework, transcribed data was qualitatively analyzed through open coding to establish themes and main concepts. Recurring topics in the text were recognized as themes and sub-themes. A table of central themes and sub-themes was constructed. This process allowed a deeper understanding and explanation of issues that were being studied. To ensure greater validity and reliability a peer reviewer read through the data to ensure themes and categories corresponded with the research questions and were properly analyzed. The guiding research questions were: (1) What are teachers' perceptions towards Inclusive Education? (2) What are some possible factors that influence teachers' perception towards inclusive education? (3) What are some recommendations for promoting adult education practices for inclusive education teachers at the elementary and secondary school level?

#### *Participants*

Andrews and Frankel (2010) asserted that convenience sampling is the apposite sampling technique regarding the feasibility and access to participants. On this premise, convenience sampling was employed. A group of teachers ( $n=18$ ) were selected all of which met the following inclusion criteria: must be employed in the public school system as a teacher (primary or secondary), a minimum of five years teaching experience, currently posted at a school within the New Providence District and both genders. All participants were informed of their rights regarding the Institutional Review Board.

#### *Findings*

There were 18 participants, 12 females (67%) and 6 males (33%) that were interviewed for this study ( $n=10$  primary school teachers and  $n=8$  secondary school teachers). The educational level of the participants varied including Bachelors Degree 13 (72%), Masters Degree 4 (22%) and one Doctorate Degree (5%). Professional years of service varied from 5 years (17%), 6-10 years of service 5 participants (28%), 11-15 years of service four participants (22%), 16-20 years of service 5 participants (28%) and one participant that had over 20 years of service (5%). See Table 1 for participants' demographic information.

#### *Research Question 1. What are teachers' perceptions towards Inclusive Education?*

The results from the study revealed conflicting perceptions towards inclusive education at a primary and secondary level. At the primary level, the participants were very candid with their responses. However, while most of the teachers (60%) demonstrated negative attitudes towards the implementation of inclusive education within primary schools, some of the teachers (30%) displayed mixed feelings about the practice, and one teacher (10%) firmly support the practice of inclusive education. In general, the teachers viewed the idea of inclusive education as an extremely difficult feat due to the myriad deficiencies within the public education system, which, in their opinion, would impact the success of

inclusive education. Teachers reported that at this present time, *it is not feasible for the government of The Bahamas to venture into such an undertaking because there are too many concerns in dire need of immediate resolution* (Hunter-Johnson, Newton and Cambridge, 2014).

**Table 1. Participants Demographic Information**

Variable	<i>n</i>	%
<b>Gender</b>		
Males	6	33
Females	12	67
<b>Educational Level</b>		
Bachelors Degree	13	72
Masters Degree	4	22
Doctorate Degree	1	5
<b>Years of Service</b>		
5	3	17
6-10	5	28
11-15	4	22
16-20	5	28
>20	1	5

*N*=18

Contrary, at the secondary level, revealed that teachers at the high school level in The Bahamas demonstrated moderately positive attitudes toward inclusion and was consistent with previous studies conducted internationally (Campbell, Gilmore, & Cuskelly, 2003; Gal, Schreur, & Engel-Yeger, 2010; Monsen, & Frederickson, 2003). The majority of participants (62.5%) made statements which revealed that they had positive views toward inclusion. One participant expressed that, *I think it is an exceptional idea because children can learn from each other and teachers can collaborate on best practices*. Subsequently, some teachers (25%) welcomed the idea of inclusion, but exhibited mixed feelings toward the idea of inclusive education. The teachers believed that certain factors were necessary for inclusion to be effective. Additionally, one teacher commented, *I believe inclusive education can be embraced in all stages. If disabilities are categorized and some of the less severe disabilities can initiate the process then we can gauge how effective it is*. Subsequently, one participant (12.5%) perceived inclusion as negative and in irate voice expressed, *I did not train to teach students with special needs because I don't have the patience*. This comment suggests that training will play a critical role in how teachers' perceive inclusive education.

*Research Question 2. What are some possible factors that influence teachers' perceptions towards inclusive education?*

The data revealed that there was consistency among the responses of the primary and secondary school in regards to the factors which influenced their perceptions towards the implementation of inclusive education (a) lack of teacher training, (b) insufficient resources, (c) limited administrative support, (d) teachers' attitudes, and (e) inadequate /misconception of information regarding inclusive education.

#### *Lack of Teacher Training*

Training plays a critical role in the effective implementation of inclusive education. Much discussion was noted regarding the lack of training of teachers to effectively teach an all inclusive education class and its implication not only regarding the students but for the teachers. When questioned, one teacher stated *I am not trained to teach special needs students; I have a difficult time teaching normal students*. Another participant responded, *teachers need to be trained about the different disabilities and strategies or interventions. Further, they would need to be trained on how to develop a curriculum for their students that would speak to the students' needs and assessment*. Training needs concerns of teachers were not only focused on their training with regard to their ability to teach but also to identify appropriate instructional techniques and assistive learning resource as a result of proper training to ensure learning is evident. One participant stated, *If I am not trained to the point of being able to identify*



*various disabilities in students, how can I be expected to adapt my teaching methods to cater to the needs of students with various disabilities?*

#### *Insufficient Resources*

Both primary and secondary teachers identified insufficient resources as a critical influential factor towards teachers' perception of inclusive education. It was also noted that sufficient resources are available i.e. assistive technology this would aid regarding those teachers who may have a negative perception towards inclusive education. One participant stated, *lack of resources...teaching [the] regular student is a challenge because the school lacks sufficient supplies. Could you imagine lacking the resources to teach students with special needs that require more resources? It would be very strenuous.* Many participants emphasized the importance of resources for both teachers and students for the effective implementation of inclusive education. However, many concerns were also noted regarding proper facilities. One participant expressed that *If inclusive education is implemented there should be facilities to accommodate the students that may have physical or mental handicaps and resources for the education of those students to be a success.* Another participant concurred with that response and stated that *I am not against inclusive education. However, I feel that the facilities and resources would need to be in place.*

Insufficient funding by the Ministry of Education and/or the private sector was also revealed as a resource lacking. Participants were adamant that to ensure the successful implementation of inclusive education, adequate funding must be evident. One participant stated, *funding by government to support inclusive education is necessary because it serves as the foundation for educational programs to be successful.* Another teacher responded, *finances play an important role as it is the overall capsule for inclusiveness. Without material, assistance, and proper accommodation, we will never be able to properly provide the level of instruction required for inclusion of students within the normal classroom setting.*

#### *Limited Administrative Support*

There was a general consensus that a lack of administrative support regarding inclusive education was a negative influential factor as it relates to inclusive education. Teachers, both primary and secondary, indicated that there was not sufficient support received from inclusive education teachers from administrators not only at the school level but the district level. The teachers also alluded that if support was consistent throughout the public schools system, more teachers would view the practice of inclusive education more positively.

#### *Teachers' Attitudes*

Several participants identified teachers' attitudes (negative) as a challenge in implementing inclusive education in the public schools system. One participant stated *Developing an intrinsic desire within teachers to willingly participate in such programs is a challenge.* Another participant indicated that *their salary is not sufficient to be considered an inclusive education.*

#### *Inadequate/Misconception of Information Regarding Inclusive Education*

It was noted that misconceptions regarding teachers' definition can be an influential factor regarding inclusive education. When questioned regarding the definition of inclusive education, the responses varied and in some instances were extremely vague. A participant blatantly indicated that she did not completely understand the meaning on inclusive education. Another said, *It [the meaning] is not clear; it needs more clarification.* The other teacher reported, *I'm not certain of its meaning.* This signifies, therefore, that these teachers would be responsible for teaching an all inclusive classroom but were not equipped with a proper understanding of inclusive education.

#### *Research Question 3. What are some recommendations for promoting adult education practices for inclusive education teachers at the elementary and secondary school level?*

The results from this revealed unanimously that the government of The Bahamas needs to provide some adult education programs for teachers with responsibility for an all-inclusive classroom. When questioned regarding their recommendations, the participants indicated that the program should be mandatory, free to all teachers, administrators and policy makers (elementary and secondary), conducted at a national and international level, provided in the format of in-service awards which allow teachers to focus solely on the knowledge being learned regarding inclusive education, initiatives (financial and non-financial) should be provided to participants, and should be documented for evaluation purposes.

**Discussion***Implications for Education and Training*

The research is meaningful and contributes to educational practices and theories regarding inclusive education and the development of adult education programs for all teachers in The Bahamas. First, the study revealed that there are misconception regarding the definition of inclusive education which evidently has a rippling impact on teachers' perception of inclusive education and their willingness to accept such initiatives within the educational system. This misconception can be influenced by the fact that in The Bahamas there is no operational definition of inclusive education from the policy level. However, during the 2003 – 2005 National Commission on Special Education's (NCOSE) deliberations throughout the islands, much discussion was held regarding this ideology (Bahamas Government NCOSE Final Report, 2005). However, the Government of The Bahamas to date has not revised The Education Act of The Bahamas and did not articulate policies to support inclusive education practices at any level. NCOSE did however make suggestions for the endorsement of a national definition of Inclusive Education, which may be found in draft procedural documents at the national education agency's headquarters. Since this national initiative, the Government of The Bahamas has made significant progress towards the overall improvement of special education with limited strides towards inclusive education as a national practice.

Second, the research revealed five overarching factors that influence teachers' perception of inclusive education as: (a) lack of training, (b) insufficient resources and (c) administrative support, (d) teachers' attitudes and (e) inadequate /misconception of information regarding inclusive education.

Again lack of training for teachers and administrative support, points directly to critical needs in education and training. Teachers identified the lack of a body of knowledge specific to the nature and needs of students with special needs: categorical identification of students with disabilities; needs assessments for planning; curriculum adaptation and development; intervention strategies; thus the negative attitudes towards the adoption of inclusive education in the Bahamian school system. Furthermore, the perceived lack of support from administrators on the local school and district level also served as a deterrent to attitudinal change and acceptance of differences.

Teachers resoundingly expressed the need to provide in-service adult education and training opportunities, to address issues related to inclusive education. Further suggestions regarding mandatory participation for teachers, administrators and policy makers were also articulated.

To this end, much emphasis is needed regarding the education of all teachers and administrators towards the development and implementation of a unique inclusive education model for The Bahamian education system based upon best practices.

Presently, The Government of The Bahamas is scheduled to enact national disability legislation and to revise its Education Act, which will include a definition of inclusive education. These legislative initiatives will provide the clarity needed by educators to assist them in their efforts to plan for children with special needs in the regular education environment. Subsequently, it would then be imperative to develop adult education and training programs to address inclusive education training for the Bahamian education system at the national level. Such programs should be free and mandatory for all teachers, both pre-service and par educators within the government and private sector. However, to ensure teachers value the program and perform at their utmost best, their performance should be evaluated and factored into their annual performance appraisals as an influential factor for their promotion.

Further, this program should be guided by the principles of andragogy as asserted by Knowles (1990). The major objectives of the educational program should be to emphasize teaching skills that would enhance teacher trainee's capacity to support students with disabilities and those who are gifted and talented, in inclusive classrooms. On this premise, the program should also be reflective of best practices both nationally and internationally regarding curriculum selection and adaptation, instructional techniques, strategies for modification of lesson, classroom management techniques and inclusion of teaching manipulatives for an all-inclusive classroom. The program should further call for inclusive education teachers to be well versed with methods for infusing special education content and curriculum into general education courses.

Lastly, it is recognized that teachers play a fundamental role in shaping the overall attitudes towards all students in the classroom, those with and without special needs. Therefore, this educational program

should also have a component that focuses on redesigning pre-service teacher training programs and modifying paraprofessionals' attitudes and perception with the view of facilitating more positive feelings in the interactions between teachers and students with special needs, and in particular those with disabilities. By addressing these factors in pre-service and par educator teacher training, it is suggested that the classroom practices of present and future teachers would ultimately be modified. Such emphasis would also address any preconceived anxiety regarding teaching in an all-inclusive classroom.

To ensure such adult education programs are successful, it is paramount that all the relevant resources to ensure the program is successful are available. This would include proper training facilities, instructional resources, assistive technology and materials necessary for implementation of an inclusive education classroom. It further calls for proper modifications to be made to schools for students with physical disabilities and special furniture.

Support is also a crucial factor with the implementation of the adult education programs for inclusive education programs. Such support should originate at the school level and extend to the Ministry of Education. As a support mechanism and to ensure quality control both the inclusive environments and the inclusive education programs should be evaluated annually. Further, proper policies and procedures need to be implemented by the Ministry of Education.

In an attempt to ensure there is consistency regarding expectations of the programs, proper communication practices and in an attempt to exhibit administrative support, educational sessions can be presented and supported in seminars, workshops, conferences and official communication from the Ministry of Education. Additionally, educators can participate in short courses, certificate and diploma programs all geared towards competency-based training in partnership with local colleges and other appropriate education agencies for quality assurance and certification purposes. In keeping with Knowles' (1980) adult learning principles that adults are practical, the training should include fieldwork experiences, and engagement in extensive hands-on problem solving activities for real life application (The Clinical Educator's Resource Kit, 2005).

### Conclusion

Educators whether mainstream or inclusive educators are considered to be the foundation of all societies. On this premise, this study was conducted to determine teachers' perceptions of implementing inclusive education. Further, to develop adult inclusive education programs for mainstream/general educators, reflective of best practices. The study revealed there are misconceptions regarding the definition of inclusive education which evidently has a rippling impact on teachers' perception of inclusive education and their willingness to accept such initiatives within the educational system. Secondly, the research revealed five overarching factors that influence teachers' perception of inclusive education as: (a) lack of training, (b) insufficient resources (c) administrative support, (d) teachers' attitudes and (e) inadequate /misconception of information regarding inclusive education. The findings from this study are extremely beneficial and would assist in crafting a national definition of inclusive education for The Bahamas and influencing the curriculum design and program development for mainstream/general education teachers. There is also, much implication for adult inclusive education training for in-service and pre-service teachers. This study also serves as a platform for future research in inclusive education in The Bahamas.

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**BOOK REVIEW****EDMUNDS AND MACMILLAN'S LEADERSHIP FOR INCLUSION: A PRACTICAL GUIDE****Maria Rapti**

The debate about inclusive education is long standing and has attracted interest throughout the world. However, supra-national and governmental bodies establish the idea of inclusion as an imperative and the literature is gradually focusing on the pursuit and formulation of the 'pillars of support for inclusive education' (Loreman, 2007). The book, *Leadership for inclusion: a practical guide*, as the title suggests, explores in depth one of the factors that bear on the development of inclusive schools, namely educational leadership. It amalgamates perspectives from the fields of both educational leadership and inclusion and it brings forward their intersection, adding a thorough investigation of this topic to the very limited number of books that deal with it.

Alan L. Edmunds with a background in special education and inclusion and Robert B. Macmillan with a background in school leadership bring together thirteen chapters, whose various authors seek to present to a greater or lesser extent a particular aspect of leadership for inclusion. Theoretical perspectives are combined with empirical research and successfully underpin the practical implications, which in many chapters are clearly formulated as enumerated recommendations. Overall, the insights of the topics under investigation issue from a North American perspective, which becomes evident by the terminology used and the examples provided. However, both the theory and the practical suggestions with some cautiousness could be applicable, at least to some extent, to similar contexts at an international level.

The first chapter, which is written by the editors, sets the tone of the book. They justify the importance of looking at leadership for inclusion and present a framework for operationalising inclusive leadership, which is in accordance with the ideas presented at the various chapters. The second chapter follows up focusing on the deficit discourses around disability and discusses the school leaders' role in challenging them in order inclusion to be favoured. On the other hand, chapter three looks at a more practical dimension of leadership, suggesting behaviour management techniques particularly for principals and administrators.

Leithwood's chapter shifts the focus to theory with a review of successful leadership practices, as they are suggested in literature. Through comparing and merging different models his chapter culminates in a categorisation of the core practices of successful leadership. The next three chapters discuss also the ways in which administrators could promote inclusion, but the way that each of them approaches the issue varies. Specifically, Young emphasizes the administrator's role in respect with developing inclusive school policies, whereas Specht and Young focus on practices for building inclusive communities. Macmillan then looks at relationships between staff and the importance of nurturing an environment of trust.

Chapter eight centres on students' attitudes towards students with exceptionalities and discusses the administrators' roles in changing them and ensuring that they are positive. On the other hand, chapter nine and ten divert the discussion to issues related to students' assessment. Specifically, Edmunds provides recommendations for principals in order to effectively facilitate the evaluation of the special needs of students with exceptionalities, whereas Renihan and Noonan focus more on the leaders' role to the effective evaluation of students' progress in inclusive schools. In chapter eleven, the discussion centres on professional development for inclusion. Apart from arguing for its merits and significance, it presents alternatives through which it can be achieved and it also analyses the administrators' role in fostering and facilitating both their staff's and their own professional development.

The final two chapters present the findings and implications that derive from two different empirical studies, which both examine the administrators' reflections on the implementation of inclusive practices in their schools. However, while the first one presents schools' staff recommended good practices for fostering inclusion through leadership that emphasizes a whole school approach, the second one focuses

mainly on principals' evaluations of their own practices and reports the challenges they face and the opportunities that arise for them.

All chapters are succinct and readable, and each of them investigates inclusion for leadership from a different perspective and with different foci. The only exception is Leithwood's chapter which discusses successful leadership in general without clearly referring to inclusion. Although the book is well based on research and despite presenting theoretical and critical perspectives, it is also a successful practical guide. Readers can tap a great variety of ideas from the authors' suggestions about ways in which leaders could facilitate inclusion. They are very clearly presented and explained, and although some of them may not be appropriate for all contexts, they indicate the logic behind the suggested practices and trigger creativity.

However, there is no satisfying arc to the book. Although all chapters are well structured and stand well independently, it is hard to understand the links between them and the logic behind their sequence. Moreover, it would be useful for the readers if the terminology used was more clearly defined. Concepts such as inclusive education, exceptionalities and leadership are ambiguous and need to be precisely delineated in order misunderstandings to be avoided (Norwich, 2013). Although the authors of some chapters specify the way they interpret the terms some others omit it and confusion is created given that there is no overarching approach for the whole book. Therefore it is not always straightforward if inclusion refers only to students with Special Needs or to all students in general and similarly it is not easy to understand if leadership refers to the role of 'positional' leaders (e.g. principals, middle managers, etc.) or to the 'functional' leaders' role, which may be exercised by each and every members of a schools' staff according to the distributed theory of leadership (Kugelmass & Ainscow, 2004).

Finally, an index would be valuable, as it could bring together the parts of the book that discuss the same themes across different chapters, considering that there is some overlapping between them in some cases. Nevertheless, this is a recommended reading for educational leaders as well as for their trainers. This collection of writings provides a wealth of information on the topic of leadership for inclusion contributing substantially to the scarce literature in the field and offers ideas and techniques that could make educational practice more inclusive for the benefit of all students.

Reviewed by Maria Rapti, Ph.D. student at the University of Leeds

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**INSTRUCTIONAL VARIABLES OF INCLUSIVE ELEMENTARY CLASSROOMS IN  
TURKEY****Nimet Bulbin Sucuoglu****Selma Akalin***Ankara University***Elif Sazak Pınar***Abant İzzet Baysal University*

*The purpose of this study is twofold: to determine the instructional variables of the inclusive classrooms in Turkey and to investigate to what extent the student behaviors change according to eco-behavioral characteristics of inclusive classrooms. The study group consisted of 44 students between the ages of six and 12 with mild disabilities who were placed in regular classrooms and their teachers. The Turkish version of the Code for Instructional Structure and Student Academic Response-Mainstream Version (MS-CISSAR) was used for data collection which was based on a momentary time-sampling. The results of molar analysis indicated that the student behaviors displayed the most were no academic response, no task management, and no competing response. Attention and academic talk were found to be the teacher behaviors displayed the most during instruction. In addition, some student behaviors such as no academic response, no task management, writing, and self-stimulation were not affected by instructional grouping while the attention behaviors of the students were found to be affected by no instruction, no task, no activity, and paper-pen activity conditions. On the other hand, the writing behaviors of the students increased in math and decreased in the discussion condition. All the findings were discussed based on the Turkish mainstreaming system along with the difficulties of the mainstreaming implementation.*

In 1983, mainstreaming was accepted as an educational service model for students with disabilities in Turkey. Since then, a large number of children with disabilities have been placed in regular classrooms, and, in accordance with the statistics given by the Ministry of Education, approximately 70,000 students with various disabilities have been educated in the general education system (MEB, 2010). The implementation of mainstreaming has been examined by researchers in terms of the characteristics of the children who were placed into elementary schools (Çolak, 2007; Vuran, 2005; Deretarla, 2000) and the attitudes of the teachers (Atay, 1995; Uysal, 1995; Kayaoğlu, 1999; Diken, 1998), parents (Özbaba, 2000; Öncül & Batu, 2004; Temir, 2002), students without disabilities towards mainstreaming, and children with special needs (Aral & Dikici, 1998; Turhan, 2007). Several researchers have investigated the effectiveness of mainstreaming, and found that mainstreaming had a positive effect on reading comprehension (Güldenoğlu, 2008), social skills, social status (Çolak, 2007), computational skills (Can-Çalık, 2008), and peer relationships (Batu & Uysal, 2006) of the students with disabilities in elementary classrooms.

The results of all these studies provided valuable information regarding the mainstreaming system in Turkey and also revealed problems and difficulties with the educational system in terms of implementation. Turkish teachers have limited knowledge and experience in teaching students with disabilities, and they do not know how to deal with the problem behavior displayed by the students of different ability levels during instruction. Unfortunately, the support system for teachers and students with disabilities has not yet been well established; therefore, teachers struggle when they teach students with disabilities in general education classrooms. Although teachers believed that students with disabilities should be in regular classrooms with their peers without disabilities, they reported that these students cause many problems while teaching, and they disturb the learning environment (Uysal, 1995;



Kargin, Acarlar, & Sucuoğlu; 2005). In addition, the students with disabilities have serious difficulties in accessing the curriculum and cannot learn as much as the parents and teachers expect. On the other hand, despite the fact that the majority of parents believe that being with their peers without disabilities in general classrooms is the best opportunity for their children with disabilities to be successfully involved with the community, they are not sure that the general classrooms can provide sufficient learning opportunities for them because of the difficulties encountered during the school day (Kargin, Acarlar, & Sucuoğlu, 2005).

Considering the studies related to mainstreaming that have been conducted in Turkey, we implicitly know what the people involved with the mainstreaming process think about educating children with disabilities in general classrooms and to what extent the difficulties were experienced by the teachers, parents and students with disabilities during its implementation in Turkey. However, we have very limited information on what is happening in the mainstream classrooms in terms of variables related to student behavior, teacher behavior, and the learning environment. It is believed that despite all the considerable efforts made by the teachers, parents, and even the policy makers to increase the quality of mainstreaming implementation, it might not be realistic to consider creating an effective learning environment in which all students can learn according to their level of development without investigating the classroom environment and the factors affecting the behavior of the students both with disabilities in these inclusive classrooms. In existing literature, data has been collected and highlighted related to classroom characteristics, including the behavior of teachers and the environmental variables which guide professionals and researchers in making necessary changes and modifications in instruction. This is done so that all students can achieve as much as possible in elementary classrooms (Kounin, 1977; Brophy, 1985; Greenwood, Carta, 1987; McDonnell, Thorson, McQuivey, 1998; Pretti-Frontczak, McGough, Vilardo, & Tankersley 2006). In other words, when instructional variables in the inclusive classrooms are examined, the behavior of the teacher and the environmental characteristics of the classrooms that affect the behavior and achievement of the students might be determined. Thus, it would be possible to take preventive measures in order to teach all students effectively in the general education classrooms.

The ecobehavioral assessment (EBA) is a commonly suggested method used to evaluate the instructional characteristics of classrooms at different levels. It is described as being an alternative assessment system designed to define, evaluate, and compare the relationships between the behavior of both students and teachers as well as environmental variables (Greenwood, Carta, Kamps, Terry & Delquardi, 1994; Pretti-Frontczak, McGough, Vilardo, & Tankersley 2006). According to the eco-behavioral approach, teaching is an intersection point for all activities, stimuli, student reactions, class structure, and learning materials (Cooper & Speece, 1990). By using the EBA, it is possible to evaluate environmental and instructional variables which evoke or accelerate student behaviors. With reference to the research, the information about the necessary changes related to the learning environment or the instruction to be done in teaching can be obtained by using the EBA (Greenwood, Carta, Kamps, Terry, & Delquadri, 1994). In addition, the EBA provides valuable information to the teachers for understanding the relationships between student behavior and ecological variables so that they can improve their instruction by changing their teaching methods or learning environment. In several studies, the EBA was used to investigate school effectiveness (Kamps, Leonard, Dugan, Boland & Greenwood, 1991; Logan, Bakeman, & Keefe, 1997; Logan & Keefe, 1997) and student behavior in different instructional settings (Duvall, Delquadri & Ward, 2004; Woolsey, Harrison, & Gardner, 2004). Moreover, the researchers evaluated teacher behavior and performance by the usage of EBA tools (Robenson, Woolesey, Seabrooks & Williams, 2004; Ross, Singer-Dudek, & Greer, 2005). Lastly, the behavior of students with and without disabilities in inclusive classrooms was compared by using the EBA (Brown, Odom, Shouming, & Zercher, 1999; McDonnell, Thorson & McQuivey, 2000; Wallace, Anderson, Bartholomay & Hupp, 2002).

In one of the early studies focusing on the instructional characteristics of inclusive classrooms, researchers (Thurlow, Ysseldyke, Graden & Algozzine, 1984) compared the ecological variables of full-time regular classrooms and full-time special education classrooms. They stated that there were minimal ecological differences at these two service levels. In another study (Ysseldyke, Thurlow, Christenson & Weiss, 1987), the amount of time allocated to instruction in subjects for students with and without disabilities in elementary classrooms was compared, and it was found that there was no difference between the amount of instruction time allocated in special education and regular education classes. In addition, the researchers determined that a greater proportion of time was allocated to academic activities in special education classes than in regular classes

In their study concerning inclusive elementary classrooms, McDonnell and his colleagues (1998) explored all the instructional variables of these classrooms comparing the behavior of students with the behavior of teachers along with ecological variables, such as *grouping structures* and *source of instruction*. Six students with disabilities and their classes were observed individually for a minimum of 20 minutes using the Code for Instructional Structure and Student Academic Response-Mainstream Version (MS-CISSAR: Carta, Greenwood, Schwartz, & Miller, 1990). The findings of their study showed that although support personnel such as special education teachers and paraprofessionals were available in the learning environment, the general classroom teachers were the primary source of instruction for all students in inclusive classrooms. *Whole group instruction* was mostly used during instructional grouping, and all the students with disabilities were provided *one-to-one instruction* according to their academic and behavioral needs. Moreover, general education teachers spent an average of one third of the observation time with academic interaction. When they were the focus of the teaching, students with disabilities were engaged in academic tasks in approximately 30% of the observation intervals. The researchers stated that their findings could guide the teachers to design their instruction so as to increase student/teacher interaction. In addition, they emphasized that the success of inclusive education should be examined to determine the effects of the instruction used in inclusive classes on the behavior and achievement of the students with disabilities.

The instructional context of students in inclusive classrooms has been the focus of several studies in which the authors wanted to determine what level of individual instruction was provided for students with disabilities and whether the instructional contexts changed for students both with and without disabilities in classrooms and resource rooms. EBA was used to evaluate the instructional contexts of the inclusive classrooms, and the results revealed that student behavior, activities, location for instruction, and instructional group arrangement were different in inclusive preschool classes compared with regular kindergarten classes (Carta, Atwater, Schwartz, & Miller, 1990). Also, there were a few differences between these two educational environments in terms of instructional contexts (Greenwood, 1991; Bulgren & Carta, 1993). In one study, the amount of time allocated for instruction in classrooms which had students with severe disabilities was compared with those that didn't. (Hollowood, Salisbury, Rainforth & Palomboro, 1995). It was found that the allocated times for instruction were similar between the two types of classrooms. It was emphasized that the students with severe disabilities did not detract from the allocated time in inclusive classrooms.

Another study which took place in four high school classrooms compared the behavior of students with severe disabilities with the behavior of those without disabilities (Wallace, Anderson, Bartholomy & Hupe, 2002). The researchers found that there were no significant differences in the behaviors displayed between the two groups of students in general education classrooms. In addition, the students with severe disabilities were more often the focus of the teachers' attention, and there were very few instances when the teachers showed approval or disapproval toward the students with severe disabilities during instructional time. The authors suggested that for students with disabilities to be successfully included in high school classrooms, it is important that they be actively engaged, spend little time exhibiting competing responses, and be the focus of attention. Moreover, having support personnel in regular classrooms solves the problems related to meeting the needs of the students with disabilities.

Recently, a group of researchers investigated the variables that predict access to the curriculum in general education classrooms for students with disabilities. They found that the presence of curricular modifications was a strong predictor for determining the academic responses of the students (Lee, Wehmeyer, Soukup, & Palmer, 2010). In addition, the teacher's instructional behaviors, teacher focus, the student academic responses and competing behavior, and the classroom management styles of the teachers significantly predicted the degree of access to the general education curriculum. Moreover, there was a negative correlation between the teacher instructional behavior and the competing behavior of the students (Lee, Soukup, Little, & Wehmeyer, 2009). The researchers strongly emphasized that access to the curriculum for the students with disabilities was affected by instructional decisions and the actions of the teachers who are primarily responsible for academic instruction.

Considering all the information given above, it is clear that the information related to instructional variables in the general classrooms reveals a strong relationship between the behavior of the student and the behavior of the teacher along with the environmental variables. This kind of information may lead the teachers, researchers, and even the policy makers to be aware of these relationships which could lead to necessary changes in instructional methods and teacher behavior as well as classroom settings so as to implement successful mainstreaming. The current study attempts to determine the instructional variables

of general classrooms in which students with disabilities are placed in Turkey. Therefore, its purpose is twofold: to determine the instructional variables of the inclusive classrooms and to investigate to what extent the students' behaviors change according to the eco-behavioral characteristics of elementary classrooms.

## **Method**

### *Participants and Settings*

The data in this study was collected from 44 inclusive classrooms in 23 elementary schools established in a newly developed area in Ankara where mostly low income families live. The students were in classes ranging from grade one to grade five. All of the schools had similar characteristics in terms of resources, number of students, and socioeconomic level of their students due to being located in one of the poor districts in Ankara. According to the regulations of the Ministry of Education, all schools were mandated to accept students with disabilities who were referred by the Guidance and Counseling Centers regardless of the characteristics of the students and the level of readiness of the schools in terms of infrastructural characteristics, including teacher training, materials, physical conditions of the classrooms, etc.

The students who were placed in general classrooms were diagnosed as having mild mental retardation, learning disabilities, and emotional and behavioral disorders. Because of the fact that some of the classrooms had more than one student with disabilities (SWD), only one SWD was randomly chosen as the target child of the study from each classroom. All students with disabilities were full-time students in the general classrooms in which the number of students was between 25 to 45. The age ranges of the SWD were between six and 12, and the majority of the SWD were boys (62.8%). The SWD was placed in the regular classes based on the decision of the Guiding and Counseling Centers of the Ministry of Education. Students with severe disabilities were excluded from the study since most of them have not been accepted into the general education system in Turkey.

In this study, the participating teachers in the elementary classrooms had different educational backgrounds. Approximately half of them (59.1%) graduated from the faculties of Education of various universities, and the remaining teachers graduated from other faculties, such as Science or Economics. However, they had the right to teach in elementary schools because they had received teacher certificates given by the Ministry of Education after the completion of several courses. Most of the teachers (61.4%) had no training related to mainstreaming or students with special needs. However, 22.7% of the teachers had participated in two-week courses provided by the Ministry of Education, or they had one introductory course pertaining to special education during their pre-service training. In Turkey, although general classroom teachers have limited knowledge and experience related to mainstreaming and are not provided with sufficient support so that they can teach students with disabilities, they have been given the responsibility of teaching all the students in their classrooms including those with disabilities.

### *Observational Data System*

The data of this study was gathered by means of the Demographic Information Form and the Code For Instructional Structure And Student Academic Response-Mainstreaming Version (MS-CISSAR). All information related to the characteristics of students and teachers, including the number of students in each classroom, the number of classrooms in which the students with disabilities were placed in each school, the number of students without disabilities in each classroom, and the students' diagnosis as well as the teachers' years of experience, their age, gender, and experiences with the students with special needs, was collected by using the Demographic Information Form.

MS-CISSAR, one of the computerized observation tools included by the Eco-Behavioral Software System which assesses the environment and behavior within the same observational taxonomies, was developed in order to evaluate the instructional characteristics of inclusive classrooms (Carta, Greenwood, Schwartz, & Miller, 1990). The goal of the EBA is to display the interaction between the behavior of students, the behavior of teachers, and ecological factors. The MS-CISSAR is composed of three groups of instructional variables; teacher behaviors, student behaviors, and ecological variables. The 21 student responses included in the student variables were divided into three categories: academic responses, task management responses, and competing responses. The task management responses category contains seven student behaviors that facilitate involvement with academic tasks. In addition, the competing responses category consists of eight inappropriate behaviors which can be displayed during the classroom activities.

Teacher variables included in the MS-CISSAR are used to provide information about the teacher or other

people who are responsible for teaching in regular education classrooms. Five types of information related to teachers (teacher definition, teacher behavior, teacher approval, teacher focus, and teacher position during instruction) can be gathered by using the teacher codes of the instrument. All five categories are scored for the same person who is providing the cues for the target student to respond. The last variable group of the MS-CISSAR is ecological events. Five groups of ecological variables can be assessed by means of this observation tool and researchers collect data related to educational settings, activity, physical arrangement, instructional grouping, and tasks.

**TABLE 1. The Characteristics of the Study Groups**

Variable	N	%
<b>The students with special needs</b>		
<b>Age</b>		
6	1	2.3
7	6	13.6
8	9	20.5
9	10	22.7
10	9	20.5
11	6	13.6
12	3	6.8
<b>Gender</b>		
Girls	14	31.8
Boys	30	68.2
<b>Type of disability</b>		
Speech and language disorders	7	15.9
Mild mental retardation	14	31.8
Learning disability	19	43.2
Emotional and behavioral disorders	1	2.3
Other	3	6.8
<b>General education teachers</b>		
<b>Age</b>		
Less than 25	2	4.4
26-35	10	22.7
36-45	17	38.6
More than 46	15	34.1
<b>Education</b>		
Faculty of Education	26	59.1
Others	18	40.9
<b>Experience with inclusion</b>		
Less than 10 years	22	50
More than 10 years	22	50
<b>Education related special education</b>		
University courses	6	13.7
In-services training	10	22.7
University + in-service training	1	2.3
No information	27	61.4

More than one classroom variable can be observed at the same time by using the MS-CISSAR, and information pertinent to the percentage of the variables can be obtained by recording all teacher, student, and ecological variables. In addition, it can provide information about the relationship between conditional factors and student behaviors to be observed during instruction. All data is gathered by using a 20 second momentary time-sampling recording technique. Four different types of analysis as well as the graphics of the results are provided by the software (Carta, Greenwood, Schwartz, & Miller, 1990). By using MS-CISSAR, the researchers are able to determine the percentages of all student and teacher behaviors in the subcategories and to compare student and teacher behaviors along with classroom settings on all variables. They can determine the changes in the percentages of each variable over the time or observation occasions (Molar analysis). The ecological analysis, also known as the conditional probability analysis, is used to establish the classroom conditions in which the student behaviors are displayed. Through ecological analysis, it can be determined which ecological variables can cause the changes in student behaviors (Greenwood, Carta, Kamps, Delquadri, 1997). The third analysis is the profile analysis, which gives the information about the differences between the behaviors of two students

in the same observation period, and the involvement analysis, which calculates the percentage of the academic involvement of the target student versus the other students on a minute by minute basis. In this study, only the molar analysis and ecological analysis were carried out so as to determine instructional variables in the Turkish mainstream classrooms.

#### *Procedure*

MS-CISSAR was ordered from the Juniper Garden Project, University of Kansas, and all the materials including technical and practitioner manuals and tutorial videocassettes as well as the sample classroom videos were studied to understand the ecobehavioral assessment system which was used. After that, all written materials were photocopied, and the tutorial and sample classroom videocassettes (verbal and visual definitions of the instructional variables) were copied onto compact discs. Some of the technical problems were solved through discussion with the developers of the programs and the computer technicians of the Faculty of Education.

To collect data, the elementary classrooms in which the students with disabilities were placed were determined by communicating with the school districts. Then, 51 classrooms were determined from one school district (23 schools) situated in one of the lower socioeconomic areas in the city of Ankara. Having obtained permission from the Ministry of Education, the researchers visited the elementary schools, explained the purpose of the study to the principals, and made appointments with the teachers who would have the SWD in their classrooms so that a video recording could be made during one of the content-area classes. Because MS-CISSAR software would be used to collect observational data it was suggested that data should be gathered without video recording in order to be more accurate. However, in this study, instruction sessions were videotaped by two undergraduate students due to several characteristics of the classrooms, including the number of the students and physical arrangements.

Before video recording, all the teachers were asked to teach the subject of the day as they usually do. Because the purpose of the study was to assess the behavior of the students, the behavior of the teachers, and the ecological variables during the instruction period, all recordings were carried out in one of the content-area classes such as Turkish, math, life science, or social science in each general education classroom. Although it was recommended that the observation periods should be long enough to observe all the variables (Dawson, 2007), in this study, because the principals would not let the observers in the classrooms for more than one teaching session and because some of the teachers did not want to be observed and recorded during instruction, the classroom observations were carried out for only 40 minutes in each classroom. The physical arrangements of the classrooms were not suitable for video recording by only one camera, so two cameras were used with one focusing on the teacher and one on the target student. This would prove to be ideal since it reduced the limitations of the video evidence (Haefner-Berg & Smith, 1996; Shepherd & Hannafin, 2008). The two undergraduate students had to position themselves in different parts of each classroom, and one student recorded teacher behavior while the other recorded the student behavior in a synchronized manner. Then all the videos were transferred to compact discs, and three CD sets which included the 49 classroom videos were arranged for observers as well as for the first researcher.

While the videos were being processed, the researcher and the observers completed calibration studies of the instrument and assessed the sample classroom videos based on the standards of the MS-CISSAR. Then to collect data related to the three groups of variables, inter-observer reliability studies were done by the observers and the researchers.

The last steps of the research were monitoring all 51 classroom videos and coding all the variables to be observed. The data in the study was collected by using the MS-CISSAR on a laptop computer in three areas based on the momentary time-sampling. All variables were recorded in each 20-second interval, and at the end of each 20 seconds, the observers looked at the variables to be observed and recorded the information while they were watching the classroom videos. All data was investigated individually by the researchers. Although all effort was made to prevent missing data, it was recognized that the video tapes of two classrooms had errors, so the observers were not able to see some of the variables. Therefore, these tapes were excluded from the study which resulted in a study group consisting of 49 students with disabilities and 44 general education teachers.

#### *Reliability Studies*

Validation studies of the MS-CISSAR were conducted by several researchers (Kamps, Leonard & Greenwood, 1991; Rotholz, Kamps & Greenwood, 1989), and it was proved that the instrument was

valid for collecting data related to student behaviors and ecological characteristics of inclusive classrooms. In this study, because the researchers had sufficient English, all the reliability and validity studies were carried out using the English version of the software, and translation into Turkish was performed after completion of the research.

Before the study, the three researchers learned how to use the MS-CISSAR through the verbal (practitioner manual) and visual (video-cassettes) definitions of the instructional variables included with the MS-CISSAR. Each variable of the instrument was studied separately by the researchers, and it was decided that the second and third researcher would be the independent observers in the study. Then the observers reviewed all definitions with the first researcher and discussed the definitions of the variables on which they did not agree. They continued until agreements on all definitions were established. In the next step of the study, the observers responded to the Three Step Test included on the tutorial cassette which assesses teacher behaviors, student behaviors, and ecological variables. They studied examples and events presented by the test until the criteria established by Greenwood and his colleagues (90% accuracy) was met. Then the observers assessed the instructional variables of the sample classroom provided on the tutorial cassettes and they continued to study how to code the instructional variables by using time-sampling until the standards of the software were met.

Having completed the calibration studies, the researchers planned to conduct observations and record the variables of the Turkish elementary classrooms during the teacher instruction period in one academic content-area class so that they could compare the instructional variables of the sample class with the Turkish classrooms. During the observations, the researchers recognized that some of the definitions of the instructional variables differed in Turkish classrooms from the original classroom on the tutorial cassette, and, after having discussions with the developers of the software (personal communication), it was decided that additions be made to some variables. However, none of the names of the variables were changed. For example, if the target student *looks at* and *attends* to the teacher who is verbalizing, this was coded as *listen to the teacher lecture*. In our classrooms, it was frequently observed that the target students looked at and attended to one of the students who was verbalizing (reading aloud or talking about subject). However, there was no behavioral code for this student behavior in the MS-CISSAR. With reference to this, *looks at and attends to the student verbalizing* was added to *listen to the teacher lecture* code. The other changes made in the definitions are shown in Figure 2.

The four Turkish classroom video tapes that were not included in the study group were separately assessed, and data was independently recorded by each observer. Then the observers compared their results with each other and studied the classroom videos until the percentage of agreement for the three groups of variables was more than 85%. This was calculated by taking the number of agreements by interval, dividing it by the number of agreements plus disagreements, and multiplying the result by 100. The reliability of the two observers was found to be in the range of 77%-90% for student behaviors, 75%-100% for teacher behaviors, and 70%-100% for ecological variables. Having completed all calibrations and reliability studies supervised by the first author, the instructional variables of the 44 classrooms were assessed by the two observers using MS-CISSAR software.

## Results

The results of this study were organized into two sections. In the first section, the researchers presented the percentages of the three groups of instructional variables in the inclusive classrooms in detail. In the second section, the results of the ecobehavioral analysis (conditional probability analysis) were presented, and the extent to which the behaviors of the students with disabilities changed across conditions which occurred during instruction were explained.

### *The Instructional Variables of the Inclusive Classroom*

The data gathered from 44 elementary classrooms in which the SWD was placed was analyzed by using the molar analysis provided by the MS-CISSAR. Accordingly, the behaviors of the students, the behaviors of the teachers, and the ecological variables of the classrooms were determined.

The molar analysis provided the percentages of the three groups of variables in all intervals of the observation period. It allowed the researcher to assess the instructional characteristics of one classroom and also calculate the mean percentage of the variables for a group of classrooms. The instructional characteristics of the 44 classrooms were assessed by using the molar analysis and the mean percentages of each instructional variable for the study group provided by the MS-CISSAR software are presented in table 3.

Changed variables		Original EBASS items	Turkish Form
<b>Student Category</b>	<b>Task participation</b>	Task participation is recorded when the student manipulates elements of an academic task individually or shared with peers.	Task participation is recorded when the student manipulates elements of an academic task individually or shared with peers. <i>Using dictionary and any kind of material according to teachers' directions is also recorded.</i>
	<b>Read silent</b>	Read silent is recorded when the students is observed looking at reading materials including books, workbooks, worksheet, computers or blackboard at 2 seconds and has eye movement indicating scanning words numbers and letters.	Read silent is recorded when the students is observed looking at reading materials including books, workbooks, worksheet, computers or blackboard at 2 seconds and has eye movement indicating scanning words numbers and letters. <i>Reading the words found from the dictionary is also recorded.</i>
	<b>Moves</b>	Move is recorded when the student is observed walking or running to a new area in the classroom. It mostly occurs during activity transition, seeking help or seeking material.	Move is recorded when the student is observed walking or running to a new area in the classroom. It mostly occurs during activity transition, seeking help or seeking material. <i>Moving to the trash basket for sharpening the pencil is also recorded.</i>
	<b>Self stimulation</b>	When the target student produces active and repetitive sensory-motor behaviors, self stimulation is recorded.	When the target student produces active and repetitive sensory-motor behaviors, self stimulation is recorded. <i>When the student both looks around and stimulates himself/herself at the same time, it is recorded as self stimulation.</i>
<b>Teacher Category</b>	<b>Related services</b>	The person who provides support services to the classroom such as a speech therapist, P:E. therapist, and the other related personnel	The person who provides support services to the classroom such as a speech therapist, P:E. therapist, and the other related personnel. <i>When the principal enters to classroom and gives support to the teacher, this is also recorded.</i>
	<b>Read aloud</b>	The instances where the teacher is reading aloud to or in concert with one or more students.	The instances where the teacher is reading aloud to or in concert with one or more students. <i>The instances where the teacher reads aloud the words / sentences while writing on the blackboard is also recorded.</i>
<b>Ecological Category</b>	<b>Listen to teacher lecture</b>	This variable is coded when the target student looks at and attends to the teacher who is verbalizing.	This variable is coded when the target student looks at and attends to the teacher who is verbalizing. <i>When the target student looks at and attends to the one of the students who is verbalizing related to the subject is also recorded.</i>

**Figure 1. The Variables Changes of the Turkish Form of the MS-CISSAR**  
*The sentences written in italics were added to the original definitions of the variables*

As seen in table 2, with respect to the behaviors of the SWD, it was found that the behaviors displayed the most in inclusive classrooms were *no academic response* (70.1%), *no task behaviors* (50.88%), and *no competing behaviors* (62.45%). *Writing*, one of the academic behaviors, was observed in 11.18% of the observation intervals while *using material* and *attention* behaviors were observed in 10.49% and 30.29% of the intervals, respectively. The most frequently displayed competing behavior of the SWD

was *no competing behaviors*, and it was observed in 62.45% of the intervals of the observation time. In addition, the two competing behaviors exhibited the most according to the results of the molar analysis were *looking around* which was coded in 20.10% of the intervals and *self stimulation* which was observed in 10.49 % of the observation time.

**TABLE 2. The Result of the Molar Analysis Provided by MS-CISSAR of the 44 Mainstreamed Classrooms**

Variable	%	Variable	%	Variable	%
<b>Ecologic variables</b>					
<b>Setting</b>		<b>Activity</b>		<b>Task</b>	
Regular classroom	<b>99.41</b>	Reading	<b>53.43</b>	Readers	7.35
Special ed.		Math	20.98	Workbooks	6.08
Resource room		Spelling	0.10	Worksheet	1.27
Chapt 1 lab		Handwriting		Paper&pen	<b>13.24</b>
Library		Language		Listen lecture	8.53
Music room		Science		Other media	6.96
Art room		Social studies		Discussion	<b>27.35</b>
Therapy room		Prevocational		Fetch-put	2.16
Hall		Gross motor		No task	<b>26.08</b>
Auditorium		Daily living			
Other		Self care			
		Arts-crafts			
<b>Physical arrangement</b>		Free time			
Entire group	<b>99.02</b>	Bus management			
Divide group		Transitions	1.96		
Individual		Music			
		Time out			
<b>Instructional grouping</b>		No activity	<b>18.33</b>		
Whole class	<b>71.08</b>	Can't tell	0.49		
Small group	0.10	Other	0.39		
One on one	0.39				
Independent	1.57				
No instruction	25.78				
<b>Teachers' variables</b>					
<b>Teacher definition</b>		<b>Teacher behavior</b>		<b>Teacher position</b>	
Regular	<b>99.71</b>	Question academic	8.82	In front	<b>33.04</b>
Special education		Question management	0.39	At desk	18.33
Aide/paraprofessionals		Question discipline	0.20	Out of room	
Student teacher		Command academic	5.29	Side	<b>33.14</b>
Volunteer		Command management	1.08	Back	15.29
Related services		Command discipline	1.08	Teacher approval	%
Substitute teacher		Talk academic	<b>25.59</b>	Approval	3.92
Peer tutor		Talk management	0.88	Disapproval	3.82
No staff		Talk discipline	0.69	Neither	<b>92.16</b>
<b>Teacher focus</b>		Nonverbal prompt			
Target	5.49	Attention	<b>39.71</b>		
Target+others	26.47	Read aloud	1.67		
Other	<b>60.59</b>	Sing			
No one	7.35	No response	6.67		
<b>Students' variables</b>					
<b>Academic responding</b>		<b>Task management</b>		<b>Competing response</b>	
Writing	<b>11.18</b>	Raise hand	2.16	Aggression	
Task participation	1.18	Play appropriately		Disruption	0.10
Read aloud	1.86	Manipulating materials	<b>10.49</b>	Talk inappropriately	0.78
Read silent	8.82	Move	0.49	Look around	<b>20.10</b>
Talk academic	1.67	Task management	0.20	Non compliance	0.39
No academic response	<b>70.10</b>	Attention	<b>30.29</b>	Self-stimulation	<b>10.49</b>
		No management	<b>50.88</b>	Self abuse	
				No inappropriate behavior	<b>62.45</b>

Note. The variables observed in more than 10% of the observation intervals are written bold.

With respect to teacher behaviors, *attention* and *academic talk* were found to be the most frequently exhibited. *Attention* was determined to be displayed an average of 39.71 % of the time while *academic talk* was observed in an average of 25.59% of the observation intervals. *Attention* was coded when the teachers looked at the SWD or displayed any behaviors indicating that he/she paid attention to the student. *Academic talk* was coded when the teacher talked or discussed the subject or materials to be used during instruction.



In the MS-CISSAR, teacher focus is one of the teacher variables, and it indicates which student receives the teacher's focus during instruction. The four characteristics for this variable are target student, other students, target and the other students, and nobody. In this study, teachers were observed to be focused predominantly on *other students* in an average of 60.59% of the observation intervals, and *target children and others* were the focus in an average of 26.47% of the intervals during instruction. The mean percentage of the time teachers focused on *target student* (the SWD) was only an average of 5% of all intervals while the teachers were instructing.

An important variable related to the teachers assessed by the MS-CISSAR indicates whether the teachers *approve* the appropriate behaviors or *disapprove* the competing behaviors during instruction. According to the software manual, the teacher behaviors can be coded as *approval*, *disapproval*, or *neither*. The results revealed that the mean of the percentage of the *approval behaviors* and *disapproval behaviors* were 3.9% and 3.8%, respectively, and in 92.19% of the observation intervals, no approval or disapproval behaviors were coded.

The five groups of the ecological variables in the MS-CISSAR are settings, instructional grouping, physical arrangement, task, and activities. As can be seen in figure 3, *regular classroom* was coded an average of 99.41% of the intervals. This finding showed that all instruction was carried out in general education classrooms. In addition, *whole group instruction* was carried out an average of 99.2% of the instruction time, and the observers coded *no instruction* for approximately one fourth (25.78%) of the allocated time for teaching. As for the activities variable, the most frequently carried out activities were determined to be *reading* (53.43%), *math* (20.98%), and *no activities* (18.33%). Figure 3 illustrates the ecological variables observed in more than 10% of observation time. According to this finding, in regular classrooms, individual and small group arrangements were not preferred by the teachers who have the SWD in their classrooms.

#### *Student Behaviors Related to Ecological Variables and Teacher Behaviors*

To reach the second goal of the research, an eco-behavioral analysis was carried out for the variables observed in more than 10% of intervals by the observers. In the Ecobehavioral Assessment Software Systems (EBASS) manual, Greenwood and his colleagues explained that EBASS provides two types of information for the researchers: the unconditional probability of student behaviors shows the probability of responses as a percentage of the overall behaviors and the conditional probability of student behaviors which shows the probability of response given some ecological conditions (Greenwood, Carta, Kamps & Delquadri, 1997). The eco-behavioral analysis provides information regarding the environmental explanation of the student behaviors, and it helps to determine the ecological and teacher variables that might affect the student behaviors. It also provides a statistical evaluation of the conditional probability in terms of z score and its significance. The statistical significance indicates the magnitude of the difference between the conditional probability of a tested behavior in given conditions. Thus, a researcher obtains valuable information which provides the probability of the occurrence of each behavior given specific concurrent ecological events about each student behavior. In table 3, the student behaviors and ecological factors included in the conditional probability analysis are presented. Moreover, z values for unconditional and conditional probabilities for all ecological variables are shown in the same table.

In the current study, because only *instructional grouping*, *task*, *activities*, *teacher behaviors* and *teacher focus* were observed in more than 10% of observation intervals, they were selected as ecological variables that might evoke or accelerate the student behaviors for the conditional probability analysis. The results of the analysis revealed that the conditional probabilities of the four student behaviors (*no academic response*, *no management*, *writing* and *self-stimulation*) were not affected by *instructional grouping*. That is, unconditional (percentage of the behaviors regardless of ecological variables) and conditional (percentage of the behaviors in given conditions) probability values of these behaviors were not significant in given conditions. As for the *teacher behaviors* and *teacher focus*, similar findings can be seen in table 4. Accordingly, the percentages of eight of the student behaviors included in the conditional probability analysis did not change while *teacher behaviors* and *teacher focus* changed during instruction. For example, the probability of the occurrence of *attention* behavior in the students was observed in 30% of the intervals regardless of the ecological variables (unconditional probability), and it was observed in 34% of the *academic talk* of the teacher and 27% of the teacher *attention* condition (conditional probability). Similarly, *manipulating materials* was observed in 10.49% of the observational intervals and was not affected by any of the ecological conditions included in the eco-behavioral analysis.

**Table 3. The Results of the Conditional Probability Analysis**

Student behaviors		Teacher Behavior Conditional probabilities						
		TalkAca.	Z score	Attention	Z score	P		
Academic responding Task management	No ac. Res	0.73	0.801	0.65	-0.622			
	Writing	0.13	0.708	0.10	-0.550			
	Attention	0.34	1.049	0.27	-0.814			
	Manipulation materials	0.09	-0.530	0.11	0.411			
Competing behaviors	No management	0.50	-0.180	0.52	0.140			
	Look around	0.19	0.499	0.17	-0.387			
	Self stimulation	0.11	0.479	0.09	-0.371			
	No inappropriate behaviors	0.65	-0.101	0.66	0.079			
Student behaviors		Teacher Focus Conditional probabilities						
		Target+Oth	Z score	Other	Z score	P		
Academic responding Task management	No ac. Res	0.68	-0.344	0.71	0.202			
	Writing	0.11	-0.005	0.11	0.003			
	Attention	0.35	1.027	0.30	-0.605			
	Manipulation materials	0.09	-0.565	0.10	0.333			
Competing behaviors	No management	0.48	-0.463	0.51	0.273			
	Look around	0.17	-0.866	0.20	0.510			
	Self stimulation	0.14	1.007	0.10	-0.593			
	No inappropriate behaviors	0.63	0.140	0.62	-0.083			
Student behaviors		Instructional Grouping Conditional probabilities						
		Whole class	Z score	No inst.	Z score	P		
Academic responses Task management	No ac. Res	0.68	-0.432	0.75	0.862			
	Writing	0.12	0.036	0.11	-0.072			
	Attention	0.34	1.271	<b>0.21</b>	<b>-2.53</b>	.05		
	Manipulation materials	0.10	-0.238	0.11	0.473			
Competing behaviors	No management	0.48	-0.882	0.60	1.757			
	Look around	0.16	-1.694	<b>0.30</b>	<b>3.375</b>	.001		
	Self stimulation	0.10	-0.254	0.12	0.506			
	No inappropriate behaviors	0.69	1.336	<b>0.49</b>	<b>-2.663</b>	.01		
Student behaviors		Activity Conditional probabilities						
		Math	Z score	Reading	Z score	No activity	Z Score	P
Academic responses Task management	No ac. Res	0.58	-1.896	.73	0.621	0.76	0.868	
	Writing	<b>0.17</b>	<b>2.37</b>	0.09	-1.354	0.11	0.017	.05
	Attention	0.28	-0.804	0.37	1.854	<b>0.19</b>	<b>-2.686</b>	.01
	Manipulation materials	0.10	-0.010	0.10	-0.183	0.11	0.363	
Competing behaviors	No management	0.50	0.017	0.46	-1.104	<b>0.62</b>	<b>2.102</b>	.05
	Look around	0.15	-1.207	0.17	-1.119	<b>0.32</b>	<b>3.459</b>	.001
	Self stimulation	<b>0.05</b>	<b>-2.176</b>	0.13	1.173	0.11	0.102	.05
	No inappropriate behaviors	0.68	0.789	0.67	0.868	<b>0.47</b>	<b>-2.522</b>	.05
Student behaviors		Task Conditional probabilities						
		Discn	Z score	Paper-pen	Z score	No Task	Z score	P
Academic responding Task management	No ac. Res	0.81	1.361	<b>0.49</b>	-	0.76	0.584	.01
	Writing	<b>0.04</b>	<b>-3.258</b>	<b>0.33</b>	<b>6.081</b>	0.11	-0.730	.001 / .001
	Attention	<b>0.49</b>	<b>4.206</b>	<b>0.18</b>	<b>-2.655</b>	<b>0.21</b>	<b>-2.633</b>	.001/ .01/ .01
	Manipulation materials	0.07	-1.015	0.11	0.520	0.11	0.719	
Competing behaviors	No management	<b>0.33</b>	<b>-3.283</b>	<b>0.64</b>	<b>2.227</b>	0.60	1.950	.001/ .05
	Look around	<b>0.14</b>	<b>-2.031</b>	0.16	-1.165	<b>0.31</b>	<b>2.957</b>	.05/ .01
	Self stimulation	0.13	0.796	0.07	-1.449	0.12	0.153	
	No inappropriate behaviors	0.67	1.058	0.72	1.510	<b>0.48</b>	<b>-2.162</b>	.05

*Attention*, one of the important student behaviors included in task management, was found to be affected by the ecological variables, and it increased during the math condition. However, *attention* decreased in conditions such as *no instruction*, *no task*, *no activity*, and *paper-pen activities*. As might be predicted, the students displayed less *attention* during these conditions whereas more *attention* occurred while *discussion* was being held. In addition, the percentages of the *writing* behaviors of the students were

changed according to the ecological variables. It was observed in 11.18% of the observational intervals regardless of ecological conditions (unconditional probability) while it was determined to have increased in math (17% of intervals) and in paper-pen (33% of intervals). However, it significantly decreased in the *discussion* condition (0.4% of intervals).

The eco-behavioral analysis was performed for the three competing behaviors of the students: *no competing behavior*, *looking around* and *self-stimulation*. The results indicated that *no inappropriate behavior* decreased in *no instruction*, *no activity*, and *no task management*. In addition, *looking around* was found to be affected by the conditional events, and it increased in *no instruction* (30% of intervals), *no activity* (32% of intervals) and *no task* conditions (31% of intervals) while it decreased in *discussion* (14% of intervals). Finally, the probability of *self-stimulation*, the other competing behavior which occurred during instruction, was determined not to be affected by the *instructional group* and *task management*; however, it decreased during *math*.

### Discussion

In this study, the Turkish version of the MS-CISSAR was introduced as an instrument used for data collection. Next, the instructional variables of the elementary classrooms in which the students with disabilities were placed were investigated. After making minor changes to the definitions of the seven variables and establishing interobserver reliabilities, the software and practitioner's manual were translated into Turkish and copied for the three researchers. Because this software was developed based on the idea that instruction is a confluence of the activity, task, structure, and teacher behaviors, it is used for assessing the instructional variables of the inclusive classrooms and it provides detailed information about student behaviors and teacher behaviors that were displayed during instruction as well as the ecological characteristics of the learning environment. Therefore, we believed that it would be an important tool for the Turkish researchers to use in order to determine the effects of the ecological events and teacher behaviors on student behaviors. In addition, the researchers might develop training programs based on the information gathered by the MS-CISSAR for the pre-service and in-service teachers and make them aware of the relationship between student behaviors and instructional characteristics of the classrooms so that they can make changes in their instruction. Moreover, the data to be collected by the MS-CISSAR can guide the educators so as to establish effective learning settings for students with and without disabilities in general education classrooms.

The main findings of the study are related to the behaviors of the SWD and instructional variables of the mainstream elementary classrooms. The researchers found interesting results regarding the instructional variables of the mainstream classrooms by carrying out the molar analysis provided by the MS-CISSAR software. According to the results, all instruction sessions were held in *regular classrooms* and the *whole class* was the main instructional grouping. *No instruction* was coded by the observers in approximately one fourth of the observation intervals. The teachers preferred mostly *paper-pen* or *discussion* tasks during instruction, and there was *no management* in almost one fourth of the instructional sessions. *Reading* and *math* were the only activities carried out in the classrooms, and almost one fifth of the instructional time passed without *any activities* for the students with disabilities. These findings should be interpreted by taking the difficulties and problems of the mainstreaming system (Kargın, Acarlar, & Sucuoğlu, 2005) in Turkey into account.

It is very well known that some requirements must be fulfilled for the purpose of effective mainstreaming implementation. Having support personnel such as a teacher's assistant or paraprofessional in the classroom, teaching in small groups, and providing individual learning opportunities to all students are very important in order to have them benefit from the mainstreaming (McDonnell, Thorson & McQuivey, 1998; Marzano & Marzano, 2003; Soodak & Mc Charty, 2006). Moreover, whole class arrangement is consistently associated with the lowest level of academic behavior compared to one-to-one and small group instruction (Greenwood, Carta, Kamps & Arreaga-Mayer, 1990; Kamps, Leonard, Dugan, Boland, & Greenwood, 1991). However, in Turkey, the teachers mainly prefer *whole group* instruction regardless of the ability levels of the students due to the fact that there have been a limited number of support personnel for the teachers and the SWD. In addition, it is believed that because the teachers want to provide a more controlled learning environment for all students, *paper-pen activities* and *discussion* in which the students are supposed to sit in their desks are the activities used most by the teachers.

According to the results of the molar analysis, *reading* was found to be the main activity observed during instruction regardless of the academic-content area. The researchers determined that the teachers used

only *reading* and *math* activities which were observed in 53.43 % and 20.99 % of the observation intervals during instruction, respectively. In addition, it was found that *no activity* was coded in approximately 20% of the observational intervals. Therefore, in almost one fifth of the instructional time, the students were not provided with any instructional activities. In a previous study, it was found that the instructional task observed the most was *listening to the teacher lecture* (23.2% of observations) whereas *discussion and other media* were coded for 19.54% and 17.15% of the observation intervals respectively in inclusive high school classrooms (Wallace, Anderson, Bartholomay & Hupp, 2002). Moreover, Logan and Malone (1998) classified the activities carried out in classrooms as academic, nonacademic, functional skills, and transition. They determined that academic activities (reading, spelling and handwriting) were coded a significantly higher percentage of intervals (64% of observations). Furthermore, the results of a study (Lee et al., 2010) indicated that instructional activities were remarkably different in the classes in which curriculum modifications were provided versus when they were not provided. The findings of these studies reflect that both instructional tasks and instructional activities were more varied compared to the Turkish mainstream classrooms. They indicated that if the curriculum was modified based on the needs of the students, the behaviors of the students with disabilities would change, and the number of the instructional activities and instructional tasks observed in inclusive classrooms would increase. Finally, Gettinger and Kohler (2006) suggested that the quality and type of instructional activities were effective variables when applied to the academic engagement and problem behaviors of the students. Therefore, we thought that these findings should be considered not only regarding the mainstreaming system in Turkey, but also the instruction in general education classrooms.

The current study revealed valuable information in terms of the behavior of elementary classroom teachers. For example, the teachers who were responsible for teaching *focused* specifically on the students with disabilities in only 5% of the observation intervals but they focused on other students, including the SWD, in 26% of the observation intervals. In addition, they focused on *no one* in 60% of the time during instruction. However, in related literature, it has been suggested that focusing on students while teaching is one of the critical variables that might affect both academic engagement and student behavior (Logan, Bakeman & Keefe, 1997; McDonnell, Thorson & McQuivey, 1998; Gettinger & Kohler, 2006) as well as the classroom management of the teachers (Kounin, 1977). The percentage of teacher focus changes according to the source of instruction in inclusive classrooms (McDonnell, 1998; Logan & Malone, 1998), and there is a relationship between the teacher focus and the instructional groupings (Logan, Bakeman & Keefe, 1997; McDonnell, 1998; Logan, Bakeman & Keefe, 1997). For example, when a *general education teacher* was providing the instruction, students with disabilities were the focus of the teacher an average of 29.4% of the time. Conversely, if instruction was provided by special education teachers, they focused on the student with disabilities an average of 49.2 % of all observation intervals (McDonnell, 1998). Considering all these findings related to the effects of the teachers' focus on student behavior, it would seem to be very important to find a way to increase their focus on the target student so that the students might be more engaged in inclusive classrooms.

The molar analysis indicated that a very small number of *approval* and *disapproval* responses were used by the teachers during observations. Both *approval* behaviors, such as *saying good and very good, touching, and smiling at the student*, and *disapproval* behaviors, such as *saying don't or that is not right*, were displayed in only 4% of the observation intervals. This finding seems to be consistent with the other studies in which *approval* and *disapproval* behaviors of the teachers were rarely observed (Wallace, Anderson, Bartholomay & Hupp, 2002; Lee et al., 2010). However, in classroom management literature, it has been frequently highlighted that recognizing and praising appropriate behavior and reacting effectively to competing behavior are effective ways to improve positive behavior and to prevent negative behavior displayed during instruction (Kounin, 1977; Marzano & Marzano, 2003; Simeonsen, Fairbanks, Briesch, Myers & Sugai, 2008; Oliver & Reschly, 2010). Praising students' positive behavior is especially accepted as an important component of preventive classroom management (Murdick & Petch-Hogan, 1996; Marzano & Marzano, 2003; Soodak & McCharty 2006). Therefore, we think that training programs for in-service and pre-service teachers should draw attention to the importance of praising positive behavior and focus on the relationship between teacher praise and the behavior of the student. In this way, proactive discipline might be encouraged instead of reactive disciplinary methods which have generally been accepted by the Turkish teachers in elementary classrooms (Başar, 2001; Yüksel, 2005; Girmen, Anılan, Şentürk & Öztürk, 2006).

Wallace et al. (2002) grouped academic talk, academic comment and academic question variables and named them academic behaviors. They also reported that the teachers displayed academic behaviors in

40% of the observation intervals. In addition, attention was observed in 17% of the instructional time and task management behaviors, defined as prompting students to get materials ready and handing out worksheets, were coded for 20% of the instructional time. Similarly, Lee et al., (2010) had found that *academic talk* was the teacher behavior observed the most followed by attention, academic questioning, and reading aloud. Moreover, they reported that the *task management* variable occurred two times more often in classrooms in which curriculum modifications were not provided than in classrooms in which curriculum modifications had taken place. Conversely, in the current study, *academic talk* and *attention* were the main teacher behaviors which the observers coded the most. It is believed that these findings showed that the teachers in our general classrooms exhibited very few behaviors while they were teaching, and other teacher behaviors, such as *academic questioning* and *disciplinary questioning*, rarely occurred during instruction.

With respect to the behaviors of the SWD, it was observed that *attention and writing* were coded the most by the observers during teacher lecture, and these students spend almost one fourth of the instruction time by *doing nothing*. *No task behaviors* and *no academic behaviors* were the other student behaviors observed the most. It was very interesting that even though no data was collected for the behaviors of the students without disabilities, the researchers recognized that both the SWD and the students without disabilities displayed very few academic behaviors such as *silent reading* and *academic talking* in conjunction with *task management* behaviors, such as *raising their hand* and *task participation*. Interestingly, although the elementary classroom teachers complained mostly about the problem behaviors of the students with disabilities in general education classrooms (Uysal, 1995; Kargin, Acarlar, & Sucuoğlu, 2005), *no competing* behaviors were the most common competing behaviors in our classrooms. In addition, *looking around* (20.10% of observation intervals) and *self-stimulating* (10.49% of observation intervals) were found to be the main competing behaviors by the observers, which is similar to the findings in the study by Wallace et al (2002). In existing literature, it is frequently underscored that general education teachers state that they do not prefer having students with disabilities in their classrooms due to their problem behaviors displayed during instruction, and they do not know effective ways to manage these behaviors (Blanton, Blanton, & Cross, 1993; Hanrahan, Goodman & Rapagna, 1990; Marzano & Marzano, 2003). However, the findings of the current study revealed that the competing behaviors of the study group were not as intensive as the teachers had expected. Moreover, the behaviors about which the teachers complained most, such as disruptive behaviors (Uysal, 1995; Kargin, Acarlar, & Sucuoğlu, 2005) were not observed during the data collection period. On the other hand, if we consider the percentages of the academic and task management behaviors of the SWD, it might be reasonable to think that the occurrence of *looking around* and *self-stimulation* behaviors was unavoidable. The researchers emphasized that behavior problems are related to the quality of instruction (Munk & Repp, 1994) and active engagement toward the instruction might prevent inappropriate behavior in the classroom (Kounin, 1977; Brophy & Good, 1986; Jones & Jones, 2001; Marzano, Gaddy, Foseid, & Marzano, 2005; Simeonsen, Fairbanks, Briesch, Myers & Sugai, 2008). In addition, a strong relationship between academic behaviors, task management behaviors, and competing behaviors of the students has been frequently reported in classroom management literature (Brophy & Good, 1986; Jones & Jones 2001; Kounin, 1977). In reference to these studies, it appears that the SWD might have displayed inappropriate behaviors due to the lack of academic and task behaviors that were observed in a limited amount in this study.

Greenwood and his colleagues underlined that the conditional probability analysis identifies materials or teacher behaviors which promote specific student behaviors during instruction, and it also provides information regarding the types of teacher behaviors that might trigger inappropriate student behaviors (Greenwood, Carta, Kamps, Terry, & Delquadri, 1994). Therefore, we aimed to investigate the conditioned probability of the behaviors of the students with disabilities, and carried out ecobehavioral (conditional probability) analysis for the variables that were observed in more than 10% of the observation intervals. The results of this analysis indicated that some of the student behaviors differed relative to the changes of the instructional variables while some of them were not affected by the ecological variables. For example, *looking around* which was the most observed competing behavior of the students, increased during *no instruction* and *no activity* conditions and decreased in *discussion* condition in which the teacher and students talked about the subject matter. In contrast, *self-stimulation* was observed in 10% of the observational intervals independent from the ecological variables, and the probability of the occurrence of this behavior was found in 11% of the *academic talk* conditions of the teachers. However, it was observed in 11% of the intervals during teacher *attention*. As might be predicted, the students displayed less *attention* under the task management behaviors during the conditions of *no instruction*, *no activity*, *paper-pencil*, and *no task management*. However, more

*attention* occurred while the *discussion* was being held.

These findings indicated that the student behaviors did not change according to teacher variables; in other words, *teacher attention* and *teacher academic talk* were not effective variables on the behaviors of the SWD. On the other hand, *teacher focus* was accepted as one of the important teacher behaviors in improving academic behaviors and the engagement of the students both with and without disabilities (Logan, Bakeman & Keefe, 1997; McDonnell, Thorson & McQuivey, 1998). The current study found that the student behaviors did not change according to *teacher focus*. However, in the literature focusing on proactive classroom management, it was frequently stated that there was a strong relationship between teacher behaviors and student behaviors, and the student behaviors differentiated parallel to the changes of the teacher behaviors (Kounin, 1977; Goldstein, 1995; Marzano, Gaddy, Foseid, & Marzano, 2005).

Two limitations of this study should be taken into account. First, the amount of data collected might be an important factor affecting the results of the conditional probability analysis (Greenwood et al., 1994), it is suggested that researchers should collect data over longer periods and over multiple observations so as to improve the sensitivity and reliability of their findings. However, the data of the current study was gathered in one 40-minute academic class due to the problems with observations during the instruction time in each classroom. This was contrary to other research which included a longer period of observation for each student with disabilities (Carter, Sisco, Brown, Brickham & Al-Khabbaz, 2008; Hollowood, Salisbury, Rainforth, & Palombaro, 1994; McDonnell, Thorson & McQuivey, 1998).

Previous research comparing the behaviors of the student both with and without disabilities revealed similarities and dissimilarities between the behaviors of a student with disability compared to average student behaviors under comparable conditions (Greenwood, Carta, Kamps & Delquadri, 1997). However, in this study, the behaviors of the students with disabilities were not compared with the behaviors of their peers without disabilities. All the data was analyzed based solely on the behaviors of the SWD due to the difficulties of recording the behaviors of the two student groups in a synchronized manner. Therefore, in future research, if the behaviors of the students both with and without disabilities are compared, it should be possible to determine whether the ecological variables for these two groups are similar in general education classrooms.

In Turkey, although there have been many studies investigating the mainstreaming system, this study is the first one to focus on the inside of the classrooms and to explore the instructional characteristics of mainstream classrooms. It aimed to present the current conditions of mainstreaming implementations in elementary classrooms in terms of teacher behaviors and ecological variables. It also aimed to call the attention of educators and policymakers to the fact that we have to focus on the classrooms instead of what teachers, principals, and parents say about the limitations of students with disabilities in general classrooms, if we want to improve mainstreaming in elementary classrooms. In addition, we are certain that focusing on the teacher behaviors and ecological conditions of the classrooms will have positive effects on the academic, task, and competing behaviors of students with disabilities, even though mainstreaming problems are mostly related to the educational system.

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## **PARENTAL INVOLVEMENT IN THE INDIVIDUAL EDUCATIONAL PROGRAM FOR ISRAELI STUDENTS WITH DISABILITIES**

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*The purpose of this qualitative phenomenological study is to achieve an understanding of the perceptions and experiences of Israeli parents of students with severe disabilities about their involvement in the Individual Education Program (IEP) process. Data collection in this study involved interviewing 20 parents whose children study in special education schools in the Tel Aviv area in Israel. Through analysis of parents' responses, two main themes related to the involvement of parents in the IEP process become apparent: A child-centered focus and parents' self-efficacy. Positive parent-teacher collaboration enhanced the sense of parents' efficacy with respect to the IEP process and resulted in plans that were individualized to students' needs. The main conclusion of the research is parental involvement and the collaboration of parents with teachers is a process that teachers and parents must nourish daily. Parental involvement and effective parent-teacher collaboration in the IEPs of students with severe disabilities is founded on relationships of trust and positive communication between families and schools.*

The Individual Educational Program (IEP) is a blueprint for special education and related special education services in both the United States and Israel (Martin et al., 2006; Tal, 2009; Yell, Katsiyannis, Ennis & Losinski, 2013). International research about the education of students with disabilities has emphasized the importance of involving parents in planning and implementing an IEP tailored to students' strengths and needs (Angel, Stoner, & Shelden, 2009; Hobbs & Silla, 2008; Hui-Chen & Mason, 2008). Previous research findings have confirmed that the academic results and the social well-being of students with disabilities improved when parents were involved in the IEP process (Englund, 2009; Thompson, Meadan, Fansler, Alber, & Balogh, 2007; Whitbread, Bruder, Fleming, & Park, 2007).

However, the participation and involvement of parents in the IEP process continues to challenge schools. The problem is that insufficient involvement of parents may result in programs being less responsive to the unique needs of students with disabilities (Feldman, 2009; Kroth & Edge, 2007; Landmark Zhang, & Montoya, 2007; McMillan, 2008; Omoteso, 2010; Ray, Pewitt-Kinder, & George, 2009). The specific problem in Israel is that poor involvement of parents in the IEP process (Dorner's Committee, 2009; Tal, 2007) may inhibit the development of effective IEPs for students with severe disabilities and the inclusion of these students in the community.

The purpose of this qualitative phenomenological study was to achieve an understanding of the perceptions and experiences of Israeli parents of students with severe disabilities about their involvement in IEPs. This study may add to the body of knowledge about parental involvement and parent-teacher collaboration in the IEP process. Additionally, the themes revealed in parents' interviews may suggest recommendations on how to enhance involvement and participation of parents in the IEPs of students with severe disabilities.

### *Background: Demographics and Special Education Policy*

Israel is a small country with an area of 20,770 square kilometers. In 2012 approximately eight million permanent residents lived in Israel; these residents comprised two ethnic groups: Jews (76%) and non-Jews (24%) (Statistical Abstract of Israel, 2012). Although about 1.8 million people are defined as non-Jews, referred to collectively as Arab citizens of Israel, Arab citizens include a number of different, primarily Arabic-speaking groups, each with distinct characteristics. The Israeli formal education system

includes both Hebrew-language and Arabic-language educational institutions. The structure and curricula of Arab-language institutions parallel those of the Hebrew-language sector, with appropriate adjustments to fit the different languages, cultures, and religions. The state education system for the Hebrew-speaking sector consists of two educational streams: State education and state-religious. By law, education is compulsory for all children and youth who reside in Israel, from pre-primary school age until the 10th grade (Israel Ministry of Education, 2013).

The Special Education Law (SEL) in Israel was passed in 1988 and emphasized the state's responsibility for providing special education, free tuition to children with special needs from all groups. According to the Israeli Ministry of Education, the number of students in special education has grown faster than the total number of students. The percentage of students in special education out of the total number of students rose from 2.2% in the 1999/2000 to 3.3% in the 2009/2010 academic year. In 2009, of 60,558 students between the ages of 3 and 21 years with special needs in Israel, 32,407 were diagnosed as students with severe disabilities that seriously restricted more than one functional capacity in daily life (Israeli Special Education Department, 2010, para. 3). The students studied in special classes in regular schools or in special education schools and were eligible for an IEP as part of their placement in a special educational setting.

In 1988, the SEL marked a conceptual and instrumental change in the provision of special education services to children and adolescents with special needs. Consisting of five subsections, namely, Definitions of Terms, Free Special Education, Diagnosis and Placement, Education in a Special Education Institution, and Miscellaneous, the SEL was an attempt to create procedural certainty and codify guidelines for placement. The vagueness of the SEL, however, had not created formal guidelines about how to develop and implement IEPs.

In 1998, the Israeli Special Education Department (ISED) launched formal guidelines for development and implementation of IEPs. These guidelines describe a process in which teachers were encouraged to involve parents and specifically ask for parents' signatures on the IEP form before implementation of the program (ISED, 2007). Although the guidelines of the ISED aim to support parents' participation, the IEP process was not integrated under the SEL (ISED, 1998). Parents' participation in the process cannot be enforced and parents' involvement varies in different school settings (Tal, 2009).

#### *Parental Involvement in the IEP Process*

Parental involvement and the collaboration of parents and teachers in IEPs present barriers to creating a common perspective for a child's educational goals (Kroth & Edge, 2007; Landmark et al., 2007; Rudiger, 2007). Barriers include minimal communication of parents with school staff, insufficient knowledge of parents about special education practices, and passive participation of parents in IEP meetings (Fish, 2008; Gershwin- Meuller et al., 2008; Sanders, 2008; Whitby, Marx, McIntire & Wienke, 2013). The obstacles affect the ability of parents to influence decisions regarding the IEP process and collaborate with staff in implementation of programs in class.

Parental involvement is even more important in the case of students with severe disabilities. The severity of the child's disability may affect the child's capacity to communicate and require parents to become more involved in the educational program of their child (Bachner, Carmel, Lubetzky, Heiman, & Galil, 2006). Because students with severe disabilities often fail to express themselves verbally, it is critical that primary caregivers and teachers keep an open channel of communication to promote students' best interests at home and in school. Involved parents who collaborate with teachers may achieve sound educational programs to support the unique needs of their children (Blackstone, Williams, & Wilkins, 2007). Several factors, such as a family's cultural background, the child's age, the amount of parental knowledge about special education laws and procedures, and the type and level of disability have been shown to affect parents' perceptions (Coots, 2007; Reinschmiedt, Sprong, Dallas, Buono & Upton, 2013; Simon, 2006).

#### *Cultural Background and Parents' Perceptions*

Cultural differences may impose communication barriers and impede the positive involvement of parents collaborating with professionals in IEPs (Barrera & Liu, 2006; Beth, 2008; Matuszny, Banda, & Coleman, 2007). Studies have revealed that parents who are familiar with special education procedures and who understand the formal requirements of parental involvement in IEPs experience less frustration and become more involved in the process (Hobbs & Silla, 2008; Kent, 2013; Lo, 2008; Prezant & Marshak, 2006; Trussell, Hammond, & Inglass, 2008). Smith, Stern, and Shatrova (2008) found Hispanic

parents in the United States did not participate in school activities and did not attend IEP meetings because of their cultural backgrounds and poor English language skills. Landmark et al. (2007) revealed lack of knowledge, unstable employment, and emotional difficulties hindered the ability of parents of students with disabilities from different cultural background to take an active role in the IEP process.

#### *Child's Age and Parents' Perceptions*

Parents of students with disabilities face different challenges through the lifespan of their children, and this may influence participation in schools (McKenna & Millen, 2013). Research revealed that parents of young students were less experienced but showed higher levels of motivation to participate in the educational process (Simon, 2006). Parents of older students who faced different challenges in the transition from the primary to the secondary level and from high school into the community were more critical (Antle, Montgomery & Stapleford, 2009). Sparks (2007) explored the extent to which parents of high school students with disabilities believed IEPs were meeting the needs of their children. Parents who expressed clear dissatisfaction were those who explored alternatives in other schools.

#### *Parents' Knowledge and Perceptions of Special Education*

In several studies, parents shared the relationship between feelings of empowerment and knowledge about procedures and special education practices (Beth, 2008; Ingber & Dromi, 2010; Jivanjee, Kruzich, Friesen, & Robinson, 2007). For example, parents who gave themselves high rates of participation in the IEP process also rated themselves as more empowered in the areas of family, the child services system, and special education laws (Jivanjee et al., 2007). Rouleau (2007) revealed that participating in workshops increased parents' knowledge of their legal rights and knowledge of the six main areas of the Individuals with Disabilities Education Act (IDEA). Rouleau suggested parents of students with disabilities participate in training sessions to increase their understanding and self-confidence about participating in the IEP process.

#### *Type and Level of Child's Disability and Parents' Perceptions*

A child's disability may influence parents' participation in IEPs. Research demonstrated the need for a family centered-approach in setting educational goals for students with severe disabilities. Parents living in Western Canada shared that discussing family values, individual circumstances, and the desire of parents for the child's participation openly with the staff supported an effective goal setting process and their personal involvement in IEPs (Wiat, Ray, Darrah, and Magill-Evans, 2010). Bassin, Schatz, Posey, and Topor (2010) concluded that whereas parents of students with severe disabilities needed extensive support from staff, they might also become resourceful partners. Moreover, Calculator and Black (2010) revealed that parents of students who could not speak or communicate without an Augmentative and Alternative Communication (AAC) system believed it was their role to advocate for AAC practices at school. Parents of students who are mentally challenged or with motor disabilities believed IEPs should also include daily activities and particularly self-care goals. The parents wanted to share valuable information about children's performance at home and help teachers develop self-care goals in the IEP (Chiarello et al., 2010).

The present study is the first one in Israel to explore parental involvement in the IEP process and may be significant to students, parents, and teachers of students with disabilities. First, exploring parental involvement in the IEP process may support educational practices for enhancing the academic and social performance of students with disabilities in schools. Second, discovering the perceptions and beliefs of parents associated with different cultural groups, such as Arabs or Jews and orthodox or secular Jewish parents (Gumpel & Sharoni, 2007), may provide improved practices for students with disabilities in Israeli special education schools. Last, identification of parents' central concerns may assist teachers with implementing educational programs aligned with the goals and cultural background of the family (Santamaria, 2009).

#### **Method**

This article is part of a larger qualitative phenomenological research based on answering three research questions:

- RQ1: What are the factors influencing parents of students with severe disabilities (defined as students with a disability that seriously restricts more than one functional daily life capacity) to become involved in IEPs at special education schools in Israel?
- RQ2: What are the factors affecting parent-teacher collaboration in IEPs?

RQ3: How can the collaboration between parents and teachers improve in the IEP process?

The phenomenological design is the best choice to provide a comprehensive description of phenomena shared by a group (Moustakas, 1994), the phenomenon in this case being parental involvement in the IEP process for Israeli students with disabilities.

#### *Participants*

The sample consisted of 20 parents, 19 mothers and one father, whose children aged 3 to 21 years were diagnosed with severe disabilities and eligible to register for an IEP in the 2010-2011 academic year. Two parents were Arabs, three were orthodox Jews and 15 were secular Jewish parents. The parents were members of three different nonprofit organizations for families of children with severe disabilities in Israel. Representation of diverse perspectives was gained by including parents whose children attended various special education settings. Eight students attended schools for mentally challenged students and received vocational rehabilitation services such as occupational therapy and speech therapy. Twelve students attended special education schools for children with motor disabilities and were eligible for additional services such as physiotherapy, hydrotherapy, and AAC services. Of the 20 parents, six were teachers or professionals who worked with special needs children and their families. Table 1 is a summary of parents and children's characteristics.

**Table1. Summary of Parents and Children's Characteristics**

	Parent	Age of child	Type of child's disability
P1	Mother	10	Severe communication disorders
P2	Mother	14	Rett syndrome
P3	Mother	20	Mental retardation
P4	Mother	6	Severe language and learning disability
P5	Mother	5	Severe developmental disabilities
P6	Mother	6	Language and emotional disorders
P7	Mother	20	Severe language disabilities
P8	Mother	15	Cerebral palsy
P9	Mother	15	Cerebral palsy
P10	Mother	11	Motor disabilities
P11	Mother	12	Motor and cognitive disabilities
P12	Mother	20	Motor disabilities and ADHD
P13	Mother	12	Cerebral palsy, blindness, and deafness
P14	Mother	6	Severe language disabilities
P15	Mother	5(twins)	Cerebral palsy and developmental delay
P16	Mother	4	Cerebral palsy
P17	Mother	12	Motor and communication disabilities
P18	Mother	14	Cognitive and language disorders
P19	Father	15	Cerebral palsy
P20	Mother	10	Cerebral palsy

#### *Instrument and Data Collection*

Personal, in-depth, face-to-face interviews with parents were the primary instrument because interviews *allow us to enter into the other person's perspective* (Patton, 2002, p. 341) and gain explicit and valuable information. An informed consent document guaranteed anonymity and confidentiality (Patton, 2002) and encouraged parents to respond with openness in this study. Interviews took place in parents' homes or a private location chosen by the parent to facilitate the collection of data about practical issues related to parents' participation in the study and to enhance parents' comfort while sharing their personal experiences of involvement in the IEP process. The interview included descriptive questions that explored personal dimensions, incidents, and people related to the experience (Moustakas, 1994; Orr, 2008).

The first interview question aimed at identifying the factors perceived by parents as barriers to their involvement in the IEP, for example, *Describe what parental involvement in the IEP process means to you or describe why you become involved in the IEP process*. The aim of the second question was to identify factors affecting collaboration between parents and teachers in the IEP process, for example, *Describe what parent-teacher collaboration means to you or what supports or inhibits your*

*collaboration with teachers in the IEP process.* The aim of the third question was to understand how to improve parent-teacher collaboration in the IEP process, for example, *What would support or inhibit productive parent-teacher collaboration in IEPs?* or *Please share a personal experience when you tried to improve collaboration with teachers.*

#### *Data Analysis*

Data analysis started with a transcription of each taped interview that was then translated into English. The phenomenological analysis of the interview transcripts followed the Moustakas-modified Van Kaam technique (Moustakas, 1994; Patton, 2002) that in the final stage concludes with *a synthesis of the meanings and essences of the phenomenon or experience* (Moustakas, 1994, p. 181). Analysis of data started with a phenomenological theoretical perspective called *epoch*, which involves re-framing from common understanding, judging, and suspending previous knowing so that the phenomena is revisited with an open mind (Moustakas, 1994; Patton, 2002). In this study, suspension of judgment and subjectivity to construct the *epoch* was gained by engaging in a consecutive reflexive process.

Journal notes included entries of phone conversations when scheduling the interviews and narrative descriptions of personal expectations and beliefs before meeting with each parent. The physical setting, parents' body language, and parents' motivations to expand beyond the interview questions were documented to allow for future reflection. Labeling prejudgments and writing them down helped to develop an *internal readiness to enter freshly, encounter the situation, issue, or person directly, and receive whatever is offered* (Moustakas, 1994, p.89).

The following stage was a phenomenological reduction in which two questions guided the bracketing and elimination of data. First, do the phrases contain a clear understanding of the experience? Second, is it possible to abstract and designate the description (Moustakas, 1994)? Treating the statements equally and grouping the data into meaning units called themes contained the essence of the experience for every participant in the study (Patton, 2002). The next stage was to interpret the data and develop a textual description of the essence of the experience for each parent. The final themes described the essence of the phenomena for parents participating in this study.

#### *Findings*

Analysis of parents' interview data revealed five major themes: child-centered focus, parent self-efficacy, parent-teacher communication, parent-teacher collaboration, and trust. In this article, only the two themes, which relate to parental involvement, namely, child-centered focus and parent self-efficacy, are discussed. The other themes, which relate specifically to parent-teacher communication, collaboration and trust are beyond the scope of this paper and will be presented in a separate article.

#### *Child-Centered Focus*

The concept of a child-centered focus refers to parents' perceptions of what they believe is the best IEP process to meet their children's needs. Of the 20 parents, 19 referred to the IEP as a child-centered focus process. Examination of the child-centered focus theme led to identification of three sub-themes. The sub-themes were parent advocacy, implementing families' perspectives in the IEP process, and understanding the child's abilities.

The 19 parents who spoke of child-centered matters contended parent advocacy influenced the program to be more personalized. Parents' emphasis was on teachers' needs to understand the family's wishes before developing a child-centered program. For example, Participant (P) 13 stated the following:

It is discouraging to come to a meeting and find that the staff concluded what is best for my child without discussing it with us. We received a form that did not represent in any way our desire for implementation of assistive technology. More than half of the parents stated the foundation for a child-centered program is that teachers and parents have a shared understanding of the child abilities. P3 shared the family's involvement in defining the child's activity of how daily living objectives led to better understanding of the child's abilities and helped with designing a program of self-care at home and in school.

Advocacy included parents pleading on behalf of their children for personalized instruction and development of responsive IEPs. The second sub-theme, family perspectives, revealed that parents desired their thoughts and wishes be taken into account while planning and implementing the IEP. The third sub-theme, understanding the child's abilities, revealed that parents wanted to share with teachers the child's abilities at home and learn from teachers about the children's abilities at school.

### *Advocacy*

All the 19 parents believed they were the best advocates to represent their children's interests. Parents were concerned that the children's point of view would not be heard if the parents were not involved in the IEP process. Eighteen parents wanted to advocate a child-centered vision and desired to share information with teachers. Fifteen parents advocated for additional meetings with teachers, and 14 parents wanted the IEP to include age-appropriate instruction. Thirteen parents of students with severe disabilities requested the implementation of accommodations and innovative practices in the IEP. Parents believed, as the primary caregivers, that they were entitled to advocate for their children's needs in school. For example, P12 said that parenting a child with disabilities was a life project and shared the belief that parental involvement gave children a chance to grow and progress.

Parents were engaged emotionally and most of them believed the purpose of parental participation in IEP meetings was to tell their children's stories. P1 shared, *I want teachers to see my child as a whole person and not as the fill-ins on the IEP form* P17 said, *We tell teachers in the IEP meeting everything. We must be there to share the child's dreams. Those dreams won't exist without us saying it out loud.*

Parents believed they were the best representatives of their children during transitions. The majority of parents advocated for additional meetings with teachers and believed discussing students' progress on a regular basis facilitated coordination between school programs and other programs the children attended. Parents emphasized the importance of sharing child-development information and wanted IEPs to include age-appropriate instruction and implementation of specific accommodations

### *Family Perspectives*

Of 19 parents, 14 indicated a need to embrace a family-centered perspective in the IEP. Aligning the IEP to families' beliefs and preferences and to families' wishes for students' autonomy was a major concern of the parents interviewed. P15 had 5 year old twins with severe disabilities who had been placed in a special education preschool program; she expected the IEPs to emphasize the development of free play and wanted teachers to include a goal that addressed the children's play skills. The parent stated that teaching free play strategies was as important as teaching literacy skills. Other parents stated that the priorities of each family for their children's IEPs should be recognized. P12 summarized, *I do not want teachers to patronize and advise me as though they know what is better for us.*

### *Understanding the Child's Abilities*

Understanding the child's abilities refers to parents' belief that teachers and parents should have a shared understanding of the student's strengths and positive attributes. Ten out of 19 parents said that teachers who understood their children's abilities and identify what motivates their children to learn could create a successful child-centered program. P14 elaborated, *Only the continuous discussions about my child's performance helped teachers understand the communicative needs of my child and resulted in an effective language intervention.*

P4 shared that observing the children in various school activities and understanding their language deficiencies helped to reinforce new concepts the children had learned in various home settings. P7 expressed enthusiasm about teachers' guidance on how to teach an adult student to perform appropriate grooming and hygiene at home. The parent explained that observing the interaction of the student with the homeroom teacher in class helped the family to be less protective and do the same at home. Rather than matching students' disabilities to services that already exist, parents wanted services to be developed based on the students' priorities and strengths. P15 stated as follows: Professionals need to focus on the student's agenda and competence. A comprehensive vision about what is best for the child is not what he can or cannot do, but rather identifying the child's strengths. The key for success is acknowledging that the child's development does not have to go by the book.

### *Parent Self-Efficacy*

The concept of parent self-efficacy refers to parents' beliefs about their ability and capacity to influence the IEP process for their child's benefit. Of the 20 parents, 18 discussed their sense of efficacy in the IEP process. Parents' self-efficacy included two specific sub-themes: capacity to influence and involvement. A connection between the sub-themes was evident; most parents who believed they could effectively influence the outcomes of the IEP also reported high levels of involvement.

### *Capacity to Influence*



Parents said teachers' approval in the IEP process augmented the sense of parent self-efficacy and the level of parental participation. P12 reported that she had shared strategies that the family used at home to cope with the maladaptive behaviors of the child with the staff while writing the IEP. The parent believed that when teachers implemented the same strategies in class successfully, it reinforced a strong sense of parental efficacy in the following IEP meetings. P12 said, *I remember the moment I felt that teachers appreciated our effort to help...This was so rewarding! That's the moment I knew that the goals prescribed in the IEP would be implemented in class.*

The ability to decide on their children's best interests increased as parents obtained relevant information. Of the 18 parents, 17 said that parents who had knowledge about other schooling opportunities and interventions had a stronger sense of efficacy in the meetings. P4 shared that knowing about different educational choices the child could attend in the future enabled parents to discuss the advantages and disadvantages of each option. Familiarity with the characteristics of their children's diagnoses helped parents discuss opportunities for better practices in school.

Of the 18 parents, nine reported that the Internet provided information about innovative practices that expanded their knowledge and enabled them to strive for a better IEP. P1 stated that attending a forum of parents whose children used talking computers encouraged the family to aspire to higher communicative goals in the child's IEP. P2 claimed that reading about the IEP in other countries provided useful information about the ability of parents to influence the process.

Of 18 parents, nine disclosed that successful collaboration experiences with teachers in the past influenced their present belief that parents' ideas would be considered in the IEP meetings. P13 shared that in the previous school, the principal referred to parents' suggestions with genuine interest. The parent said, *It [the positive experience] was an empowering moment that filled parents with a strong sense of efficacy. I can still remember those experiences when I get discouraged...I know we can do better.*

In summary, the issues parents discussed as affecting their sense of efficacy positively were receiving approval from teachers, possessing knowledge and relevant information, and having had past positive experiences. Parents reported that a stronger sense of self-efficacy allowed them to contribute effectively to the outcomes of the IEPs. Parents with a weaker sense of self-efficacy admitted they asked few questions in the meetings and did not believe that they could influence the program.

#### *Involvement*

Of the 18 parents, 17 discussed involvement in schools. Proactive parents with a strong sense of efficacy believed their involvement affected the individual educational goals and resources their children received in class. Parents with a weaker sense of efficacy said that they were passive in the IEP meetings and did not believe in parents' ability to create change. P11 shared: Teachers have low aspirations for my child, and the IEP was the same as the program of last year. I just attended the formal meetings. I don't believe that I can affect my child's program at all...I participated in the meeting, but I am not sure it changes anything. Many parents stated they felt they had to be involved to assist in their children's progress. Of the 17 parents, 10 said that they were involved because they believed only parental involvement encouraged teachers to implement accommodations and effective instruction in class. Of the 17 parents, nine said that they were involved because they wanted their children to reach the academic and social standards of their age groups. Students with promising academic abilities inspired parents to become involved and strive for higher academic goals through the IEP. P14 shared, *The child is the apple of my eye* and wanted teachers to aspire to higher standards for the child.

The level of nature of parental involvement differed according to the type of disability and specific needs of children. Parents of students with motor disabilities who required intensive rehabilitation in daily life activities aimed to be involved in every detail of the program. Parents of students who cannot talk were involved because they believed only intensive involvement and collaboration with teachers could guarantee that their children would use a talking computer or an AAC system in class. P1 wanted to meet every month with teachers and therapists and discuss new symbols to implement in the child's talking-computer. In summary, the sub-theme of parental involvement reflected parents' desires for their children to realize their potential in school and for teachers to initiate responsive IEPs in terms of their potential.



### Discussion

The findings of this study reinforce previous research that embracing a family-centered vision in special education programs supports the involvement of parents (Fish, 2008; Ingber & Dromi, 2010). There were not marked differences in the perceptions and beliefs of parents associated with different cultural groups. Exploration of the data revealed that a child-centered focus within the IEP process and strong parental sense of self-efficacy were essential components of parental involvement in the IEP process. Two key motives for parental involvement in IEPs were evident. First, parents wanted children to realize their potentials in school and believed parental involvement in IEPs would help the children's education. Second, parents observed that teachers do not always consider their children's potentials and do not initiate responsive IEPs. The findings of the present study are similar to those of Prezant and Marshak (2006), Rouleau (2007), and Gershwin-Meuller et al. (2008).

The findings also provided support for Rouleau (2007) and Gershwin-Meuller et al.'s (2008) studies that proactive parents with a strong sense of efficacy were familiar with the laws and the services available in special education schools. Knowledgeable parents in this study valued the power of parents' awareness and commonly requested the advice of external specialists or searched for information on the Web. Another issue related to the theme of parents' sense of self-efficacy was the use of the Internet.

### Recommendations

Four recommendations may be made based on the analysis of data. The first recommendation is for the school system to provide families with training programs to improve parents' understanding of special education issues and encourage parental involvement in IEPs. The second recommendation is for the school system to construct a section with information for the families on the school website. A section with credible and valid special education links could give the parents a sense of support from the school and enable them to become knowledgeable participants in the IEP process. The third recommendation is that school leaders develop additional modes of communication to increase the opportunities for parents and teachers to share knowledge about students. Alternative modes might include individual forums, online student records, and monthly records of students' extracurricular activities. The fourth recommendation for special education schools is to adapt teachers' schedules to encourage a family-centered vision within the IEP process. Allowing teachers more time in their weekly schedules to meet with parents and observe students in various contexts might increase the responsiveness of IEPs to students' needs.

The study's limitations are that the sample may not necessarily represent the diverse attributes associated with parental involvement for Israeli students in special education schools. Parents whose children attend special education schools in the central area may not reflect the multitude of cultural and social identity structures of students with severe disabilities in Israel.

### Conclusion

The main conclusion of the research is parental involvement in the IEP and collaboration of parents with teachers is a process that teachers and parents must nourish daily. Relationships of trust and positive communication between families and schools support parental involvement and development of child-centered programs. Teachers need to be aware of family-centered perspectives and have a shared understanding with parents about the student's needs and strengths. Positive parent-teacher collaboration enhances a sense of efficacy among parents with respect to the IEP process and results in a plan that is individualized to student needs. Supporting teachers' abilities to develop responsive programs requires parents to provide relevant information about their children and school leaders to promote more opportunities in teachers' schedules to discuss children's needs with parents.

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**PERCEPTIONS OF DISABILITY AND ACCESS TO INCLUSIVE EDUCATION IN WEST AFRICA: A COMPARATIVE CASE STUDY IN DAKAR, SENEGAL****Elizabeth R. Drame****Kaytie Kamphoff***University of Wisconsin-Milwaukee*

*Educating students with disabilities in an inclusive general education setting has been shown to increase academic achievement, increase peer acceptance, increase self-esteem, create a richer friendship network, and have positive lifetime benefits (higher salaried jobs, independent living). In addition, inclusion can have benefits for students without disabilities. The West African nation of Senegal has pledged to increase inclusive education for students with disabilities by 2015. Issues that affect inclusive education for all in Senegal are access to schooling, community and societal perceptions of individuals with disabilities, poverty, and teacher training and pedagogy. To increase inclusive education for all in Senegal the country must increase access to schooling through physical accessibility and decentralization, create community awareness campaigns that increase knowledge of disabilities, and develop teacher training that fosters a student-centered pedagogy.*

Current data by UNESCO (2000) and ACPF (2011) find that one in every ten children in Africa has some type of disability. Since the early 1990's, there is movement towards educating students with special needs in an inclusive school environment (Ruijs, Van der Veen & Peetsma, 2010). This international push towards meeting the basic learning needs of all people was first declared at the Jomtien Education for All (EFA) Conference in 1990, and reaffirmed at the ten-year follow up in Dakar, Senegal, West Africa at the 2000 World Education Forum. At the Dakar conference, over 164 government agencies pledged to achieve EFA (UNESCO, 2000). The conference targeted different populations of young, under-served learners – girls, people in poverty, ethnic minorities, and students with disabilities – pledging to meet their educational needs by 2015. The participating governments pledged to meet the educational needs of girls, people in poverty, ethnic minorities, and people with disabilities by 2015. In addition, the participating governments resolved to make primary education accessible, free, compulsory and of good quality (UNESCO, 2000). For many children with disabilities, a good quality primary education would be in an inclusive school, learning together with their non-disabled peers. The Dakar World Education Forum emphasized the need for national and funding agency policies to reflect broad EFA goals for all, including those with 'special learning needs'. Inclusive education though should not focus exclusively on improving economic development. Inclusion is a matter of social justice, as all human beings are citizens no matter if they happen to have a disability.

*Education for All*

In April of 2000, the United Nations Educational, Scientific and Cultural Organization (UNESCO) held The World Education Forum in Dakar, Senegal. The goal of this forum was for the international community to adequately meet the educational needs of all children and adults by 2015. The forum reaffirmed the vision of the World Declaration on Education for All. The Dakar Framework was adopted by Senegal in 2000. For the past 13 years, Senegal has been working towards attaining the framework's six main goals related to a) early childhood care and education; b) access to quality, free, compulsory primary education; c) meeting the learning and access needs of youth and adults; d) improved adult literacy and access to continuing education; e) gender equality in access to quality primary and secondary education; and f) improved quality of education resulting in improved measurable outcomes in literacy, numeracy, and life skills (UNESCO, 2000). UNESCO recommended that to achieve these goals countries pledge to create safe, healthy, inclusive and equitably resourced schools, with rigorous learning for all. There has never been a greater urgency for inclusive public education in Africa, and especially

Senegal. On May 26, 2010 Senegalese Parliament (Senate and National Assembly) passed the Law of Social Orientation. This law calls for providing children and youth with disabilities the right to a free education and the right to be educated in mainstream school settings and attend schools located as close as possible to their neighborhoods (ACPF 2011b). The Senegalese government has declared the necessity to include students with disabilities in the mainstream school setting, but Senegal has a very long way to go before educational progress and equality is made for these students. The call for more inclusive educational practices highlights the need to better understand the barriers to inclusion that children with different disabilities (e.g., visual impairments, auditory impairments, cognitive delays, etc.) face in order to successfully implement policy driven by international human rights values.

The purpose of this paper explores the level of inclusiveness in education for children with disabilities in a country in the most vulnerable of regions, Dakar, Senegal. This will be accomplished via two means: a) a comprehensive review of the current literature on inclusive education in Senegal and sub-Saharan West Africa; and b) a qualitative ethnographic case study conducted with children, family members and staff at two specialized centers for children with disabilities in Dakar. Specifically, the paper will examine the following questions in relation to the literature and in relation to the perspectives of people in the field and on the ground living the reality.

1. To what extent do separate educational and therapeutic services delivered in specialized centers in Dakar, Senegal meet the educational and socialization needs of children with disabilities?
2. What structures (e.g., social relational, physical, psychological, cultural, organizational) impede or facilitate inclusive education for children with disabilities in Dakar, Senegal?

The Sub-Saharan Africa region of the world was chosen as the focus for this study is due to the impact of persistent poverty on traditionally marginalized populations, such as children with disabilities. Countries in Sub-Saharan Africa include: Benin, Botswana, Burkina Faso, Cameroon, Chad, Congo (Brazzaville), Congo (DRC-Kinshasa), Ethiopia, Ghana, Ivory Coast, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leon, South Africa, Swaziland, Tanzania, Togo, Uganda, Zambia. Despite steady economic growth in many countries in Sub-Saharan Africa, the existence of high levels of inequality has reduced the positive effect of this growth on poverty reduction (World Bank, 2013). Inequality due to gender differences, ability differences, and social divisions resulting from differences in family wealth all lead to inconsistent access to income and education. According to the Africa Learning Barometer, the level of extreme *education* poverty or having fewer than two years of education, is much higher among the poor (Van Fleet, Watkins, and Greubel, 2012). The primary author conducted the case study in Senegal as a Senior Research Fellow for the Fulbright African Regional Research Program.

The results integrate themes from both the literature review and the case study throughout. Ultimately, the study investigates the current state of Senegal's commitment to educating students with disabilities, advocates for the benefits of inclusive education, and determines how those benefits can realistically be implemented in Senegalese public schools in a culturally sensitive and responsive way, given societal barriers to inclusion. The paper concludes with discussion and reflection on next steps for moving Senegalese public schools towards inclusion of students with disabilities in the general education classroom.

#### *Background on the Educational System in Senegal*

It is important to briefly describe the structure of the educational system in Senegal. Both formal and informal public and - in increasing numbers - private educational systems function in Senegal. Schools delivering formal education in Senegal are organized in four levels: preschool, elementary, secondary school (general academic or technical/vocational), and higher education or l'éducation préscolaire, l'enseignement élémentaire, l'enseignement moyen/secondaire (general or technique/ formation professionnelle) and l'enseignement supérieur (Gueye et al., 2010).

Preschool or préscolaire is divided into three years/levels (petite section, moyenne section, and grande section) from 3 through 5 years. The majority of preschools are located in Dakar, Thiès and Ziguinchor (African Child Policy Forum, 2011b). Elementary schools typically enroll children from 7 to 12 years old. Students complete six levels of elementary education: cours d'initiation (CI), cours préparatoire (CP), cours élémentaire première année (CE1), cours élémentaire deuxième année (CE2), cours moyen première année (CM1), and cours moyen deuxième année (CM2). Students continuing on to secondary

or middle/high school can pursue one of two tracks, an academic track and a technical/vocational track. Middle school has four levels numbered downward from 6<sup>th</sup> year to 3 year (or sixième to troisième) and high school has three levels from 2<sup>nd</sup> year to terminal year (or seconde to terminale). At the end of their terminal year, students typically sit for the baccalaureat exam (DPRE, 2004).

The informal education sector consists of private, non-governmental organizations (NGO) and informal entities, such as street and community schools (le secteur de l'éducation non formelle) focused on basic education related to developing proficiency in reading, writing and math skills in the national language, French. Religious Islamic schools are considered part of this sector, as well as organizations focused on adult literacy training (l'alphabétisation) for illiterate individuals 15 years and older.

Centers targeting children with special needs are increasingly acknowledged as an important and growing part of both the informal and formal public and private educational system (DPRE, 2004). The majority of special or segregated establishments provide elementary education for children across a wide range of ages from 4 through over 30 years old. Results from the literature review and case study include a description of the types of options available.

### **Methods**

This study occurred in two phases. Prior to conducting the case study in 2011-12, the researcher conducted a literature review to determine the current extant research on inclusive education for children with disabilities in Sub-Saharan Africa, Senegal in particular. The literature review was supplemented post-case study to include any recent relevant studies. The following section situates the overall study within sociocultural and emancipatory theoretical perspectives. Then, methods for searching the literature and conducting the case study are described. The study was approved the Institutional Review Board for Human Subjects Protection at the University of Wisconsin-Milwaukee and with the consent of every participant.

#### *Theoretical Perspectives*

The participatory evaluation or needs assessment phase of the study was framed within Vygotsky's sociocultural theory which stresses the mediating influence of social and cultural factors on cognition and learning (Blunden, 1997; Sullivan & Palincsar, 1998). Social interaction mediated by cultural tools, such as language, symbols, and traditions create the conditions needed to encourage the development of cognitive structures and understanding. Depending on the type of learning to be fostered (i.e., new skills vs. application of learned understandings to novel contexts), peer-to-peer or child-to-adult social interactions centered around tasks, problems, and cognitive conflicts facilitated by tools create the conditions for the co-construction of knowledge and the internalization of learning processes that will allow for the independent problem solving.

Research questions were framed from a social justice perspective to surface conditions and represent contexts that serve to marginalize the disability community and individuals with disabilities. The researchers relied heavily on the perspectives of the participants in developing understanding of the complexity of disability identity and perception. This perspective led framing discussions and questioning in as open a manner as possible to resist predisposing a certain response from participants. The primary researcher was also embedded as a member in many of the sociocultural contexts in which the research occurred and was part of co-developing unique understandings of disability and potential in educational settings. So the contributions and interactions were reciprocal as researcher provided a service (training, professional development, intervention sessions etc.), while research participants provided personal perspectives, information, and key data.

Senegalese society is one that highly values family, community, language, and social interaction. This is evident in a variety of ways, superficially including the amount of time spent in greeting others, in socialization around meals and in traditions of extended, highly verbal discussions and debates around a variety of topics at all ages. Divorcing children with disabilities from these social and cultural contexts necessary for learning has a long lasting effect on cognitive development. Exclusion from daily social interaction and dialogue in home settings, as well as separation from typically developing peers in school settings has a cumulative impact on the development of shared understandings and generalization of the use of interactional cognitive structures to support ongoing individual knowledge development and application.

A transformative lens was employed to guide the action phase of the research. As co-creation of understanding of disability occurred, particularly autism, the research moved to using this shared understanding to actively intervene in the social and cognitive condition of these children on an individual level and at an institutional level, to advocate for political pressure to move for implementation of the inclusive education law.

#### *Literature Review Methods*

A search of the following electronic databases was conducted to identify research studies regarding inclusive education for children with disabilities in Sub-Saharan Africa, particularly Senegal: Academic Search Complete (EBSCO), Academic Search Premier, Education Research Complete, ERIC, Social Sciences Full Text, Urban Studies Abstracts, PsycINFO, Humanities International Complete, and Google Scholar. The time frame for articles included in the review was from 1990 to the present. The following terms were used in combination with Sub-Saharan Africa, West Africa, Senegal and disabilities: inclusive education, perceptions, education access, and barriers to education.

In addition to accessing literature from research databases, published reports of select organizations operating in the region were also reviewed. These reports were generated by organizations including, the African Child Policy Forum (ACFP); United Nations Educational, Scientific, and Cultural Organization (UNESCO); the World Health Organization (WHO), and the Africa Governance Monitoring and Advocacy Project (AfriMAP), Open Society Initiative for West Africa's (OSIWA), and the World Bank. These searches yielded empirical studies, news reports, literature reviews, organizational reports from international organizations, book chapters, and policy documents considered appropriate for addressing the research questions posed.

#### *Methods for the Qualitative Comparative Case Study*

A descriptive comparative case study was conducted over an eight month period while the primary researcher was immersed in the broader disability community during the 2011-2012 academic year in Dakar, Senegal. Multiple case study design was selected as the methodological approach (Yin, 2003) because of an interest in exploring the nature of services available to children with disabilities within different contexts to examine intersecting and co-constructed realities in the education of children with disabilities (Baxter & Jack, 2008). This required an immersion into the contexts in which these services were delivered and an exploration of multiple perspectives and information sources to create a multifaceted picture of the nature of educational and therapeutic services provide to children with disabilities in segregated settings. The primary researcher was embedded in two specialized centers for children with disabilities, one public and one private, which constituted the contexts of my two cases. During her at these centers, the researcher conducted a participatory evaluation of the quality and inclusiveness of service delivery based on interviews, observations, and participation in staff meetings. As the status of the primary researcher shifted from outsider observer/evaluator to insider participant observer, the researcher was incorporated into the general operations of each center, tasked with co-planning and co-delivering interventions sessions focused on development of cognitive, communication, and social skills as a form of professional development.

In addition to the cultural immersion in the two centers, the primary researcher developed relationships with disability advocates, such as the director of Special Olympics Senegal and the leader of parent organization focused on families with children born with arthrogryposis. These relationships led to additional collection of qualitative data related to values, beliefs, behavior and language related to individuals with disabilities in Dakar. These understandings were captured through extensive field notes, observations notes, collaborative projects such as co-developed and delivered intervention sessions and grant writing, and document reviews. The results paint a picture, integrated with the literature, of similarities and differences in lived experiences of children and their families with different disabilities, physical and cognitive in particular. This portrait highlights the inherent inequities in quality and access in the system of services available to the disability community and the potential opportunities for increased inclusive education.

#### *Case and Participant Selection*

To address the first research question regarding the impact of separate services on outcomes for students with disabilities in Senegal, a descriptive comparative case study was conducted on two centers. The unit of analysis or case was educational and therapeutic services delivered to children with disabilities in segregated settings in Dakar, Senegal. Between-case comparative analyzes, as well as a within-case analysis were conducted. The selection of the two centers was dictated by several factors, including



geographical location, public vs. private funding support, and type of student served. The centers selected were limited to the capitol city of Dakar. The primary researcher randomly selected one private and one public center to collaborate with and presented the study to the center directors for their approval. The two sites selected initially both agreed to participate in the study. The two selected sites were similar in several areas, but had some key differences centered on a specific independent variable, in this case, public, primarily government-supported vs. private, primarily sponsor/donor-supported and the nature of the study population they served.

*Description of Case #1 Context.* The Public Center (hereafter referred to as PUC) is a public institution established over 30 years ago, designed to address the education and rehabilitation needs of children with physical disabilities. As a public center, PUC is under the jurisdiction of several governmental ministerial offices. The Ministry of Health is responsible for provision and oversight of financial supports and medical, paramedical and social operations. The Ministry of Education provides teaching staff and monitors their evaluation and ongoing professional development. The Ministry of Social Action is responsible for the allocation of social workers and addressing the variety of social problems facing students and their families.

PUC is located in a populous area of Dakar and is run by a Director who is also a psychiatrist. Over 200 students are served annually by seven teachers. Classes are overenrolled and there is a long waitlist of students. Even though PUC is a public center, students are charged an equivalent of \$10/month to defray some operational expenses and student supplies. Many families however, are not able to pay this modest amount and their children are still allowed to enroll. Teaching staff that are assigned to the school do not receive special preparation for working with children with disabilities. They are expected to learn about specific disabilities and interventions, instructional practices on their own, on the job.

PUC is physically structured into three areas, one building which houses the preschool wing and one building which houses administrative offices and classrooms for the elementary school. These two buildings serve a majority of students with physical disabilities and one classroom of children with multiple disabilities (e.g., cognitive etc.). A third building houses classrooms for children with a range of intellectual disabilities of different levels of severity.

The physical structure of PUC needs significant repairs, renovation and maintenance. Damage from floods during the rainy season delayed the start of the 2011-2012 academic year, which typically begins in October. PUC opened in November due to delays in repairs. A quote from a 2011 news article highlights the despair evident in the students who attend the center and those who work there.

...centre est aujourd'hui totalement délaissé. Le décor est triste; le spectacle désolant et pas beau à voir. Le personnel vit dans la misère totale avec des conditions de travail inexplicables. : difficile de décrire. L'affaissement d'un pan de mûr de clôture au centre ... le danger est visible à l'œil. 'Nous se sommes pas soutenus; les conditions de travail sont difficiles' se désole un handicapé...Nous ne bénéficions d'aucun soutien; c'est la négligence totale des autorités. (Bah, 2011)

In English...[the] center is now totally abandoned. The decor is sad; a sad spectacle and not a pretty sight. The staff is in total misery with inexplicable working conditions [that are] difficult to describe. The collapse of a section of wall [around] center [shows] the danger is visible to the eye. *We are not supported, and the working conditions are difficult*, laments a student with a disability... We receive no support; it is the total neglect of the authorities.

*Description of Case #1 and Participants.* The case is focused on the services provided to students with disabilities within segregated specialized centers in Dakar, Senegal. PUC provides educational, rehabilitative and therapeutic services (e.g., physical and occupational therapy, orthotics, prosthetics) to preschool and elementary children aged 6 – 21 years with physical disabilities. The percentage of children enrolled who have other disabilities is rising. Teachers follow a primarily traditional general Senegalese curriculum with very little modification. Upon entry, students are supposed to receive a medical evaluation, the results of which inform the development of a *fiche de traitement* or treatment card. This treatment card summarizes the clinical evaluation results, the focus of rehabilitative physical therapy, and the number of sessions and should be shared with teachers.

A total of 30 individuals participated in interviews/focus groups, professional development sessions, and classroom observations. The group included: five teachers/assistants from the preschool, eight elementary/assistants from the elementary school, four teachers from the building housing students with significant intellectual disabilities, four directors (overall center director and one director per each of the three school buildings), six service providers (doctors, social worker), one parent, one child with autism who participated in intervention sessions, and one occupational therapist intern from Canada. The group included 12 female and 18 male participants.

*Description of Case #2 Context.* The Private Center (PRC) is located in the same vicinity as PUC. The organization which administers PRC was established by parents of children with intellectual disabilities over 14 years ago. PRC itself has been in existence for ten years. Before attending PRC, an evaluation from a psychiatrist is required to determine the specific type of disability of a child. This evaluation in addition to observation data is used by a multidisciplinary team including parents to develop an individualized education plan. The majority of students are charged a tuition equivalent to \$45/month. In addition to charging tuition, PRC organizes fundraising events throughout the year to support the operational costs of the center since they do not receive any financial assistance from the Senegalese government. The center was built with an open concept design where classrooms lead to an open courtyard play area, the central location for daily recess and large gatherings.

*Description of Case #2 and Participants.* Currently, PRC employs ten permanent special education teachers, five general education teachers and several interventionists, including a psychomotor specialist, a speech therapist, a psychiatrist, a social worker and several workshop leaders. The majority of children experience a life skills driven curriculum with a focus on activities, such as ceramics, drumming, baking, crafts, gardening, sports etc. In addition to this core focus, students over 15 years are provided with pre-professional training geared towards job skills development in the areas of sewing, hairdressing, shoemaking, cooking, gardening, pottery and carpentry. A small group of students who function at a higher cognitive level are taught courses in reading, writing, math etc. designed to prepare them for integration into a traditional public school.

A total of 20 individuals participated in focus groups, intervention sessions, professional development sessions, and classroom observations. This group included one director (male), nine teachers (seven females, two males), eight students (three females, five males), and two mothers.

*Other Study Participants.* In addition to gaining perspective on the research questions through being embedded in two specialized centers for children with disabilities, the primary researcher sought input from a broader range of individuals and organizational representatives in the disability advocacy community in Dakar. Using professional connections to schedule interviews with representatives of international educational organizations, parent groups, medical professionals, parents, and disability advocates, the researcher interviewed a total of 21 participants representing 16 organizations. This group included: four representatives (three females, one male) of three local disability organizations, six (female) representatives of five international organizations, four representatives (one female, two males) of three Senegalese schools, and seven parent representatives (six females, one male) of five Senegalese associations/schools.

#### *Data Collection Procedures*

Active data collection occurred in phases from May 2011 through August 2012. The first phase involved the literature review search and analysis which occurred from May through August 2011 and then again from May through Aug 2012. After arriving in Dakar in August 2011, September and October 2011 involved interviews with administrative staff at PRC and PUC, interviews with representatives from local disability advocacy organizations, and interviews with parent organization representatives. In addition, education policy and legal documents related to children with disabilities housed in l'Assemblée Nationale (the National Assembly) were reviewed. Teacher interviews and classroom observations were conducted at PRC and PUC, and parent-school team meetings were observed at PRC in November 2011. Representatives from local public Senegalese schools piloting inclusive education initiatives and Senegalese government officials were interviewed in Dec. 2011. A summary of the results of the center-based initial interviews and observations, as well as recommendations for professional development and service delivery modifications were presented to the administrative teams at PRC and PUC in January 2012. From February 2012 through June 2012, large group professional development sessions for PUC, co-taught intervention sessions with PRC and PUC center staff for nine individual students, and continued interviews with representatives from international organizations were conducted.

The following types of data were collected throughout the active data collection process: extant literature from the literature review including peer-reviewed articles and book chapters, observation notes, field notes, unstructured audio-taped interviews, photos, collection of relevant reports and policy documents, summaries of the results of individual intervention sessions, professional development materials, and participant and personal reflections from professional development sessions.

#### *Data Analysis Procedures*

The researchers employed a deductive and inductive coding process. The deductive process involved the creation of an a priori code book based on the initial review of the literature, but prior to the review and analysis of the qualitative data collected as part of the case study. Reliability for the initial codes was established by testing the code book against additional studies searched for in 2013. The inductive coding of the qualitative data involved an initial review of raw data (e.g., organizational and policy documents, observation notes, intervention summaries, interview transcripts etc.) and a cross-data source initial summary of broad themes, which were then sorted into the code book. Within each broad theme, 2-3 quotes were identified across multiple sources of raw data that best captured the essence of the theme. The inductive coding process was iterative and reflexive (Fereday & Muir-Cochrane, 2006; Srivastava & Hopwood, 2009).

The preliminary codes became 'nodes' when the raw qualitative data was uploaded into NVIVO for analysis. As archival documents, transcripts and other textual data, were reviewed, new data-driven inductive codes for segments of data that either described a new theme or that expanded on a deductive code were included. All qualitative data were transcribed and coded in the primary language of the data (i.e., Wolof, English, or French). Translation occurred during the write up of the findings. The interpretative phase began after the initial coding, where connections were made across themes and sub-themes within case and across case, identifying affirming and conflicting perspectives on the two research questions.

Validity was established through the triangulation of multiple data sources (e.g., people, documents, literature), use of multiple methods for collecting data (e.g., interviews, participant observation, focus groups, document analysis, literature review), and use of researchers embedded in the Senegalese context who reviewed the findings for their veracity as peer reviewers or auditors. Peer researchers were employed as a form of member checking since language (thematic summary in English not in French) and distance (in the US during the analysis and write-up phase of the study) barriers precluded me from having actual participants verify interpretations of the data.

#### **Results**

An analysis integrating findings from the literature review with findings from the comparative case study indicated several broad and complex themes related to access to inclusive education and perceptions of disability in Senegal. The themes fundamentally highlight the concept of access specifically related to access to quality and accurate data, access to quality services and schooling, and access to positive attitudes and perceptions of self and disability.

#### *Data: What We Know and Everything We Don't Know About Disability in Senegal*

Senegal devotes a larger share of its budget to education, 5.6% of GDP 2010 (CIA, 2013). This is larger than most other countries with a similar development level (Gueye et al., 2010). However, as of 2003, only 75.8% of the population was attending school, and gender and regional disparities still exist (Boubacar, 2004). In Senegal, over 60% of the population is under the age of 24, with the median age 18 years. In addition, Senegal is seeing a yearly population growth of 2.532%; 29<sup>th</sup> worldwide (CIA, 2003). The need to educate this increasing population is a priority, especially if Senegal wants to meet the EFA 2015 goals. Successfully achieving EFA goals has the potential to place Senegal as a model for inclusive education in Africa by educating all individuals regardless of disability or educational needs.

The average school life expectancy is eight years total for a male and seven years for females (CIA, 2013). The education system in Senegal is marked by high repeat and dropout rates. Out of 100 children beginning their first year in school, only 48 will complete their final year of elementary school without repeating a grade (Gueye et al., 2010, p. 40). Even higher dropout rates plague students with disabilities and their non-disabled peers. Of the 50% of students with disabilities who have attended school at one point in their lives, 34.2% of that population dropped out of school before they completed their primary

education for various reasons (AFCP, 2011b). Senegal must address this high dropout rate, and take corrective action as addressed in the EFA goals.

A major barrier to developing appropriate supports and service delivery models for children with disabilities in schools in Senegal is the lack of accurate and complete disability prevalence data. While the data is very scarce, the information that is available paints a dire picture. According to the World Health Organization, 1,800,000 individuals of 12 million have a disability in Senegal (COSYDEP, 2011). In addition, 75% of people with disabilities in Senegal are illiterate compared to 60% of the rest of the population and 21% of individuals with disabilities are employed compared to 53% of individuals without a disability (Handicap International, 2010).

La Coalition des Organisations en Synergie Pour la Défense de l'Education Publique or the Coalition of Organizations in Synergy for the Defense of Public Education (COSYDEP) conducted a participatory study to capture data on the number of children, types of disabilities, and level of education in five large towns outside the capital city of Dakar (2011). They employed multiple methods to garner the data, including interviews, home visits, and school visits, using a grassroots approach to garner information about children with disabilities who should be in school but who are often hidden and excluded. The results of COSYDEP's study indicated that of 3,229 students across the five schools, 297 were children with special needs. The majority of these identified children had visual impairment (35%), with the remaining areas of disability including physical disabilities (9.4%), speech and language impairment (7.4%), hearing impairment (5.4%) and cognitive disability (5.4%). A large percentage of these children had health issues, including asthma (30%). COSYDEP conducted a door-to-door campaign to identify the number of children with special needs not enrolled in school. They located 74 of these children. The majority of these children lived in large family households and 67.6% of them had parents who did not know how to read and write themselves. Parents cited a number of reasons for not enrolling their children in school, including but not limited to fear of violence and sexual harassment and the lack of physical accessibility to classrooms and bathrooms.

When examining the characteristics of the children enrolled in the two case study specialty centers, it is clear that students present with a range of difficulties. The PUC center grounds includes a standalone center focused on teaching students with a range of intellectual disabilities including traumatic brain injury, down syndrome, and severe autism. The class size in these two centers ranged from 12 students aged three to five years with physical disabilities and language impairments to 33 students with significant intellectual disabilities, behavioral issues, language impairments and other learning difficulties. The PRC center enrolls approximately 120 children with intellectual disabilities ranging in severity from mild to severe aged 5 to 15 years and a group of children over 15 years. Their class size is more reasonable, ranging from 6 to 15 students per class.

Data gathered via ethnographic means indicated that the children are present in their communities and these data included only those who accessed schooling in the case of the centers or whose families opened their doors to field researchers in the case of the COSYDEP study. These data indicate a real and large population of children with a range of disabilities, particularly intellectual disabilities in or near urban population centers. The data do not address the prevalence of disability in rural areas in Senegal. Accurate and current data regarding the prevalence of disability in the school-age population in Senegal is needed to push for action towards equitable access to education.

#### *Access to Quality Services and Schooling*

The number of schools in Senegal has increased from 4,751 schools in 2000, to 6,460 in 2005, an increase of 36% (Gueye et al., 2010, p. 6). However, only 39% of those schools offer a complete cycle of schooling, and the majority of the schools offering a full cycle of schooling are located in urban areas like Dakar or Thies (Gueye et al., 2010). Pre-schooling for children three to five years old can be found mainly in urban towns, with 72% of establishments located in Dakar, Thies and Ziguinchor (Gueye et al., 2010, p. 30). In 2002, 39.3% of the total population of Senegal could read and write. Out of that 39.3%, over 50% were male, and only 29.2% were females (CIA, 2013). Exclusion from public educational institutions remains a major problem for certain populations of children; such as, children from rural homes, poorer urban households, girls, and students with disabilities (Gueye et al., 2010).

There are specialty schools, including PUC and PRC, which serve all of Senegal. These schools or centers are primarily located in or around Dakar and are not well-positioned for national coverage (Aslett-Rydbjerg, 2003). The specialty schools are primarily segregated by a disability, which does not

take into account students with multiple disabilities, and assumes that an accurate diagnosis has occurred. In addition, these schools, with large wait lists and problems with over-crowding and a lack of resources, are supposed to provide rehabilitative services to students. For example, the mission of the PUC center is to address not only students' educational needs, but also their need for physical rehabilitation in the form of physical and occupational therapy. However, students routinely receive therapeutic sessions two to three times per year rather than on a weekly basis. As a result, students who could be very ambulatory, are instead relegated to wheelchairs or 'marcher à quatre-pattes', walking on all fours. The PRC center's fees pay for some limited access to professionals, such as doctors, dentists, and speech and language pathologists. However, their challenge was the disconnect between the level of need for intense and consistent therapeutic services and the lack of qualified professionals to meet the demand. Both centers attempted to address this demand through international partnerships with training schools who send occupational, physical, and speech therapy interns to the centers for two to four month internships. However, this was only a temporary and unsustainable fix to address the lack of qualified Senegalese specialists in these fields.

In a study done by the African Child Policy Forum (2011b), nearly 50% of children identified with disabilities do not attend school. Of that 50%, 65.8% have never attended public school. Some of the reasons for not attending included, a) schools' refusal to accept children with disabilities (8.5%); b) poor health of child (34%); c) lack of school readiness (6.4%); d) family refusal to enroll their children (8.5%); e) no available neighborhood school (2.1%); and f) teachers' unwillingness to accept children with disabilities in their classrooms (12.8%). One participant in my study who worked for the Ministry of Education highlighted poverty as a key factor impeding families' willingness to enroll their children with disabilities in school because these children were often a source of income for the family (Kumar, 2013). One respondent summarized this situation in the quote below.

La famille l'utilise pour manger. On lui demande d'aller mendier. Si tu prends cet enfant, tu l'emmène à l'école, la famille n'a plus de ressources. Cet enfant, c'est une arme. Il leur permet de survivre. La famille va se dire, attends si je l'envoie à l'école, je ne vais plus manger. Donc si tu convaincs la famille, parfois il attends quelque chose en retour. Il faut comprendre leur situation. Donc ça n'est pas du tout facile. Tu rencontres des situations qu'il te font vraiment parfois même pleurer.

Translated as...

The family uses [the child] to eat. They ask their child to go beg. If you take this child and bring him/her to school, the family does not have any more resources. This child is a weapon [against poverty]. He permits [the family] to survive. The family is going to say, if I send him/her to school, I will no longer eat. So if you convince the family [to enroll their child in school], sometimes they are waiting for something in return. You have to understand their situation. Therefore, it is not at all easy. Sometimes you encounter situations that really sometimes make you cry.

An interview of an inclusion advocate conducted by the primary researcher reinforced the need for all public schools to be inclusive environments (Fortier, 2012). In response to the demand created by the pilot inclusion project instituted in five public schools surrounding Dakar, he indicated that,

Sur les nombre d'enfants qu'on avait identifié, aujourd'hui il y a plus d'enfants qui viennent. C'est vraie que c'est une bonne chose, mais dans la prise en charge aussi, ça pose problème et tu ne peux pas refuser aux enfants l'accès. Tu ne peux pas dire non ne venait pas. Tu sais maintenant la population commence à s'intéresser à cette éducation inclusive donc il y aura une demande mais est-ce que l'école, par exemple, à Pikine, il y a une seule école là-bas. L'école ne pourra pas accueillir tout le monde.

Translated to..

Regarding the number of children [with disabilities] we have identified [that could be enrolled in schools], today, there are more children who are coming. It is true that this is a good thing, but, regarding the support they need, it causes difficulties because you cannot refuse children access [to schools]. You can't say don't come. You know now that the population is becoming interested in

inclusive education so there is a demand, but this school, for example, in Pikine, is the only [inclusive] school there. The school can't accommodate everyone.

Getting to school, particularly when there is a limited number of schooling options available, is a critical barrier. One respondent interviewed for my study indicated *ils ont un probleme de transport parce que meme si ils veulent venir mais il y a des enfants handicapés vivent dans des situations extreme pauvrete ou leur parents n'ont pas les moyens. Donc si tu reussi à convaincre les parents, ils te disent – oui, j'accepte, je va l'emmenner l'enfant – sont problemes est est-qu'il pourra avoir de l'argent pour assurer son transport?* This quote is translated as *They have a problem with transportation because even if they [children] want to come, the children with disabilities live in extreme poverty where their parents do not have the means. Even if you convince parents, they tell you – yes, I agree, I will bring my child [to school] – will they have the money to provide their children transportation?* The answer in the majority of cases is no.

Many children with disabilities lack orthopedic devices (canes, crutches, hearing aids, glasses, etc.) that would make maneuvering around the school building a real barrier for students with disabilities (ACFP 2011b). In rural and urban areas, school facilities are often inaccessible for students with physical impairments. New public buildings and infrastructure are not designed to accommodate the needs of persons with disabilities (ACPF, 2011b). One educator interviewed in the African Child Policy Forum report (2011b) stated *children with physical disabilities are more likely to go to school, but unfortunately the schools are inaccessible. There is sand everywhere and there are stairs at the entrances to the building* (p. 36). One parent of a child with a physical disability interviewed as part of my study, sought grant money to have a ramp installed in a public school in Dakar and to make one toilet accessible to allow her son, who refused to attend a specialty school, the ability to attend the school and physically navigate the environment. It is important to note that this parent worked at the school as a teacher and had the backing of the administrator and educational staff. Despite this parent's success, a family should not be required to secure funds and lead the costly physical retrofitting of an existing school building just so her son and others with physical impairments could attend school. There should be governmental commitment to build structures with diverse users in mind, creating more accessible and accommodating buildings (Hitchcock et al., 2002).

Another issue for students with disabilities when accessing schools is overcrowding. Average class sizes in Senegal are between 50-60 students, in very small, cramped rooms (Aslett-Rydbjerg, 2003). Overcrowded classrooms make the learning environment inaccessible for students with orthopedic needs because they are unable to move around the classroom. In addition, overcrowding is problematic for students with attention, vision or hearing impairments, or behavioral challenges. For instance, an overcrowded classroom could be too noisy for a student with a hearing impairment, making it difficult to hear the teacher. The student with vision impairments may not be able to see the board or read available materials. Students with attention or behavioral difficulties may be over-stimulated. Despite adoption of international conventions supporting Education for All and inclusion promoted by intergovernmental organizations such as UNESCO and the World Bank, access to quality special education services and free and appropriate public education remains in the distant future for countries like Senegal (Anastasiou & Keller, 2011).

#### *Cultural and Societal Perceptions of Disabilities in Senegal*

Negative attitudes towards family members with disabilities contribute to their exclusion from daily life activities (ACPF 2011b & ACPF 2011c). In addition to exclusion, negative attitudes can hinder the development and self-actualization of children with disabilities. A family's and community's negative perceptions towards persons with disabilities in Senegal can lead to their exclusion from education and society. In one study done in Senegal, 32.9% of respondents excluded children with disabilities from family gatherings (ACPF, 2011b). Abandonment of child and mother is often a by-product of these perceptions. During an interview with the African Child Policy Forum (2011b) one mother of a child with a disability stated:

*My husband abandoned me and then divorced me three months after our child was born with an innate disability. He was influenced by his family who told him that I had brought bad luck into his family, that I had changed their lineage and that I was a 'sopiket' –cursed, a carrier of bad luck* (p 32).

This blame and abandonment leaves the mother and child isolated from the community and society (Fontaine, 2010). During an interview conducted by the African Child Policy Forum (2011b) one parent expresses frustration:

*The public (the people on the street) doesn't help facilitate the social integration of people with disabilities. One day I went to the hospital with a child. Another child, looking at her sister said, 'look at that crazy boy. He can't talk.' Her sister replied, 'It is God's will.' In my opinion, it is not that children like this (with disabilities) trigger curiosity. The real problem remains the lack of sensitivity. Children with disabilities are considered crazy people who are unable to contribute anything to society. This perception is not based on fact, because the reality is that there are many people with disabilities today who occupy positions of responsibility in this country and around the world (p 48).*

The stigma that a child with a disability is a burden or a curse is not only perpetuated in the family, but more often by the community. In addition, the community's general perception that a child with a disability cannot contribute to society leads to greater social exclusion, lower self-esteem, and lack of future aspirations. Due to fear of exclusion, community stigmatization, and a very real desire to protect their children, many of these children find themselves confined to their homes, as the administrator of PUC stated. The shift towards inclusion should not only be made in the schools, but also in the communities. This can begin within families of Senegalese children with disabilities by including their children in family activities, education, and community activities. These children need opportunities to come into contact with their non-disabled peers, so there can be a shift in attitudes and perceptions of individuals with disabilities (Porter, 1997).

### **Discussion**

In 2000, Senegal adopted and pledged to meet the Education For All Framework goals by 2015. This means the country pledged to provide access to complete, free and compulsory primary education of good quality for all children, especially children with disabilities (UNESCO 2000). In addition, the Senegalese Parliament (Senate and National Assembly) passed the Law of Social Orientation on May 26, 2010. This law calls for providing children and youth with disabilities the right to a free education and the right to be educated in general school settings and attend schools located as close as possible to their neighborhoods (Republique du Sénégal, 2010). However, there are still major issues preventing children with disabilities in Senegal from attending an inclusive school.

The most pertinent step towards inclusion is to challenge negative attitudes towards individuals with disabilities. This starts with the family unit, and gains momentum in the school, which becomes the community center for awareness. An example of this is awareness campaigns which have shifted traditional attitudes towards epilepsy in developing countries, particularly Senegal, thanks to a global two-phase effort by the World Health Organization, International League Against Epilepsy (ILAE), and the International Bureau for Epilepsy (Reynolds, 2001). This same framework for community activism through international inter-agency support, community dialogue, grassroots efforts, and awareness campaigns, can be utilized with education and inclusion of children and individuals with disabilities. In fact, it would capitalize on awareness-building efforts previously implemented by disability advocacy organizations in Senegal. The success and sustainability of these efforts will rely on coordinated efforts across disability communities (e.g., deaf, physical disabilities, intellectual disabilities etc.).

As previously mentioned, children with disabilities who attend school with their non-disabled peers have higher self-esteem, increased peer acceptance, and academic gains (Salend & Garrick, 1999). However, this cannot be achieved if the school still stigmatizes a child with a disability. The more students with disabilities and non-disabled students come into contact with one another, the more likely they are to see similarities rather than differences (George, 2005). In order for inclusive education to be successfully implemented, effective teacher training, as well as appropriate and adapted instructional materials must be comprehensively addressed in schools. There needs to be a shift from the current teacher-centered pedagogy in Senegal to a pedagogy that is student-centered. Student-centered instruction is more conducive to an inclusive model of education. This approach highlights the child's ability, and helps to drive the development of curriculum and delivery (Aslett-Rydbjerg, 2003). Teachers must be trained to instruct a wide array of learners with different needs and skill sets. Teachers trained in inclusive practices can create a classroom that increases peer acceptance and richer friendships between students with disabilities and their non-disabled peers. Heterogeneous classrooms and differentiated instruction

must form the core of the classroom experience for students in a democracy that works (George, 2005). Increasing the physical accessibility of school building through simple adaptations to current infrastructures, such as ramps, or wider doorways, will increase accessibility for students that are confined to their homes and/or bedrooms.

Taking a family-centered approach is the only direction forward. Interviews and observations indicated that the financial impacts of having a child with a disability and enrolling them in schools are significant. Many parents of children with disabilities must stay home and care for their child. These parents are less likely to be able to work and participate in the labor market, contributing to increased poverty. Convincing parents to send their children to school rather than on the streets to beg for the family and providing them the financial support to transport their children and equip them with the necessary learning materials should be integral to any efforts to promote inclusive education.

Senegal has pledged to meet the Dakar Education for All goals by 2015. Although progress has been made towards educating girls and ethnic minorities, there is still a long way to go in regards to educating individuals with disabilities. It is difficult to accurately gauge the number of people in Senegal with disabilities, because so many are unregistered at birth, but based on the evidence we know this visible and invisible population is out there. An educational commitment by the government to this population is needed, not only in words but also in action. Educating students with disabilities together with their non-disabled peers in an inclusive environment will lead to a much needed community and societal attitudes shift. The public school should be the center of this shift, and classrooms should accurately reflect the population in the community.

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**PREVALENCE, DIAGNOSIS, TREATMENT AND RESEARCH ON AUTISM SPECTRUM DISORDERS (ASD) IN SINGAPORE AND MALAYSIA****Tina Ting Xiang Neik***SEGi University***Lay Wah Lee****Hui Min Low***Universiti Sains Malaysia***Noel Kok Hwee Chia****Arnold Chee Keong Chua***Nanyang Technological University*

*The prevalence of autism is increasing globally. While most of the published works are done in the Western and European countries, the trend in autism research is shifting towards the Asian continent recently. In this review, we aimed to highlight the current prevalence, diagnosis, treatment and research on Autism Spectrum Disorders (ASD) in Singapore and Malaysia. Based on database searches, we found that the awareness about autism among lay and professional public is higher in Singapore compared to Malaysia. The special education system and approach towards autism treatment is also different between both societies although the culture is similar and the geographic location is close. Main findings and implications were discussed in this review. The lack of study on autism prevalence in this part of the world commands a critical need for further research. Perhaps more collaborative work between both countries could be done to expand the knowledge in autism.*

Autistic Spectrum Disorder (ASD) is a type of neurodevelopmental disorder affecting the mental, emotion, learning and memory of a person (McCary et al., 2012). According to the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV) (American Psychiatric Association, 2000), ASD is characterized by three features. Firstly, impairment of social interaction, which includes but not limited to impairment in the use of multiple nonverbal behaviours such as eye-to-eye gaze, facial expression, body postures and gestures to regular social interaction. Secondly, impairment in communication, which includes but not limited to delay in or total lack of the development of spoken language, or impairment in the ability to initiate or sustain a conversation with others. Thirdly, there is restricted, repetitive and stereotyped pattern of behaviour, interests, and activities, which include but not limited to inflexible adherence to specific, nonfunctional routines or rituals (APA, 2000). Many official health reports on ASD have shown that there is an increase in the number of ASD cases over the years. One of the most comprehensive ASD prevalence study done so far is the one done by the US Centers for Disease Control and Prevention (CDC)'s Autism and Developmental Disabilities Monitoring (ADDM) Network (Autism and Developmental Disabilities Monitoring Network, 2012). In its latest study in 2008, the rate of US cases rose from one in 110 in 2006 to about one in 88 children in 2008. In fact, the autism numbers skyrocketed since 2002 (Autism Spectrum Disorders – Data & Statistics, 2014). This number has caused a public health concern worldwide. Health officials attribute the increase in autism cases through greater awareness, wider screening and better diagnosis (Weintraub, 2011). But the numbers increase at a rate so fast that researchers start to question if these are the true factors that justify the increase (Weintraub, 2011). Growing evidences have shown that environmental and epigenetic factors could contribute towards autism incidence (Persico & Bourgeron, 2006), which include possible causal factors such as genetic mutations (Freitag, 2007) and various environmental agents that would cause birth defects (Arndt, Stodgell, & Rodier, 2005). Yet in all its efforts to understand the underlying cause of ASD which knows no bounds in affecting children across racial, ethnic and socioeconomic groups,

scientists are yet to identify a way to prevent this developmental disorder from happening. Nevertheless, due to its high incidence rate recently, ASD should be treated as a public health emergency that demands immediate attention globally.

#### *Overview of Autism Prevalence Study Done Globally*

A quick search on the prevalence study of ASD was done through databases including Science Direct, ProQuest and Web of Science and Medline. Results from these databases showed that prevalence studies were mainly done in the Western and European countries. A systematic review on global prevalence of autism has confirmed this (Elsabbagh et al., 2012). Another review paper report the countries where such study was performed, which included United Arab Emirates, United States, Norway, Canada, Germany, Sweden, France, Iran, Iceland, Finland, Israel, and Britain (Matson & Kozlowski, 2011). For Asia, autism prevalence studies mostly came from Japan, China, Taiwan and Indonesia (Elsabbagh et al., 2012; Sun & Allison, 2010). In a related review paper, Hong Kong was also included (Sun et al., 2013). More recently, a national prevalence study conducted from 2005-2009 in the South Korean community among children aged 7 to 12 was reported (Kim et al., 2011). China is also catching up with the launching of their first nationwide study on autism prevalence starting July this year. This three year project involves collaboration between Fudan Children's Hospital in Shanghai and national health authorities with a sample size of up to 200,000 with geographical diverse middle school pupils aged 6 to 12 (Compton, 2013).

To our knowledge, there is no published report on nationwide autism prevalence study in the Southeast Asia so far. Singapore and Malaysia, both located at the same geographic region, share a number of common features of being multi-ethnicity with rich cultural diversity. These two countries would serve as a good representation of Southeast Asian context in many types of research studies. This literature review aims to fill the gap in knowledge by providing what has been done so far for autism studies in these two countries. In particular, we will discuss about the prevalence, diagnosis, treatment and types of autism research done with implications highlighted at the end of the paper.

#### *Prevalence*

In Singapore, although the first overview study about autism in children was done in 2001 (Bernard-Optiz, Kwook, & Sapuan, 2001), a search from the government official website such as Ministry of Health (MOH) (Singapore Ministry of Health, 2013), Ministry of Education (MOE) (Singapore Ministry of Education, 2013) as well as autism official website such as Autism Resource Centre (ARC) Singapore (Autism Resource Centre Singapore, 2013), and Autism Association Singapore (AAS) (Autism Association Singapore, 2013) found no official records of total number of local children with autism. However, health records from 2003-2004 from the Department of Child Development, Kendang Kerbau Women's and Children's Hospital (KKH) revealed that ASD is the most common clinical development diagnosis among young children (Lian et al., 2012).

Similarly, in Malaysia, there is no official registry for the number of children with autism (See, 2012). This is partly because autism is categorized under learning disabilities along with other cognitive and developmental disabilities (The Ministry of Education Malaysia, 2012). However, a local survey conducted revealed that one in every 625 Malaysian children has autism (Azizan, 2008). This local survey is not accessible at the time of this literature review and the data may not be the most current. However, just like anywhere else in the world, the fact that there is indeed an increase in local ASD cases is undeniable. According to the National Autism Society of Malaysia (NASOM) (The National Autism Society of Malaysia, 2013), there has been a 30% increase in the organization's intake of individual's with autism in the past three years (Cheong, 2009).

#### *Diagnosis*

In Singapore, the diagnosis of autism is done by developmental pediatricians and child psychology departments in private or national hospitals (Autistic Spectrum Disorder for Child, 2013) such as the Child Development Unit (CDU) at KK's Women and Children's Hospital. A strong support network for autism in the community has also allowed many parents to seek help from specific autism centre such as ARC, Singapore where services like assessment and diagnosis are provided. Some of these facilities offer subsidies for diagnosis and treatment to affected families too (Autism Association Singapore, 2013; Autism Resource Centre Singapore, 2013). The availability of adequate autistic diagnosis centers with affordable treatment cost also demonstrates that there is a certain level of public awareness on the importance of early diagnosis and intervention of ASD in the society.

Unlike Singapore, Malaysia covers a much wider geographical area. Malaysia has a total landscape of 329,847 square kilometres (Malaysia Department of Statistics, 2011), compared to a size of 716.1 square kilometers in Singapore (Singapore Department of Statistics, 2013). The facilities available for children with ASD in the urban and rural areas could be quite drastically different. In the urban areas such as the capital city Kuala Lumpur and the surroundings, there are public and private medical centres which offer various intervention programs for children with ASD. One of the centres is Child Development Centre (CDC) in Hospital Universiti Kebangsaan Malaysia (HUKM) which offers diagnosis services to children with special needs, including children with ASD (Yoga, 2012). Besides, the National Autism Society of Malaysia (NASOM) is an example of non-governmental organizations (NGOs) dedicated for autism, which plays an important role in offering assessment and diagnosis services to the affected children (The National Autism Society of Malaysia, 2013).

Due to the lack of facilities in the rural areas, these centres are forced to serve a wider population than intended, which includes children and families who travel from inlands and other states. This causes a long waiting list at the specialists, especially those in the public services (Azizan, 2008; Hew, 2000).

At the same time, there is a lack of knowledge on ASD among many affected parents in Malaysia (Dolah, Yahaya, & Chong, 2011). As a result, the diagnosis is often done much later during the childhood. In 2009, The Malaysian Ministry of Education introduced a screening program during the school entry (Year 1), known as the Literacy and Numeracy Screening (LINUS) programme. (Linus 2.0 programme in all primary schools soon, 2012). Under this programme, students who are identified with learning difficulties would be referred to medical professional for further diagnosis (Every child has potential to succeed, 2012). Therefore, it is possible for children with ASD to be diagnosed via this route. However, it is often too late to diagnosis a child with ASD at this time.

#### *Treatment*

Although there is no treatment to cure autism, studies support that early diagnosis of autism followed by early intervention programme (EIP), especially behaviour modification, would help to increase the child's cognitive level (Dawson et al., 2010). In Singapore, the ASD early intervention plan is laid out clearly in the Clinical Practice Guidelines (Bee et al., 2010). In this guideline, it states that the intervention plan starts at pre-school level. The intervention methods include Early Intensive Behaviour Intervention (EIBI) and Developmental Models. Although Sensory Integration (SI) is used, it is not a recommended standard therapy. Similarly, this method is also practiced minimally in Malaysia (Leong, Stephenson, & Carter, 2011). Aside from getting EIPs from the child specialist clinic, most of the EIPs in Singapore are run by specific autism centers that offer different models. For example WeCAN EIP, which is supported by ARC uses Individualized Education Plan (IEP) model (WeCAN Early Intervention Programme, 2013). The other one would be Early Intervention Programs for Infants and Young Children (EIPIC) that is run at 11 centers (Chong et al., 2012).

In Malaysia, due to the long waiting list in the public centres, it is more common for parents to seek treatment from NASOM or privately-owned entities. For example, Early Autism Project Malaysia Sdn Bhd is a private company, which offers both home- and centre-based Applied Behaviour Analysis (ABA) therapy (Early Autism Project Malaysia, 2013). The same therapy is also offered by Autism Link Sdn Bhd through classroom and group programmes for children aged 3-6 years (Autism Link Malaysia, 2013). Parents would need to pay a certain amount of fees for treatments at these centers.

An important aspect in autism treatment is special education (SPED) for children with ASD. In Singapore, as at January 2010, there are 20 SPED schools that are run by Voluntary Welfare Organizations (VWOs), funded by Ministry of Education (MOE) and National Council of Social Service (NCSS). Out of which, three are dedicated for autistic children including Pathlight School, Eden School and Saint Andrew's Autism School (Chia, 2013). These schools run SPED from primary to secondary level. At secondary level, the academic track is offered by Pathlight School while Eden School and St Andrew's Autism School offer vocational track (Chia, 2013).

In Malaysia, the SPED schools cater only for children with hearing and visual impairment. Children with learning disabilities are educated within the Integrated Programmes that are run as segregated classes in mainstream schools (The Ministry of Education Malaysia, 2008). Currently, there are 1,945 regular schools in the country that run such Integrated Programmes throughout the country (Every child has potential to succeed, 2012). Meanwhile, there is no governmental-support autism school but there is a NGO autism school called Hua Ming (Hua Ming Autism Society, 2013). It is the only autism school in

the country that is established in 1996 by a group of passionate parents having children with ASD. It teaches children aged 2 to 15 years old by adopting the Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) programme as well as Applied Behaviour Analysis (ABA) programme. Besides running academic curriculum, Hua Ming also conducts vocational training for the students (Hua Ming Autism Society, 2013). Many affected families have benefited from this school.

In line with the global trend (Forlin & Lian, 2008; UNESCO, 1990, 1994), the EIPs and special education (SPED) in Singapore and Malaysia are now preparing children with ASD to enter mainstream classes. In Singapore, the MOE has initiated *Support for Special Needs in Mainstream Schools* in which funds were allocated to support students with special needs in mainstream schools (Ho, 2009). This initiative has successfully prepared the mainstream schools with the learning environments supportive of children with ASD when more and more of these children were enrolled into the mainstream schools (Leow & Quek, 2010).

In Malaysia, selective placement of children with special needs in mainstream classes occurs on a child-specific basis (Lee, 2010). However, such placement is not mandatory and the decision lies solely on the school's administration prerogative based on advice by the school's special education teachers (The Ministry of Education Malaysia, 2008). This gives rise to a situation which Lee and Low (2013) describes as 'unconscious inclusion' of students with special needs. At both preschool (Razali, Toran, Kamaralzaman, Salleh, & Yasin, 2013) and primary school levels (Lee & Low, 2013), students with ASD in Malaysia are found to be included into mainstream education after mutual decision between the school administrative and the parents. This laid-back attitude towards inclusion is about to change as 30% of children with special needs are targeted for enrolment in mainstream classes by 2015, and 75% by 2025 under the National Education Blueprint (The Ministry of Education Malaysia, 2012) initiatives.

#### *Current Autism Research*

A quick search on autism research was done through Web of Knowledge database using *Autism Singapore* and *Autism Malaysia* as keywords. Previous studies on ASD conducted by Singapore and Malaysia with its key findings are tabulated in Appendices 1 and 2 respectively.

From Appendices 1 and 2, it is evident that there are more published journals in autism research in Singapore compared to Malaysia. The majority of the studies conducted in Singapore are more focused on the disability. These include parents' perspective and expectations, studying challenging behaviours and testing usefulness of screening tools and intervention methods of children with ASD. While those conducted in Malaysia are more general which covers a range of disabilities with limited focus on ASD study. The number of citations for Singapore studies is comparatively higher than that of Malaysia, suggesting a wider accessibility and greater impact globally.

As mentioned, scholarly research on ASD in Malaysia is limited and this has been highlighted repeatedly in the local press (Azizan, 2008; Dolah, Yahaya, Chong & Mohamed, 2012). This scarcity is reflected from the citation in the limited scholarly published work done locally, which cited sources from local press such as Money and Distance Letting Down Children with Autism (2010) as cited in Pohand Tan (2012), and The Burden of Autism by Azizan (2008) as cited in Dolah et al. (2011); Dolah et al. (2012). There is a lack of primary data on autism where publication is concern. Researchers who are involved in autism find it difficult to obtain data from the national registry. For example, the number of registered autism cases or child developmental disorders cannot be found anywhere from the Social Welfare Department, MOH nor MOE websites in the course of this literature review. Nevertheless, there is one published work to find out about autism awareness in the society, and another one to gather data on the incidence of autism amongst undergraduate students in a local university (Dolah et al, 2011; Dolah et al., 2012). In both these studies, primary data was collected.

#### *Implications of Study*

By comparing the current status on what had been done for autism in both countries, gaps in knowledge can be identified. For example, the urgent need for expansion of autism research especially in Malaysia is spotted. Although Singapore also lacks in epidemiological studies on autism, the scholarly research is comparatively better in terms of quantity, depth and scope. The endorsement of government guidelines in autism such as the Clinical Practice Guidelines has increased the credibility of the research (Bee et al., 2010). Guidelines in the Malaysian context are still much broader and less differentiated for specific disabilities.

However, regardless of developmental status, in both nations, data collection, diagnosis and treatment are still primarily driven by private entities, which suggest that there is still a lot to be done for autism research in both countries. As a start, more current prevalence studies should be done locally for better understanding of how widespread autism is in this part of the world compared to other regions. Some other potential topics that can be researched on following this literature review would be the impact of ethnicity on autism incidence, considering the cultural diversity in both Malaysia and Singapore. This would add value to the current knowledge of autism research.

### Conclusion

This review compiled numerous previously published studies on the prevalence, diagnosis, treatment and research on ASD in Singapore and Malaysia and demonstrated their respective current trends of development in ASD research at different levels. In Malaysia, the awareness level on autism is still quite low. Due to the limited public awareness, children and adults alike who suffer from this developmental disorder are often not given their due dignity but treated as people with mental problem (Hew, 2000). The plight to restore this ignorance through a better education system (Amar-Singh, 2012; Amar-Singh, Wong, & Toh, 2013a, 2013b; Hopeful-Teacher, 2012) such as more initiatives from the government to set up EIP and partnership with relevant NGOs (Amar-Singh, 2011), as well as more job opportunities for occupational therapists, and speech-language therapists especially in schools (Azizan, 2008; Low, 2012; Veera, 2002) were all reported in the local press by the respective special education specialists.

Findings from this review suggest that continuous efforts are needed toward raising awareness on autism and improving the quality of life of the affected families in both Singapore and Malaysia. Collaboration between stakeholders in Malaysia and Singapore can be expanded in such efforts. This collaboration can occur at multiple levels for example the NGOs with strong support from parents, and also at the academic research levels. Efforts and supports should extend beyond childhood so that the individuals with ASD may one day become valuable members of our community. Finally, the authors hope that this review paper will help to promote future ASD-related research in Asia as this region continues to raise its standard of living in all aspects.

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#### Appendix 1. Current Studies on Autism in Singapore

Authors(s) Year	Research Design/Aim/Participants	Main Findings
Poon (2013)	Qualitative research (interview method) to investigate Singaporean parents' expectations on their adolescent with ASD future/20 parents	Majority expected their children to be unemployed or working in sheltered workshops. All parents cited that their children would stay with them and half wished that relatives can care for them.
Chong et al. (2012)	Mixed method research (exploratory factor analysis and focus group discussion) to evaluate the extent to which the 11 EIPIC programs for children with moderate and severe disabilities in Singapore provided a family-oriented service / 310 parents of whose children participate in the program	Results from factor analysis suggested that parents perceived family-centered practices to be carried out to a moderate or great extent in the program. The focus group interviews suggested that families wanted more parent-to-parent support by providing a platform to share common grief, interests, information and resources.
Koh and Milne (2012)	Quantitative research (standardized questionnaire) to assess cultural influence (Singapore and England) on perceptual style that is field dependent or field independent in children with ASD / 104 children from both countries including control group	Found increased field-independence in English participants with ASD compared with their Singaporean counterpart.

Lian et al. (2012)	Quantitative research (referral reports) to establish the first regional database for CDABD by evaluating profiles & outcomes of children referred to CDU in KKH from 2003 to 2004	Most common clinical developmental diagnosis was ASD (30%). ASD remained the most common definitive developmental diagnosis with 31% at one year.
Moh and Magiati (2012)	Quantitative research (survey method) to find out parental experiences of the process of diagnosis of ASD and to explore possible factors associated with parental stress and satisfaction / 102 parents of affected children with diagnosis period since 2001, 17 professionals from both private and public organizations providing ASD diagnostic service	High parental stress was related with more professionals consulted. Parents were more satisfied when they collaborated closely with professionals and received better or more helpful information. As part of the diagnostic process, parents whose children presented more severe ASD symptomatology reported lower levels of satisfaction.
Poon (2012)	Quantitative research (standardized questionnaire) to understand factors that impact the challenging behaviours of children with ASD and MD/Teachers of 322 and 132 children with ASD & MD respectively	Children with ASD showed higher levels of challenging behaviours as compared to children with MD. Age, diagnosis and gender were significantly associated with challenging behaviours.
Ooi, Rescorla, Ang, Woo, and Fung (2011)	Quantitative research (standardized questionnaire) to assess utility of CBCL to differentiate ASD group from non-referred group (school group), ADHD-IA, ADHD-HI/C, and undiagnosed/ 1265 individuals	Moderate to high sensitivity (68-78%) & specificity (73-92%) was found in nine CBCL items for the identification of ASD with respect to four different comparison groups. Overall, this study provides strong support for using CBCL as a screening tool for ASD.
Poon (2011)	Quantitative research (standardized questionnaire) to describe activities and participation of adolescents with ASD and to examine the suitability of the Activity and Participation component of the ICF in achieving this purpose / 20 parents of affected children	By using the APRS rating score (part of the ICF and developed for this study), adolescents found more difficulties with participation than with engaging activities. Concurrent results from a standardized VABS-II measuring adaptive skills of ASD individuals support the use of APRS as a measure of adaptive skills.
Lian et al. (2008)	Quantitative research (survey method) to explore the knowledge, attitudes and practices amongst pre-school teachers concerning CDABD / 503 pre-school teachers	Overall knowledge of CDABD amongst pre-school teachers was inadequate. However, it is encouraging that most of them were interested to be trained on how to help CDABD.
Bernard-Opitz, Ing, and Kong (2004) Bernard-Opitz et al. (2004)	Mixed method research (standardized questionnaire and video-recording) to compare beneficial effects of traditional behavioural approach and natural play approach as intervention in ASD children/ 8 ASD children and their parents, and therapists	Children in both groups showed improvements in play, attention, compliance, and communication with therapists and parents. These beneficial effects vary with the two interventions, their sequence (cross-over design) and interaction partners.
Bernard-Opitz et al. (2001)	Quantitative research (survey method) to examine the epidemiology of autism in children, focusing on the child's background, behaviour problems and skill profile, home and school situation as well	Findings suggested that autism is diagnosed before 3 years of age, much earlier than the UK, which is a positive sign. Majority of the children have behaviour problems, which is mainly

as linguistic and social background / 176  
parents of affected children

contributed by high prevalence of working parents and involvement of foreign maids as caregivers. Lack of conducive home environment for the affected child also hinders their developmental progress.

Note: ASD: Autism Spectrum Disorder; CDABD: Childhood Developmental and Behavioural Disorders; CDU: Child Development Unit; KKH: KK Women's and Children's Hospital; MD: Multiple Disabilities; EIPIC: Early Intervention Programme for Infants and Children; CBCL: Child Behavior Checklist; ADHD-IA: Attention Deficit Hyperactivity Disorder-Inattentive type; ADHD-HI/C: Attention Deficit Hyperactivity Disorder-Hyperactive and Impulsive or Combined type; APRS: Activities and Participation Rating Scale; ICF: International Classification of Functioning, Disability and Health; VABS-II: Vineland Adaptive Behavioural Scales-Second edition

### Appendix 2. Current Studies on Autism in Malaysia

Authors(s) Year	Research Design/Aim/Participants	Main Findings
Dolah et al. (2012)	Quantitative research (survey method) to find out the probability of detecting autism symptoms among adults with average intelligence by using ASQ / 76 undergraduate students of different race	Findings from this study showed that majority of the respondents scored average points for autism symptoms. This finding can be used to develop educational materials to educate the public about autism symptoms.
Joginder-Singh, Iacono, and Gray (2011)	Quantitative study (standardized questionnaire) to compare practices by SLPs from two different countries with children with developmental disabilities who are pre-symbolic / 65 and 157 SLPs from Malaysia and Australia respectively	SLPs from both countries were most likely to rely on informal assessments rather than structured assessments. SLPs from both countries focused on enhancing the children's pre-verbal, play, and requesting skills, as well as educating parents about how to facilitate their child's communication. More Australian than Malaysian SLPs introduce AAC system as initial therapy goal. Similar challenges were reported by SLPs from both countries when conducting assessment and providing intervention.
Leong et al. (2011)	Qualitative study (interview) to explore the perceived effectiveness of using SI therapy in improving the behaviour of children with special needs / 10 teachers and supervisors from intervention centres for children with special needs	Findings showed that the implementation of SI therapy was limited and largely unstructured in the intervention centres. There was a lack of policy on the use, assessment, monitoring and planning of SI therapy. Besides, many of the forms of SI therapy described could not be easily differentiated from the regular activities in educational programmes.
Iradah and Rabiah (2011)	A book chapter on testing of learning performance of high-functioning autism students using multimedia approach ( <i>EduTism</i> educational system).	Results supported that teachers agreed that <i>EduTism</i> is a good educational tool to help autistic students learn better. The students were also excited to learn from the software. This software is useful for teachers and parents to track the learning progress of affected students.
Yusoff,	A book chapter on testing of the usage of	This system is able to assist special

Wahab, Aziz, ESSE system to help teachers identify education teachers in screening and  
and Asha'ari children with ASD and dyslexia. diagnosis of children with special  
(2009) needs.

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Note: ASQ: Autism Spectrum Quotient; SLPs: Speech and Language Pathologists; AAC: Augmentative and Alternative Communication; SI: Sensory Integration; ESSE: Expert System for Special Education

## QUALITY OF LIFE OF STUDENTS WITH DISABILITIES ATTENDING JORDANIAN UNIVERSITIES

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*In spite of increasing number of students with disabilities in universities, there is limited research on quality of life of these students. This study aimed to identify the quality of life level of undergraduate students with disabilities at Jordanian universities. The sample consisted of (147) students. A quality of life scale was constructed, then it was validated, and then it was administrated to the sample of the study. Results revealed that students with disabilities have a medium level of quality of life expressed in a total score of (3.48), meanwhile, the highest mean was for religious and spiritual domain (4.4) and the lowest mean was for cognitive / mental domain (2.93). Results also revealed no statistically significant differences in all domains of the scale and the total score due to disability type or severity. In addition, there are statistically significant differences in the total score due to gender in favor of females.*

There has been an increased interest during recent years in the concept of quality of life (QoL) and it has become the purpose of research for psychologists, sociologist, physicians and philosophers (Moons, Budts & De Geest, 2006; Rēklaitiene, Karpavčiūtė, & Požerienė, 2010). Wagner (2000) identified six visions of a better future for individuals with disabilities; one of these important visions was quality of life (Taylor, Richards, & Brady, 2005).

There is a wide agreement that QoL is a vague concept, which is difficult to define. There is superfluity of definitions in existence; there is no concordant definition (Ball, et al., 2000; Frytak, 2000; Tsonis, McDougall, & Irwin, 2012). McDowell and Newell (1996) described the term as *intuitively familiar* (p.382), suggesting that everyone supposes that they know what it means; whereas, in actuality its meaning differs between persons (Counrey, & Duggan, 2003). Previously, the term was known as *life satisfaction* or the term *subjective well-being* was used instead of QoL (Rimmerman, & Crossman, 2004).

According to the definition of quality of life (QL) presented by World Health Organization WHO (*World Health Organization Quality of Life Group, 1998*), *QoL is defined as individuals perceptions of their position in life in the context of culture and value system in which they live and in relation to their goals, standards, and concerns* (p. 1570). Furthermore, quality of life is a comprehensive evaluation of the actual conditions of the one's life. Primary, it is a subjective perception of well-being, which includes physical, psychological and spiritual dimensions (Frytak, 2000; McDowell, 1996). It is satisfaction with one's living conditions (residential and work environment), with various other aspects of lifestyle, material well-being, social organization of society, cultural and spiritual life, relations with nearest people, with community and self-expression opportunities (Oleson, 1990).

A person's assessment of the life's satisfaction involves the degree of importance for a given domain for the person, and the degree of personal satisfaction with that domain (Rimmerman, & Crossman, 2004). Quality of life is closely connected with various spheres of life: physical, psychological, environmental,

social relations, and a person's health (Rotstein, Barak, Noy, & Achiron, 2000). Definitions of QoL include both objective and subjective components (Ball, et al., 2000; Frytak, 2000).

Consequently, the expansive range of instruments used to measure QoL tend to fall into three broad categories; those which focus on objective indices, such as economic circumstances, housing, and functional status; those which measure purely subjective aspects, such as moral, happiness, and life satisfaction; and those which contain both objective and subjective dimension, such as health related quality of life (HRQL) measures (McDowell, 1996). Because of the absence of a cohesive definition and the subjective nature of this concept, the choosing of a QoL measure tends to reflect the conceptual bias of the researcher (McDowell, 1996; Arnold, 1991; Counrey, & Duggan, 2003).

Educational literature mentioned many factors that influence QoL, such as employment variables including years of seniority, monthly income and participating in non-employment activities, disability severity: percentage of medical disability (an objective measure) or person's perception of his/her severity of disability (subjective measure) (Rimmerman & Crossman, 2004). In addition, Skucas and Mockeviciene (2009) mentioned other variables: age, gender, physical activities and the level of injury. Meanwhile, Rubin and Roessler (2001) stated variables such as, rehabilitation, vocational training, and employment. Buchanan (2011) stated that research documented several demographic measures that been found related to psychological well-being, including, race, socio-economic status and academic achievement.

There is increasing number of students with disabilities at universities (Fichten et al., 2003; Buchanan, 2011; Newman, Wagner, Cameto, & Knokey, 2009). Research indicated that these students face difficulties in attaining a job, low level of independence, and low quality of life level after graduation (Doren, & Benz, 2001; Lindstrom & Benz, 2002; Madaus, 2005; Dowrick, Anderson, Heyer, & Acosta, 2005). In addition, transition to higher education and to work formulated challenge for all individuals. Moreover, research showed that students with disabilities are considered a minority that faces many constraints that limit their full involvement in university education (Erten, 2011). This growing population warrants a better understanding of its specific needs. However, there is limited research on students with disabilities in postsecondary institutions (Jorgensen, Fichten, Havel, Lamb, James, & Barile, 2005).

Research studies that investigate QOL of individuals with disability have been growing in recent years. For instance, in a study of 98 adults with multiple sclerosis (MS), Bishop, Stenhoff and Shepard (2007) found that, in spite of fatigue and limitations of MS, many participants indicated a high level of quality of life. Roberts, Macmath, Martin and Sigalet (2006) conclude that Pectus excavatum (funnel-chest) had a negative consequence on quality of life. After the Nuss procedure, all spheres of adolescent quality of life improved. Similarly, Roberts, Massie, Mortimer and Maxwell (2005) examined quality of life of students with congenital heart disease. Result indicate that to optimize the school experiences of these students, medical and school professionals who work with must consider the Five C s: communication, confidentiality, consistency, competence, and compassion.

Mayton (2005) conducted a pilot qualitative case study to investigate how QOL of a student with Asperger's syndrome was affected by her placement in an inclusive education alternative which didn't provide any specialized social skills instruction. Results showed participant satisfaction with physical safety, teacher acceptance, and access to needed materials. Meanwhile, Miller and Dishon (2006) explored the impact of patient characteristics of disability, gender and employment statuses health-related quality of life (HRQOL) in multiple sclerosis (MS). Results showed that the level of QOL of MS patients is lower than healthy individuals. While employed have higher QOL than unemployed, the former are more affected by physical disability. Noy, Kaigang, Xia, Nattiporn, and Bock-Hee (2009) conducted a study aiming to examine the association between hopeless feelings, suicidal behavior and spheres of the WHO Quality-of-Life-BREF spheres among college students (n=1,217) in Korea, Thailand, and China. Results showed that most spheres of the QOL were significantly associated with hopeless feelings among Chinese, Thai, and Korean students. Also, all spheres were significantly connected with suicidal behavior among students except the psychological sphere among Thai students.

In their study, Skucas and Mockeviciene (2009) concluded that age, gender and physical activity have an influence on QOL of individuals with a spinal cord injury. The duration of the injury didn't have an essential influence on QOL of these persons. Additional research by Rēklaitiene, Karpavčiūtė and Požerienė (2010) examined QOL of individuals with hearing impairment. By using the general

WHOQL- instrument, quality of life of 18-years old individuals with hearing impairment as well as individuals without disabilities was assessed. The conclusion is that individuals with hearing impairment perceive their social relationships, general life and health quality spheres higher than individuals without disabilities.

In another study, Erten (2011) conducted a qualitative study, aimed at specifying perspectives of students with disabilities studying at a postsecondary institution in Canada. Both individual characteristics, such as disability conditions, and contextual factors including attitudes of faculty members and peers were reported as challenges affecting students' full involvement in university life.

In a study of psychological well-being of college students with Attention Deficit/Hyperactivity Disorder (ADHD) Buchanan (2011) conducted a study to a (317) undergraduate students at a Southern University. Students with self-reported ADHD had lower scores on total well-being, environmental mastery, personal growth, and purpose in life. They reported comparable levels of autonomy, self-acceptance, and positive relations with others. Findings suggested that students who reported an ADHD diagnosis were similar to other students in their perceptions of well-being, but perceived more difficulties in their organizational and goal-oriented competencies.

In a more recent study, Filce and Laverne's (2012) study aimed at identifying the effect of a one-week residential program on 89 individual with bowel and/or bladder dysfunction in QOL. Results indicated that the health-related independence domain of Knowledge about Your Condition and quality of life domain of Self were significantly impacted and were sustained 2-4 months after the program. Additional research by Tsonis, McDougall and Irwin (2012) was conducted to examine QOL of individuals who were childhood cancer survivors. Researchers used Grounded Theory to analyze in-depth interviews. Findings indicate that participants use a process of specific procedures and intervening conditions to deal with impacts and effects, resulting in life enjoyment, or good QOL. The identification of this process has led to an emergent theory titled Interrelated Processes toward Quality of Life Theory.

#### *Significance of the Study*

Educational literature considers QoL as a current trend in special education and its final goal. However, there is no Arabic or Jordanian study that has been conducted to investigate this concept, this necessitates conducting research to identify QoL of persons with disabilities in general, or undergraduate students with disabilities attending universities in specific. In spite of the increasing number of students with disabilities in Jordanian universities, there has been few research that examining the in-depth status of undergraduate students with disabilities, including hearing, visual and physical disabilities. Yet, this phase is considered crucial for transition to adulthood and prepares students for future career.

Furthermore, educational literature and practitioner notices indicate that students with disabilities suffer from the lack of services, opportunities, and a lot of problems in variance aspects of QoL emergent from disability condition. Through QoL, we will provide insights into the level of QoL of these students.

Overall, this paper describes results of a survey aimed to examining the level of quality of life of undergraduate students with disabilities in Jordanian universities. This study attempted to answer the following questions:

1. What is the level of quality of life of undergraduate students with disabilities in Jordanian universities?
2. Do the level of quality of life of undergraduate students with disabilities in Jordanian universities differ due to student's gender, type of disability, and severity of disabilities?

#### **Methods**

##### *Participants and Settings*

Study sample was assigned by contacting the deanship of students' affairs to obtain a list of all students with disabilities (n=200) who attending three Jordanian universities during the academic year of 2012/2013. Purposeful sample was used to choose all students with disabilities who are in contact with the deanship of students' affairs (n=147). Table 1 reflects distribution of participants.

**Table 1: Distribution of Participants According to Gender, Education Level, Years of Experience and Type of Disability**

<i>Variable</i>	<i>N (%)</i>
Gender	
<i>Males</i>	84 (57.1%)
<i>Females</i>	63 (42.9%)
Type of disability	
<i>Hearing Disabilities</i>	35 (25.7%)
<i>Visual disabilities</i>	41 (30.1%)
<i>Physical Disabilities</i>	57 (41.9%)
Severity of disability	
<i>mild</i>	29 (19.7%)
<i>moderate</i>	62 (42.2%)
<i>sever</i>	56 (38.1%)
Academic level	
1	31 (21.1%)
2	37 (25.2%)
3	42 (28.6%)
4	32 (21.8%)
<i>More than 4</i>	5 (3.4%)
Marital status	
<i>Never Married</i>	130 (88.4%)
<i>Widowed</i>	3 (2.0%)
<i>Divorced</i>	4 (2.7%)
<i>Married</i>	10 (6.8%)

*Instrumentation and Implementation*

QoL scale was developed to identify the level of quality of life of undergraduate students with disabilities in Jordanian universities. This scale was consisted of two sections: Part I required students to provide demographic information by placing a check mark next to items that applied. Part II prepared to gather information about students' perception about the level of quality of life, this section was consisted of six dimensions, covering (69) items. These dimensions are: physical (1-16), psychological (17-33), cognitive (34-40), social (41-53), spiritual and religious (54-61) and university life domain (62-69). Then an individual meeting is made with students, and items are recited to them to choose the answer, which corresponds with their perception of QoL levels, at a 5 point Likert-type scale, (ranged from (1) indicating *never*; to (5) indicating *always*).

To investigate the validity for the survey, ten experts and reviewers were asked to review items and provide feedback to authors. All reviewers' comments and suggestions were taken into consideration and were incorporated in the final survey. To add more validity to the construct of the survey, person correlation matrix was also used. The correlation among all the dimensions of scale and the total score ranged from (0.32-0.80) which was significant at 0.05. Reliability indicators were determined by using Cronbach's alpha, the coefficient alpha statistics was 0.86, reflecting good levels of internal consistency.

The implementation process included contacting the deanship of students' affairs in 3 universities to provide a list of students with disabilities studying in these universities and to facilitate the implementation process. Then the sample was selected purposefully. Survey instruments were filled later on. Then data were entered and analyzed.

*Data Analysis*

Data were entered and analyzed using the Statistical Package for the Social Sciences (SPSS-16.0). Descriptive statistics (e.g., means and standard deviations) were presented in the results section. In addition, one-way ANOVA and independent samples t test were used to check for any significant mean difference according to student's gender, type of disability, and severity of disability.

**Results**



To answer the first question, means and standard deviations were obtained. The scale used to measure the sample's responses was divided into three categories; Low level of QoL with a mean range of (1-2.33), average level of QoL ranged (2.34-3.67) and high level of QoL ranging (3.68-5.00). Table-2 shows students' perceptions regarding the level of QoL. As indicated, students with disabilities cited average level of QoL. Students rated spiritual and religious domain as the best domain of QoL. Meanwhile, cognitive domain cited as the lowest domain of QoL.

**Table 2. Means and Standard Deviations of Students' Perceptions of QoL**

<i>Domain</i>	<i>M (SD)</i>
<i>Physical</i>	3.20(0.80)
<i>Psychological</i>	3.52(0.80)
<i>Cognitive</i>	2.93 0.95)
<i>Social</i>	3.46 0.66)
<i>Spiritual and religious</i>	4.04 0.61)
<i>University life</i>	3.73 0.63)
<i>Total</i>	3.48 0.47)

Two independent sample t-tests revealed statistically significant mean differences between males and females in level of QoL seen by students with disabilities in favor of female ( $t = -2.35$ ,  $p < 0.02$ ).

On the other hand, a one-way ANOVA was used to determine the influence of severity and type of disability on the total level of QoL variable. The omnibus ANOVA statistic for this analysis revealed no statistically significant differences due to type of disability on the total QoL variable for students with disabilities ( $F = 0.11$ ,  $p = 0.89$ ).

Finally, ANOVA revealed no significant differences due to severity of disability related to QoL for students with disabilities ( $F = 2.27$ ,  $p = 0.107$ ).

### Discussion

This study aimed to explore the level of quality of life of undergraduate students with disabilities at Jordanian universities. Findings suggested that students with disabilities have medium level of quality of life as reflected in the total scores. Rimmerman and Crossman (2004); Roberts et al. (2006) confirmed that disability affects QoL. Also, these finding replicate earlier findings that suggested that individuals with disabilities pointed to that their level of QoL as being lower than individuals without disabilities (R  klaitiene, et al., 2010). However, Antonovsky (1992) suggest that in developed countries, with a better rehabilitation system, people with disability don't experience major psychological discomfort and their quality of life does not suffer.

We can interpret that this level was medium not low by what mentioned by Skucas and Mockeviciene (2009) who concluded that QoL is higher in age 21-24, and this is the age of participants of our current study. In addition, this result can be interpreted considering that the Jordanian universities concern with those student. This is clear in the presence of offices for students with disabilities. Field, Sarver and Shaw (2003) reported that learning to locate and make use of supportive services is vitally important for students with disabilities who may struggle in a postsecondary educational setting. And, more importantly, arriving to university approves that those students were provided with support and resources from their families and communities which helped, and enhancing their QoL.

Students rated religious and spiritual domain as the highest mean of QoL domains. This result is inconsistent with R  klaitiene et al. (2010), who mentioned that individuals with disabilities rated their QoL at a low level in a religious and spiritual domain. These findings were not surprising since we live in religious' commitment community; as there are a lot of principles and guidelines that induce to disability acceptance and rights of individuals with disabilities.

On the other hand, students rated cognitive / mental domain as the lowest mean of QoL. This result is considered reasonable because disability may affects cognitive abilities, such as memory, comprehension, learning and attention (Skelton, & Rosenbaum, 2010). Odacı, Kalkan and Karasu (2009) also mentioned that cognitive errors are meaningful predictors toward a QOL of individuals with disabilities. This result differs with Dalias, Mapelli and Volpe (2005) who mentioned lack of cognitive problems of individuals with disabilities.

Interestingly, findings of this study suggested that there are statistically significant differences in the total score due to gender, in favor of females. This is consistent with previous research that mentioned sex as an important variable affecting QoL (Miller, & Dishon, 2006; Skucas, & Mockeviciene, 2009; Shephard, 1991). Also, it supports Giangreco and Cloninger (1993) and Schwartz, Keyl, Marcum and Bode (2009) who reported differences in QoL due to gender in favor of women. However, this result differs with Valderrábano, Jofré, López-Gómez, Moreno and Sanz-Guajardo (2005) who indicated that there aren't differences between female and male in QoL. Moreover, it differs with Miller and Dishon (2006) who reported similarity between female and male in QoL. Also it contrasts with Skucas and Mockeviciene (2009) who indicated that males have higher level of QoL than females. Additionally, they indicated that components of QoL depend on gender, as QoL of males in terms of making a family and living in it, employment, the size of income, psycho-emotional state and mobility by car is higher than that of females.

Results of one-way ANOVA revealed no statistically significant differences due to type of disability. These results are supported by Nosek, Hughes, Swedlund, Taylor and Swank, (2003); Hallberg, Hallberg and Kramer, (2007) who mentioned that the crucial factor in achieving higher QoL is circumstance where individual lives rather than disability itself. From another angle, this result disagrees with Crompton (2010) who reported correlation between type of disability and QoL.

Furthermore, ANOVA revealed no significant differences due to severity of disability. This result is reinforced Rimmerman and Crossman's study (2004) who revealed that there isn't any correlation between severity of disability and QoL. This finding differs with Skucas and Mockeviciene (2009) who reported that QoL of persons with a spinal cord injury depends on the level of injury, as QoL of persons with a higher level of spinal cord injury is higher than that of individuals with a lower level of injury. Also it differs with Kober and Eggleton's study (2005) which indicated better QoL for individuals with higher functional abilities.

### **Conclusion**

This study provided further insight into the viewpoints of undergraduate students with disabilities in Jordan regarding their QoL. Despite of limitations of our study and the self-reported survey; nevertheless, students' perceptions were important to identify their QoL level. Students with disabilities who participated in the study have medium level of QoL.

The QoL instrument can be used to monitor the status of students with disabilities in physical, psychological, cognitive, social, spiritual and religious and university life for prevention of more severe negative QoL domains. Improving QoL can be achieved if we concentrate on evaluation of QoL by adopting a QoL scale to identify the level of QoL and the lowest score of it which considers an initial step that will guide the current and future enhancement processes of QoL and in the investigation of QoL among students with disabilities.

In sum, this study may provide knowledge about QoL among students with disabilities at Jordanian universities. Findings of this preliminary study may help universities administrators and disability units in Jordan to recognize and improve QoL of students with disabilities.

### *Limitations*

Current study possesses some limitations that should be considered when examining findings. These limitations included sample size; as the sample came from three Jordanian universities during the academic year of 2012/2013. Because the sample was not a random probability sample, findings must be interpreted with caution and this data may not generalize to other regions in the Jordan in terms of QoL. So we recommended conducting additional studies and recruiting greater numbers of participants.

Therefore, differences may vary when examined in more nationally representative samples. On the other hand, this study is only a self-reported study in which only students with disabilities perceptions have been presented. In future studies, different methods such as interview or observation could be used to achieve in-depth knowledge regarding QoL. We also recommend further research to compare individuals with disabilities and individuals without disabilities related to QoL along with other variables (e.g. age, self-determination, and the duration of the disability) and investigate QoL from perspectives of families and teachers.

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## TEACHERS' PERCEPTIONS OF STUDENTS WITH SPECIAL EDUCATION NEEDS IN CAMEROON SECONDARY SCHOOLS

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*This study examined teachers' perceptions of including students with special education needs in Cameroon secondary schools. Teachers (N = 130) from five secondary government, denominational or lay private schools in Buea subdivision of Cameroon, Africa, completed a 26-item survey. The survey was analyzed using descriptive statistics, t-tests, and ANOVA. The results show teachers' perceptions of students with special education needs were favorable; however specific areas of concern were noted that included insufficient resources for special education, lack of training to work with students with special education needs, additional stress and anxiety when teaching students with special education needs, and preventing the learning of other students. The discussion focuses on future direction for research and creation of awareness of special education needs of students in Cameroon secondary school.*

The education of students with special education needs has been a concern to the international community since the 1994 United Nations Salamanca statement and framework for action on special needs education (UNESCO, 1994). World nations committed to provide access for students with special needs to be educated with their peers. As a member of the United Nations, Cameroon has passed laws in relation to the education of students with disabilities. The education of individuals with special education needs was introduced in Cameroon in 1975 with the creation of the Ministry of Social Affairs (MSA), which was responsible for the well-being of individuals with disabilities (Yuh & Shey, 2008). Cameroon Law No. 83/13, Article 3, of July 1983, provided for the needs and protection of individuals with disabilities with three major provisions: integration of children in ordinary schools, admission in special classes, and admission into specialized institutions (Protection of Disabled Persons, 2003). Understanding teacher perceptions towards students with disabilities continues to be one way to assist with making progress in educating students with disabilities.

A Review of the Present Situation in Special Needs Education in Cameroon suggested that children with severe language, learning or behavior problems were excluded from the public education system. Categories of special educational needs were not included in the legislation (Hegarty, 1995). The review also discussed the lack of administrative structures that deal with specific issues of special education. The government takes an active role in the supervision of private agencies that provide services and education for individuals with special education needs.

Historically, individuals with special needs are not educated in the general education setting. In the school setup, students with special education needs are neither categorized nor registered in the school. As of 2003, only 10 institutions (segregated schools for more significant disabilities such as visual impairments, multiple disabilities (mostly physical), deaf/hard of hearing, and behavioral disorders) existed in Cameroon that serve the needs of individuals with disabilities; out of the ten, only two are government institutions (Yuh & Shey, 2008). The lack of specification in the legislation for the education of students with special education needs leads to the general belief that individuals with disabilities are to be educated in a segregated environment. Many students with special education needs do not have access to basic education in Cameroon (Yuh & Shey, 2008). Titanji (2008) argued that Cameroon needs to move from passing the laws on Education for All in an inclusive environment to the actual implementation. This move will involve all stakeholders in education in Cameroon: parents, teachers, principals and head teachers, and policy makers.

The attitudes and perceptions of teachers towards students with disabilities in both developed and developing countries has been researched (Fakolade, Adeniyi, & Tella, 2009; Gal, Schreur, & Engel-Yeger, 2010). Teachers' attitudes were found to contribute to the success of students with disabilities in general education classrooms (Avramidis & Norwich, 2002). Dupourx, Hammond, Ingalls, and Wolman (2006) discussed that the attitudes and beliefs of teachers contributed to their abilities to accommodate students with disabilities in their classes.

Kataoka, Kraayenoord, and Elkins, (2004) researched principals' and teachers' perceptions of learning disabilities in Japan. Five factors of principals' and teachers' perceptions of learning disabilities were analyzed: changes in the family and social situation, insufficient knowledge of and support for learning disabilities, teachers' abilities and professional development, teacher's situation, and government issues. The study indicated that the busy lives of teachers and the pressure of teaching contributed to the difficulties of teaching students with disabilities. On the other hand, principals perceived that learning disabilities were caused by family and social issues, which included parental discipline of the students.

Lopes, Monteiro, Sil, Rutherford, and Quinn (2004) surveyed first through ninth grade general and special education teachers' perceptions about teaching problem students in general education classrooms in Portugal. The majority (85%) of the general and special education teachers indicated that resources were limited to teach students with learning and behavior problems in general education classrooms and more than 90% of the teachers indicated that inclusive education is a set of services and not a specific place. The authors also suggested that even with collaboration with special education teachers, general education teachers do not see much improvement in the academic performance of problem students.

Ocloo and Subbeya (2008) investigated the factors that influenced teachers' perceptions and attitude, and teachers' views towards the placement of students with disabilities in general education classrooms perceptions in Ghana. The results indicated that teachers were aware of inclusive education and also had a positive disposition towards inclusive education, but that inadequate resources were a challenge to implement inclusive education.

A study by Mamah, Deku, Darling, and Avoke (2011) indicated a positive perception towards including students with vision loss in three Ghanaian universities. Teachers' lack of knowledge about disabilities was a factor that was discussed in the study. The research suggests that in-service training, conferences, and professional development for the teachers were necessary for teachers to include students with vision loss in Ghanaian universities.

### **Purpose of the Study**

The purpose of this study was to examine teachers' perceptions of students with special education needs in the general education environment in Cameroon secondary schools. The attitudes of teachers with regard to educating students with special education needs, inclusive education, and challenges of teaching students with special education needs were investigated. Two research questions were investigated: 1) What are teachers' perceptions of students with special education needs in Cameroon secondary schools? 2) What are the challenges of teaching students with special education needs in Cameroon secondary schools?

### **Method**

#### *Participants*

The participants in this study included 130 general education teachers from five secondary schools in Buea Subdivision in the South West Province of Cameroon. The schools surveyed did not have a special education teacher on staff. Teachers were purposively selected from public-general education, denominational (Catholic, Baptist, and Presbyterian), and day-private schools in the Fako Division of the South West Province of Cameroon. Students who attend these schools pay tuition and fees. The payment in the government school is lower than the denominational and lay private schools. Eligibility criteria in the study included: a) accessibility for participant recruitment and survey, and b) proximity of the schools to each other. It was assumed that the target participants in these schools would have students with special education needs and must have come in contact with them or have them in their classes.

### **Instrumentation**

The survey instrument was adapted and modified from a previous study on university teachers' perception of inclusion of the visually impaired in Ghanaian universities (Mamah, et al., 2011). The

Likert scale format was used in the 26-item teachers' survey to ask the participants to indicate their agreement or disagreement with the statements presented to them by selecting one of the choices presented: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). In adapting the survey, the researcher took into consideration the fact that the previous survey dealt with teachers' perceptions based on a specific disability. For most of the items in this study, visual impairment was substituted with special education needs. The adapted instrument covered two factors used in the original instrument: 1) the general perception of the teachers and 2) the perception of teachers towards the concept of inclusion. A third factor was added to the present instrument: the challenges of teaching students with special needs.

### *Procedure*

The participants in this study (N = 130) were administered a 26-item survey soliciting information regarding the special education needs of students in general education environments. The survey was administered by the researcher in person. Having selected the participants for the survey, permission was granted by the delegation of education, Senior Divisional Officer (SDO), and the Catholic Education Secretary (CES). The principals of the various schools were contacted ahead of time to gain access to the schools and to build rapport. Because of the prior contact, there was a lot of cooperation from the teachers. Data was collected over a five-day period in the five secondary schools in Buea Subdivision. The 130 teachers who participated in the survey were present in the school at the time of data collection and all responded to the survey.

## **Results**

### *Demographics of Participants*

One hundred and thirty teachers were surveyed from denominational, government, lay private schools. School 1 was a Catholic school (n=21), school 2 was government (n=40), school 3 was Catholic (n=30), school 4 was Presbyterian (n=25), and school 5 was a Lay Private school (n=14).

**Table 1. Demographics of Survey Respondents**

Characteristic	N	Percent
Gender		
Male	69	53.08
Female	61	46.92
Teacher's level of education		
Bachelor's degree	88	67.70
Master's degree	16	12.31
Bachelor's degree and DIPES I & II	5	3.84
DIPES I & II	7	5.40
High school diploma	4	3.07
Ph.D.	1	0.77
Other	3	2.30
Years of teaching experience		
0-5	64	50
6-10	30	23.44
11 or more	34	26.56
Content area teaching		
Business	7	5.38
English	27	20.77
Home Economics	1	0.77
Math	9	6.92
Science	35	26.92
Social Science	45	34.62
Religion	3	2.31
Philosophy	2	1.54
Other	1	0.77
Type of School		
Denominational	3	60
Government	1	20
Lay Private	1	20

The teaching experiences for the respondents from all five schools ranged from five months to 29 years with a mean of 7.41 years. More respondents were male (n=69, 53.08%) than female (n=61, 46.92%). Out of the 130 teachers who responded to the survey, 97.70% were Cameroonians (n=127) and 2.30% were non Cameroonians (n=3). See Table 1 for teachers' level of education and complete demographic information.

### *Survey*

#### *General Perceptions of Secondary School Teachers*

The overall mean for secondary teachers' perception was 2.62 with a standard deviation of 0.47. Item 7 indicated that teachers believed that they have knowledge of students with SEN (M = 2.98) with 82% agreeing or strongly agreeing. Item 8 indicated that teachers believed that they were prepared to teach all types of students (M = 3.09) with 80% agreeing or strongly agreeing. Item 9 indicated that teachers did not take a course in special education (M= 2.00) with 76.6% of teachers disagreeing or strongly disagreeing. See table 2 for survey item information.

**Table 2. General Perceptions of Inclusion of Secondary School Teachers**

Item	Mean	SD (%)	SD (%)	D (%)	A (%)	SA (%)
7. I have knowledge about students with special education needs	2.98	0.81	7.8	10.2	58.6	23.4
8. I am prepared to teach all types of students	3.09	0.86	6.2	13.8	44.6	35.4
9. I took a course in Special Education	2.00	0.92	33.1	42.5	15.7	8.7
10. I have read about teaching students with special education needs	2.38	0.89	20.3	28.1	44.5	7.0
11. I have skills for teaching students with special education needs	2.36	0.83	15.3	40.3	37.1	7.3
12. I adapt my lessons to meet the unique need of students with special education needs	2.69	0.9	13.1	20.8	50.0	16.2

#### *Perceptions of Secondary School Teachers on the Concept of Inclusion*

The overall mean of secondary teachers' perception of the concept of inclusion was 2.75 with a standard deviation of 0.64. Item 13 indicated that 92.2% of respondents agreed or strongly agreed that it is a good to teach students with and without disabilities. Item 15 indicated that teachers believed that teaching students with special needs requires a different technique with 95.4% agreeing or strongly agreeing. Item 21 indicated that teachers believe all children with disabilities benefit from inclusive education with 78.7% agreeing or strongly agreeing. On item 17 respondents disagreed with the statement that teaching children with special education needs will cause stress and anxiety with a mean of 2.11 with 65.1% disagreeing or strongly disagreeing. See Table 3 for item information.

#### *Challenges of Teaching Students with Special Education Needs*

The mean for challenges of teaching students with special education needs was 2.43 with a standard deviation of 0.44. Item 22 indicated that 83.6% of teachers collaborate to help students with SEN. Item 23 indicated that 52.9% of respondents believe that they did not receive support from the principal to help students with special education needs. Item 24 indicated that 78.3% disagreed or strongly disagreed that there are sufficient resources to help students with special education needs. Item 25 indicated that 62% of teachers disagreed or strongly disagreed that there is a system to detect and help students with special education needs. Item 26 indicated that 51.2% of teachers agreed or strongly disagreed that the number of students in the class was too large to help students with disabilities. See Table 4 for item information.

#### *Differences between Male and Female Teachers*

An independent samples t-test (see table 5) was used to compare perceptions between male and female respondents on research question two about the challenges that teachers face teaching students with special education needs. There was a significant difference in their responses male (M = 2.57, SD = 0.55) and female (M = 2.29, SD = 0.56;  $t(128) = -2.91$ ,  $p = 0.004$ ). Results suggest that male respondents perceive that they will face more challenges working with students with special education needs. No



significant difference was found between male and female respondents on the general perceptions of inclusion ( $t(128) = -1.56, p = .122$ ) or the concept of inclusion ( $t(128) = .73, p = .466$ ).

**Table 3. Perceptions of Secondary School Teachers on the Concept of Inclusion**

Item	Mean	sd	SD (%)	D (%)	A (%)	SA (%)
13. It is good to teach students with and without Disabilities	3.36	0.72	3.1	4.7	45.7	46.5
14. Only special educators can teach students with special education needs	2.36	1.04	23.1	36.9	20.8	19.2
15. Teaching students with special education needs requires different techniques	3.40	0.58	0.0	4.7	51.2	44.2
16. Teaching students with special education needs would prevent the teaching and learning of other students that do not have special education needs	2.15	0.93	26.2	42.3	21.5	10.0
17. Teaching children with special education needs will cause stress and anxiety for me	2.11	0.86	27.9	37.2	31.0	3.9
18. Teaching children with special education needs will be too much work	2.32	0.92	20.9	36.4	32.6	10.1
19. Inclusive education is a good idea	3.15	0.78	3.2	14.3	46.8	35.7
20. Inclusive education should replace segregated Education	2.85	1.00	12.1	21.8	34.7	31.5
21. All children with disabilities can benefit from inclusive education	3.07	0.72	0.8	20.5	50.0	28.7

**Table 4. Challenges of Teaching Students with Special Education Needs**

Item	Mean	sd	SD (%)	D (%)	A (%)	SA (%)
22. Teachers collaborate to help students with special education needs	3.09	0.84	7.0	9.4	50.8	32.8
23. There is support from the principal to teach students with special education needs.	2.43	0.89	15.5	37.2	35.7	11.6
24. There are sufficient resources in the school to teach students with special education needs.	1.89	0.81	35.7	42.6	18.6	3.1
25. The school has a system to detect and help students with special education needs	2.26	0.92	22.5	39.5	27.9	10.1
26. The number of students in the classes is too large to help students with disabilities	2.50	0.01	19.4	29.5	32.6	18.6

**Table 5. Differences in Perception between Male and Female of the Challenge Teaching Students with Special Education Needs**

Group Statistics			
Item	Gender	Mean	t
General perception	Female	2.50	-1.56*
	Male	2.66	
Perception of Inclusion	Female	2.77	.731
	Male	2.72	
Challenges of working with students with SEN	Female	2.29	2.91*
	Male	2.67	

Note.\*  $p < .01$

*Differences between Years of Teaching Experience*

A one-way analysis of variance (ANOVA) was conducted to compare the differences in years of teaching experience (0-5, 6-10, 11 or more years). The comparison was between respondents' years of teaching experience and their perceptions of students with SEN (see table 6). There was a significant difference between teachers who have taught for 0-5 years and teachers who have taught for 11 years or more [(F 2, 125) = 3.68,  $p = .028$ ]. Post hoc comparison using Tukey HSD test indicate that respondents with 0-5 years teaching experience and those with 11 or more years teaching experience perceive the inclusion of students with SEN differently. No differences were found for respondents with 6-10 of teaching experience.

**Table 6. One Way ANOVA Results Showing Differences in Years of Teaching**

		Sum of sq	df	Mean sq	F
Gen. perception	Between groups	.093	2	.047	.120
	Within groups	48.247	125	.386	
	Total	48.340	127		
Perception of inclusion	Between groups	1.027	2	.514	3.677*
	Within groups	17.465	125	.140	
	Total	18.492	127		
Challenges of sped	Between groups	.249	2	.124	.375
	Within groups	41.508	125	.332	
	Total	41.757	127		

**Post Hoc Tests****Multiple Comparison**

Dependent variable	Yrs group	Yrs group	Mean Difference	Std.error	Sig
Perception of inclusion	0-5 years	6-10 years	-.11220	.08271	.367
		11+years	-.21146*	.07932	.023

Note \*  $p < 0.05$  level.

*Differences among Schools*

A one way ANOVA was conducted to compare the differences in perceptions between respondents in the five schools who were surveyed (see table 7). Differences were found in the general perceptions of teachers in schools 2 and 5 and challenges of teaching students with special education needs in schools 1 and 2. There was a significant difference between school 2 and school 5 on the general perception of students of students with SEN [(F4, 125) = 3.22,  $p = .015$ ]. Post hoc comparison using Tukey HSD test indicate that respondents in school 2 and 5 perceive students with SEN differently. There was also a significant difference between school 1 and school 2 on the challenges of teaching students with SEN [(F4, 125) = 3.55,  $p = .009$ ]. Post hoc comparison using Tukey HSD test indicates that respondents in schools 1 and 2 perceive the challenges of working with students with SEN differently.

**Discussion**

The findings of this research indicated that teachers were willing to teach students with special education needs. From responses, teachers agreed that they had knowledge about students with SEN, were prepared to teach all students, and have read about students with SEN; therefore, the teachers in this study have a positive perception of teaching students with special education needs. The results answer the first research question about the teachers' perceptions of students with SEN with the results consistent with previous research that positive attitudes and abilities affect teachers' abilities to accommodate students with special needs in their classrooms (Dupourx et al., 2006). With positive perceptions, teachers are more likely to be open to teach students with SEN.

Teachers in this study were in agreement (80%) that they were prepared to teach students with SEN. However, it was noted that 75% of the teachers in this study did not take a course in special education. Also 55.6% of the teachers indicated that they did not have skills to teach students with special education

needs. The teachers' responses show that they may be willing to teach all students but lack the skills and knowledge to teach students with SEN (Kamens, Lorete, & Slostad, 2003).

**Table 7. One Way ANOVA Results Showing Differences between Schools**

		Sum of sq	df	Mean sq	F
Gen. perception	Between groups	4.530	4	1.132	3.218*
	Within groups	43.994	125	.352	
	Total	48.523	129		
Perception of inclusion	Between groups	.942	4	.235	1.645
	Within groups	17.889	125	.143	
	Total	18.831	129		
Challenges of sped	Between groups	4.276	4	1.069	3.553**
	Within groups	37.615	125	.301	
	Total	41.891	129		

#### Post Hoc Tests Multiple Comparison

Dependent variable	schoolcode	Schoolcode	Mean Difference	Std.error	Sig
General perception of teachers	School 2	School1	-.40294	.15987	.093
		School3	-.20500	.14328	.609
		School4	-.29767	.15125	.288
		School5	-.57357*	.18422	.019
Challenges of teaching students with SEN	School 1	School2	.43744*	.14783	.030
		School3	.38619	.15608	.103
		School4	.16486	.16238	.848
		School5	.00714	.18927	1.000

Note \*\*  $p < .01$   $P < 0.05$  level.

More than half of the teachers in this study did not take a course in special education nor have the skills to teach students with special education needs. The data in this research suggest that general education teachers will need intensive training in special education in order to meet the needs of students with special education needs in their classrooms. Shade and Stewart (2001) stated that it is important to provide preservice and in-service teachers with knowledge and examples of meeting the needs and individual differences of students and adapting the lessons to meet the unique needs of students' special needs. Wotany (2012) also stated that due to inadequate training on intervention programs in the general education, the education system in Cameroon fails to provide accommodations for students with learning difficulties.

#### *Challenges of Teaching Students with Special Education Needs*

The findings to the second research question on the challenges that teachers face teaching students with SEN found that teachers agreed that collaboration exists among teachers to help students with SEN. Consistent with prior research, collaboration between general education teachers and special education teachers is a significant indicator for successful inclusion of students with disabilities (Zalizan, 2000). Collaboration between general education teachers and special education teachers could be a successful indicator for the success of students with disabilities. This present research found that there were no trained special education teachers in the five schools surveyed. General education teachers collaborated among themselves to help students with SEN.

On the issue of support from the principal, slightly more teachers (52.7%) disagreed that they have support from principal to work with students with special education needs. The specifics in this lack of support from principals are not clear from the results of the present research. This may be a topic for further research as to what type of support the teachers need from their principals and to know the type of training and qualifications that the principals are required to have in order to provide support to the

teachers. Schumm and Vaughn (1995) attest that support from administration is necessary for including students with SEN. Lack of support from the principal is a negative indication for effective inclusive practice. Scruggs and Maestropieri (1996) suggested that principal support of teachers favors positive perception of including students with SEN.

The other challenge indicated through the responses was that there was a lack of a system to identify students with special education needs. More teachers disagreed that there is a system to detect students with special education needs. The lack of a system to detect students with SEN in this study is consistent with literature. Dupoux et al. (2006) found that the lack of formal identification of students with special needs makes it difficult to determine the prevalence of disabilities, the categories of the disabilities of the students in question, and to identify appropriate interventions. The lack of adequate plans for the identification of students with special needs was also found to be a challenge in Nigeria (Garuba, 2003).

There was an overwhelming negative response (78.3%) to the question of sufficient resources for working with students with special education needs. The results of this study indicate that lack of resources is a great challenge for the teachers. This was not a surprising response; the response is consistent with literature on the problems of special education provisions in Nigeria. Obiakor and Offor (2011) noted that lack of funding, educational philosophy, and high illiteracy rate in Nigeria could be contributing factors to the problems of lack of resources for special education.

The class size was another challenge that impacted the teaching of students with special education needs. The present research shows that 51% of the teachers thought the number of students in their class was too large to help students with disabilities. The result of the present research is consistent with previous research findings that large classes impact the abilities of teachers to teach students with SEN (Ocloo & Subbeya, 2008). Also, a report on the increase in class sizes in Cameroon indicates that in an average primary classroom in Cameroon students increased from 52 in 1991 to 63 in 2000 (Weiner, 2010). An international Labor Organization study found that the maximum number in a secondary school classroom was 40 students (International Labor Organization, 1991).

There was a significant difference in the perceptions of the challenges of teaching students with special education needs between males and females. This indicates that male teachers perceive that they face more challenges working with students with special education needs. This result is consistent with research by Fakolade, Adeniyi, and Tella (2009) who found that female teachers have a more positive attitude towards including students with special education needs in a general education classroom. Cultural differences between males and females may play a role in the challenges of teaching students with SEN. This may suggest why females in this study have a positive perception of facing the challenges of working with students with special education needs.

Another difference is in the years of teaching experience. Teachers with 11 or more years of experience had significantly more positive perceptions towards including students with special education needs than teachers who had 0-5 years of teaching experience. Teachers with more teaching experience may have a better way of working with all students. The reason for the difference cannot be determined by the present research; many reasons may have contributed to the positive perception of teachers with more years of teaching experience. Consistent with previous research, the years of teaching have a positive impact on the inclusion of students with SEN in general education setting (Avramidis, Bayliss, & Burden, 2000).

There were differences between schools in two of the areas: general perceptions and challenges of teaching students with SEN. The differences were found in the different types of schools surveyed: government and Lay Private schools and government and Catholic schools; the differences may have been accounted for by the different educational philosophies of the individual proprietors and the government. The type of students who attend the government and lay private school may account for the differences. Students' tuition and fees are lower at the government school than at the lay private schools. The differences in the challenges of working with students with SEN were found between teachers in the government school and a Christian school (Catholic). These differences may be accounted for by the nature of the school and the type of students who attend Catholic and government schools. The Catholic school is a single gender boarding school of all female students while the government school is a co-educational day school. The differences between the schools may be an interesting topic for further research.

### *Recommendations for Practice*

The present research has demonstrated that teachers perceive the need for more government involvement in the education of students with special education needs in terms provision of resources and funding for the teachers. The laws and legislations are not clear about funding opportunities for schools to educate students with SEN. There is need for clarification from the government on how special education services should be funded in the schools. The lack of education and training of personnel in the field of special education is an important point that was highlighted in this research. The research demonstrates a need for school principals and government to provide teachers with training to include students with SEN in the general education environment. Training in the form of professional development for teachers can be one way to empower teachers to meet the needs of all students.

Professional development is recommended in the following areas: informal assessment of reading and writing, differentiation of instruction, response to intervention, and types of disabilities. Another recommendation is to ensure that student teachers preparing for a career in teaching take a course in special education at the university level or teacher training college. Identification of students with special education needs is highly recommended based on the present research so that teachers can identify the individual needs of each student and implement interventions.

### *Recommendations for Future Research*

Several recommendations for future research in the area of special education needs in Cameroon secondary schools can be made based on this research. There is need for more research on the type of support that principals are presently providing to the teachers in general education setting. It would be interesting to know the differences in the perception of teachers and principals towards students with special education needs in the general education environment. Another area of research may be on the effectiveness of inclusive education in secondary schools in Cameroon. It would be a good to know how effective the inclusive movement has been to the education of secondary school students with SEN. Another recommendation for further research will be research on the impact of the years of teaching experience on secondary school teachers' perception of students with SEN. Furthermore, it would be important to research teachers' knowledge of the laws, policies, and guidelines of special education and inclusive education in Cameroon. It would be interesting to know how teachers understand the laws and policies and how to apply them in their classrooms.

An observation by the researcher when administering the survey was the question on the knowledge about students with SEN. The term *slow learners* was used by respondents to refer to students with specific learning disabilities. A future research on the teachers' understanding of the concept of learning disabilities would be important for the inclusion of students with SEN in the general education setting in Cameroon.

### *Limitations*

The researcher realized that most of the teachers have limited skills in working with students with SEN. Furthermore, the research was limited to 5 schools in the South West Province of Cameroon, and therefore extra caution should be taken when generalizing the results of this study to other populations.

### **Conclusion**

The study gives a deeper understanding of secondary teachers' perceptions of students with SEN in Cameroon. Teachers have a positive perception of students with special education needs. However, the lack of support from principals, insufficient resources, and lack of skills in working with students with special education needs some consideration. This research points to the issues that impact the effectiveness of inclusive education in Cameroon. With a positive perception of students with SEN, secondary school teachers can play a significant role in educating all students in an inclusive environment if they have the resources, skills, and support that they need in their classrooms. Gender played a significant role in the results of this research; it showed that male and female teachers perceive the challenges of working with students with SEN differently.

Since most of the teachers surveyed had not taken a course in special education, it is recommended that the universities include a course in the educator and administrator preparation, and that current teachers receive professional development on strategies for serving students with SEN. In order to achieve an effective inclusive education in Cameroon, the recommendations from this research need to be taken into consideration. Awareness among teachers and school administrators on the need for more support can be

a motivating factor for the government and other stakeholders in Cameroon to consider some positive action to support students with special education needs.

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**THE EFFECT OF EMBEDDED TEXT-TO-SPEECH AND VOCABULARY EBOOK SCAFFOLDS ON THE COMPREHENSION OF STUDENTS WITH READING DISABILITIES****Dr. Michelle Gonzalez***Marywood University*

*Limited research exists concerning the effect of interactive electronic texts or eBooks on the reading comprehension of students with reading disabilities. The purpose of this study was to determine if there was a significant difference in oral retelling and comprehension performance on multiple-choice questions when 17 students with reading disabilities in third ( $n = 10$ ) and fourth ( $n = 7$ ) grade read eBooks under three different book formats. Participants read text presented in 3 formats with varying levels of built-in scaffolds including text-to-speech and vocabulary supports. Results of a Friedman's Test revealed a significant effect of the different book formats on comprehension measured by oral retelling, but not for comprehension measured by multiple-choice questions.*

The fundamental goal of reading is to efficiently decode and comprehend the printed word (Hall, Hughes, & Filbert, 2000). Most often classroom reading instruction focuses on improving students' decoding and comprehension skills. However, educators today are faced with an increasing number of students who are not successfully learning these key skills (Hall et al., 2000). Approximately, only 31% of the nation's fourth graders performed at or above proficiency levels in reading with 36% scoring at or below the basic level (National Assessment of Educational Progress [NAEP], 2005). These statistics are a concern for educators who worry that deficiencies in reading may lead to negative outcomes in adulthood. For instance, struggling readers may not be prepared to be successful adults especially in the areas of secure employment and personal autonomy (Calhoon, 2005). Also, students continuing to struggle in school and reading in the upper grades are more likely to drop out, be unemployed, have a lower income, and have poor health (National Center for Educational Statistics [NCES], 2004 2006).

One specific group of students that significantly struggle with reading difficulties are those with documented learning disabilities (Stetter & Hughes, 2010). Nearly half of students receiving special education services under the Individuals with Disability Education Act (IDEA) do so under the Learning Disability category (Wanzek, Otaiba, & Petscher, 2014). Approximately 80% of these students with a learning disability are identified as having a reading disability (Hudson, High, & Otaiba, 2007). Difficulties in the reading process may be contributed to a number of factors such as cognitive factors like errors in written spelling or syntax (Aaron, Phillips, & Larsen, 1998; Wright, Fugett, & Caputa, 2013), non-cognitive factors like poor motivation or inadequate schooling, or neurobiological factors located physically in the brain (Hudson et al., 2007). Reading difficulties have also been connected with phonological processing problems (Ritchey, 2011). No matter the cause of reading deficiencies, students who consistently struggle to read and comprehend text exhibit specific characteristics and weaknesses in the key areas of reading. For example, students with reading disabilities have problems with fluent word recognition, decoding difficulties, and difficulty in using letter/sound relationships in combination with context to identify unknown words (Chard, Ketterlin-Geller, Baker, Doabler, & Apichatabutra, 2009; Hudson, High, & Otaiba, 2007). These reading problems can lead to poor fluency, which in turn may result in poor comprehension (Pikulski & Chard, 2005; Sze, 2009) and decreased reading independence (Adams, 1990).

It would seem sensible and logical for students with reading disabilities to be provided with increased intensive reading instruction and guided reading practice to help remediate their reading deficiencies. However, in reality, students with reading disabilities often spend little time actually engaged in the task of reading (Swanson, 2008). Simply, students with reading disabilities do not practice the task of reading

enough (Hall et al., 2000) and are often being instructed by educators who lack sufficient and accurate knowledge to teach this population of struggling readers (Washburn, Joshi, & Cantrell, 2011). It is clear that more intensive and high quality instructional time is needed for students with reading disabilities, but according to Hall et al. (2000) increased instructional time is not easily accomplished because of teacher shortages, financial limitations, and time factors. Educators understand and recognize the need and importance of improving reading comprehension and achievement in students with reading disabilities especially because of mandates of the No Child Left Behind Act (NCLB) of 2001, which dictates that all students, including those with disabilities, reach grade level performance targets by 2014. One promising supplemental instructional tool that may help in addressing these limitations is computer-assisted instruction.

#### *Literature Review*

##### *Computer-Assisted Instruction*

Computer-assisted instruction is one method that educators rely on to help remediate reading deficiencies. Computer-assisted instruction is mediated learning that includes online and/or automated applications (Johnson & Johnson, 2006) that is used as a supplement for traditional teacher instruction (Lowe, 2001). In addition, computer-assisted instruction entails the use of software, the Internet, or CD-ROM on a computer to reach or help teach instructional goals (Johnson & Johnson, 2006; Lowe, 2001). Computer-assisted instruction may have the potential to promote reading skills for students at risk for reading failure (National Reading Panel, 2000) and may help decrease the achievement gap in reading (Jimenez, 2003). It may also hold promise for those students with reading disabilities because this technology can help improve and develop their reading skills (Hall et al., 2000; MacArthur, Ferretti, Okolo, & Cavalier, 2001; Zascavage & Winterman, 2009) as well as improve students' attention within the classroom (Rabiner, Murray, Skinner, & Malone, 2009). Finally, according to Hall et al. (2000), computer-assisted instruction can provide the needed extra time, guided practice, and supplemental instruction that students with reading disabilities require to be more successful in the reading process and perhaps at the same time decrease the achievement gap that exists between those without disabilities.

##### *eBooks*

One specific example of computer-assisted instruction that holds promise in remediating reading difficulties is electronic reading environments, which consist of computer-based texts and multimedia supports. Electronic reading environments are most often referred to as electronic books or eBooks. eBooks can be defined as a form of an interactive story which includes multimedia effects such as written text, music, sound effects, animations (Shamir & Korat, 2007). eBooks typically have electronic text that is presented to the reader visually. However, the delivery method of the eBook is not important (Anderson-Inman & Horney, 1997). For example, some eBooks are on a CD-ROM, imbedded into the desktop or laptop computer, retrieved from the Internet, and most recently found on handheld tablets or in applications. Also, eBooks have the look and feel of more traditional books (Anderson-Inman & Horney, 1999). This means that the eBook still maintains the feel of a traditional book by having pages and allowing the reader to add a bookmark or make notes within the eBook. An additional common feature of eBooks is multimedia effects such as animation, music, sound effects, highlighted text, dictionaries, and modeled fluent reading to enhance and aid the reading experience and process (Korat, 2006; Labbo, 2000). Many eBooks contain interactive hotspots that when activated leads to elaboration on pictures or texts and in some cases an animation of the text. eBooks that include these multimedia effects are considered supported texts (Matthew, 1997; Moody, Justice, & Cabell, 2010).

##### *Scaffolds and eBooks*

The features found in the eBooks provide scaffolds to assist in the reading process and can be linked to Vygotsky's theory of scaffolding and zone of proximal development (ZPD). The concepts of the zone of proximal development (Vygotsky, 1978) and scaffolding (Vygotsky, 1978; Wood, Bruner, & Ross, 1976) are closely interconnected being that the term scaffolding was developed from Vygotsky's (1978) work concerning the ZPD. ZPD is defined as *The distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers* (Vygotsky, 1978, p. 86). In other words, the ZPD is the difference between what a child can do without help from an adult or more capable peer and what that child can do with help from an adult. In order to provide adequate instruction in the ZPD, teachers must provide necessary supports, which Wood et al. (1976) referred to as scaffolds.



Scaffolds are defined as a support *that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts* (Wood et al., 1976, p. 90). Scaffolds are the appropriate assistance provided for students in order for them to achieve or accomplish something that normally would be too difficult for them to do independently without these supports. Environments that provide scaffolds for learning are effective because they allow novice learners to solve problems, complete tasks or accomplish goals that they normally could not do independently (Stone, 2002). Scaffolds can also be considered *one of the most recommended, versatile, and powerful instructional techniques* in education today (Clark & Graves, 2005, p. 570) allowing students to work in their ZPD.

Both the concepts of ZPD and scaffolding can be applied to the eBooks used in this study. Instead of an adult or a more capable peer providing scaffolds for a child to work in his or her ZPD, the embedded supports found in the interactive eBooks provided these scaffolds. Likewise, according to Englert, Zhao, Dunsmore, Collings, and Wolbers (2007), *technologies like eBooks can be designed to offer scaffolds that lead cognitive functions that are newly emerging, and to prompt routines and processes in a timely way just like a tutor might prompt* (p. 11). In other words, eBooks can aid and scaffold new mental processes in the same way that a teacher or tutor would. Specific features in eBooks such as text-to-speech (TSS), embedded vocabulary supports, and animated graphics serve as scaffolds for readers, which have all been utilized with practical benefits for many years (Englert, Wu, & Zhao, 2005; Larson, 2010). The embedded supports can also assist in the development of various reading skills (Pearman & Lefever-Davis, 2006; Quintana, Zhang, & Krajcik, 2005). These scaffolds can support reading, help students with reading disabilities feel confident in using technology to support their reading (Rhodes & Milby, 2007) and at the same time help them master reading tasks that they may not have been able to do on their own. Often scaffolds available in eBooks allow for students to read books that they may not have been able to read independently with the absence of the supports. These scaffolds present in eBooks allow students to work in their ZPD, which is where the most effective learning occurs (Vygotsky, 1978).

#### *Limitations of eBooks*

Yet, some researchers claim that the use of eBooks can also hinder the reading process. For instance, the multimedia enhancements (animations, sound effects, pronunciation of words, etc.) in eBooks may be distractions for some students (Lefever-Davis & Pearman, 2005; Schugar, Smith, & Schugar, 2013) and readers may focus on the extraneous features of the eBooks rather than the key points of the text. In addition, eBooks can take longer to read than traditional books (Grimshaw et al., 2007). Longer reading time may be due to the fact that eBooks limit the ability for readers to manually track text with a finger or bookmark or that readers spend increased time exploring the supports and hotspots eBooks offer. Another possible limitation to eBooks is that they may contribute to learned helplessness in some students (Lefever-Davis & Pearman, 2005). In other words, students may become dependent on the pronunciation tools embedded in the books and not try to decode the words on their own; thus, becoming passive rather than active readers.

#### *Reading Achievement and eBooks*

Research on the use of eBooks has indicated that they benefit the reading process in areas such as reading comprehension (Doty, Popplewell, & Byers, 2001; Matthew, 1997; Pearman, 2008), fluency (Oakley, 2003), reading engagement (Clyde, 2005; Labbo, 2000) and simply can make reading easier (Bus, de Jong & Verhallen, 2006; Labbo, 2006) by reducing the burden of decoding. Specifically, the impact of eBooks on student reading comprehension is a key research agenda for researchers and most studies resulted in positive outcomes. For instance, Greenlee-Moore and Smith (1994) found that electronic books with difficult text resulted in significantly higher comprehension scores, while no difference was found in text that was easier and shorter. In a second study, Matthew (1997) concluded that students' comprehension scores on a written retelling were significantly higher for those students reading eBooks than those reading traditional books. Doty et al. (2001) study results concluded that scores on comprehension questions were significantly higher for students reading eBooks in comparison to students reading traditional books. Lastly, Pearman (2008) found that reading eBooks resulted in significantly higher retelling scores. Further information and conclusions regarding the above studies as well as additional eBook studies can be found in Table 1.

Overall, positive outcomes on student comprehension were found in most studies concerning the efficacy of eBooks on student comprehension. However, after the examination of the few available studies, it is evident that gaps still exist in the research base concerning eBooks and student comprehension. This gap is especially significant in the area regarding students with reading disabilities. At the time of the

literature review, limited to no research was located concerning this population, reading comprehension, and eBooks. There is clearly a need for improved research in special education in the area of technology and reading (MacArthur et al., 2001). Specifically, research needs to be conducted using students with disabilities in reading to help educators and researchers understand how eBooks may impact their comprehension. Most of the research reviewed involved the comparison of two reading environments, one of those environments being traditional text and the other eBooks. No research was located that specifically compared the impact of different levels of support (Full TSS, vocabulary, pronunciation, etc.) found in eBooks on student comprehension. Therefore, the current study attempted to address the gaps concerning participants and book format.

**Table 1. Studies Investigating eBooks and Comprehension**

Authors	Participants	Results
Greenlee-Moore and Smith (1994)	Fourth graders ( <i>N</i> = 31)	eBooks with difficult text resulted in significantly higher comprehension question scores. No significant difference was found between formats when simple text was used.
Matthew (1997) Study 1	Third graders ( <i>N</i> = 74)	eBooks resulted in significantly higher retelling scores, but not on comprehension questions.
Matthew (1997) Study 2	Third graders ( <i>N</i> = 30)	eBooks resulted in significantly higher retelling scores.
Doty et al. (2001)	Second graders ( <i>N</i> = 39)	eBooks resulted in significantly higher scores on comprehension questions, but not on retellings.
Trushell et al. (2003)	8-9 year olds ( <i>N</i> = 36)	The <i>Read to me</i> mode resulted in better recall of event story structure.
Pearman (2008)	Second graders ( <i>N</i> = 54)	eBooks resulted in significantly higher retelling scores.

#### *Purpose*

The purpose of the study was to determine if there was a significant difference in oral retelling and comprehension performance on multiple-choice questions when students with reading disabilities in third and fourth grade read eBooks under three different book formats. Participants were exposed to all three book formats in a repeated measures study design, which helped control for the possibility of a confounding test order effect and/or testing effect. Participants did not read more than one book format in a week and were randomly assigned to each book order. The three book formats are briefly described below.

#### *Format 1 (F1):*

eBooks with an embedded text-to-speech (TSS) tool. The TTS tool reads entire text. Words are highlighted red while the tool reads the text. Reader reads text simultaneously with tool.

#### *Format 2 (F2):*

eBooks with vocabulary and pronunciation supports provided for select words. Vocabulary support consisted of definitions of key vocabulary in the text, and pronunciation supports entailed the TTS tool reading select words. Participants were required to activate all supports during this format by clicking with a mouse on these words in the text.

#### *Format 3 (F3):*

Traditional print format books with no added supports. These books were paper printed documents that consisted of paper bound between two covers.

## Method

### *Participants and Setting*

Participants were drawn from a suburban elementary school in a Mid Atlantic state. A total of 489 students in grades kindergarten through fourth grade attend this school where the demographic make-up is 4.1% Asian, 3.3% Black, 14.3% Hispanic, and 78.3% White. In the selected elementary school, there were 13 students in third grade and 10 students in fourth grade with documented reading disabilities, which resulted in a sampling pool of 23. A convenience sample was drawn from this pool and all the students who submitted consent forms were selected to participate. At the conclusion of the sampling procedures, study participants totaled 17 third ( $n = 10$ ) and fourth ( $n = 7$ ) grade students identified as having reading disabilities. Further details concerning the demographics of the study participants can be found in Table 2.

All participants had an Individualized Education Plan (IEP) and received reading instruction in either a resource center classroom or self-contained classroom from a certified special education teacher. Students in the self-contained classroom were considered to have more significant reading disabilities than those students in the resource center. Specific details regarding the extent of the participants' reading disabilities were not available to the researcher. However, in order for the participants to be labeled with a disability in reading in the selected school district a significant discrepancy was required between measured I.Q. (Wechsler Intelligence Scale for Children IV) and reading achievement scores (Woodcock Johnson Test of Achievement). All participants were reading at least one year below grade level with reading levels varying from first to third grade. A summary of participant reading level variance can be found in Table 2. The study occurred during an after school reading program.

**Table 2. Demographics of Study Participants**

Demographic	Grade 3	Grade 4	Total
Students with RD	10	7	17
Sex			
Male	6	6	12
Female	4	1	5
Ethnicity			
Asian	0	1	1
Hispanic	3	1	4
White	7	5	12
Reading Levels			
Grade 1	6	0	6
Grade 2	4	3	7
Grade 3	0	4	4

### *Materials: eBooks*

The eBooks used for this study were obtained from an Internet based website designed to supply educators with an on-line leveled library for children in grades K-6 to supplement reading curriculum. Numerous books were available across reading levels and grades, as well as across topics in nonfiction and fiction. Every book found in the on-line library can be accessed in three different formats or varying levels of support. For instance, students can read along with books using TTS tools, practice reading with only pronunciation and vocabulary supports, and/or read books with no supports. The traditional print books were obtained through a similar website. The website was selected because the characteristics of the books were similar to the eBooks in areas including reading levels, story type and organization, word counts, and illustrations. The selected books were downloaded, printed, and assembled to resemble traditional print books. Participants were assigned books based on their instructional reading levels as measured by the Developmental Reading Assessment (DRA Beaver, 2005). Participants read three books for each book format, which included two narrative texts and one expository text. Books were classified as narrative if they included the story grammar elements of setting, characters, plot, conflict, and resolution. On the other hand, books were identified as expository if they included text structures such as description, sequence, compare/contrast, cause/effect, or problem solution.

### *Instruments*

Comprehension was measured through both oral retellings and multiple-choice questions. Oral retelling can be defined as the oral post reading recalls during which children relate what they remember from reading or listening to a particular text. Oral retellings obtained from the narrative texts were scored

using Morrow's (1985) 10-Point Scale and retellings from the expository text were scored using the Expository Retelling Analysis Scale (Gonzalez, 2010). Copies of both scales can be found in the Appendix. Morrow's (1985) 10-Point Scale scores narrative retellings based on the inclusion of the following story elements: (a) characters and setting, (b) theme, (c) plot episodes, (d) resolution, and (e) sequence. Morrow (1986) determined the overall mean inter-rater reliability coefficient of the scale as 0.90, which can be interpreted as a high correlation.

Comprehension scores based on the oral retelling of expository text came from the Expository Retelling Analysis Scale. Each expository retelling was scored for the inclusion of the following elements: (a) topic-states what the story is about (b) main idea(s)-names the main ideas from the book, (c) details-names the supporting details of each main idea, (d) vocabulary-uses vocabulary from the story, and (e) accuracy-retells facts accurately. During a pilot study of this scale (Gonzalez, 2010), two raters independently scored 12 different expository retellings. An inter-rater reliability analysis using the Kappa statistic was performed to determine consistency between the two raters. The overall inter-rater reliability was determined to be  $Kappa = 0.68$  ( $p < 0.001$ ), which can be interpreted as a substantial correlation (Landis & Koch, 1977).

During the current study, two raters independently scored all the oral retellings to establish inter-rater reliability. Inter-rater reliability was determined through the Cohen's Kappa procedure and was found to be  $Kappa = 0.777$  ( $p < 0.001$ ), which can be interpreted as a substantial correlation (Landis & Koch, 1977). Lastly, the oral retelling comprehension scores for all three books under each book format were averaged to obtain a mean score, which was used in the data analysis (Friedman's Test).

Comprehension scores were also collected using multiple-choice comprehension questions. The comprehension questions utilized were obtained through the creator of both the eBooks and traditional print books. The comprehension questions included factual, vocabulary, and inferential type questions. For every question there was a choice of three to four possible answers. The number of multiple-choice questions varied by reading level and ranged from five to twelve questions. Because the total question numbers were not equal for each book, the raw scores were converted into percent correct. The percent correct scores for all three books under each book format were averaged to obtain a mean percent correct score, which was used in the data analysis (Friedman's Test).

#### *Data Collection Procedures*

##### *eBooks*

During each book format session, the participants read three books, which included two narrative books and one expository book. Both expository text and narrative text were selected because the use of both narrative and expository text is consistent with the current focus on reading demands for students in third and fourth grades. Multiple books helped to control for the differential background knowledge of the participants concerning the selected texts. The order of the books was also randomized for each participant, which helped control for factors such as reading fatigue, background knowledge, and a possible testing effect.

##### *Before Reading*

Before reading the books in each format, the title was read to and discussed with each participant. Questions were asked to prompt discussion. These questions included, *What do you think this book is about?* or *Make a prediction about what you think is going to happen in this story.* For expository books, the participants were asked, *What do you think this book is about?* and *What do you know about this topic?* When reading the eBooks, participants were shown how to turn the pages, activate vocabulary and pronunciation supports with a click of the mouse. Participants read each book independently and received no help in the reading or defining any unknown words. Participants were given the option of reading the texts silently or aloud.

##### *Post Reading*

After reading each text, the participants completed an oral retelling and answered multiple-choice questions. Before each retelling each book, participants were prompted with *Tell me about the story you just read* or *Can you tell me about the story that you just read?* If the participants read the story aloud, they were prompted with *Pretend that you are telling this story to a friend who never heard it before, what will you tell them?* The rationale for a different prompt when text was read aloud was due to the idea that they may retell less due to the fact they knew that the research assistant just heard the story (Leslie, 1993). If the participants stopped during the retelling, they were prompted with the questions,

*Can you tell me more?* or *What happened next?* No prompts were given to the participants that may have helped with content.

The comprehension questions and multiple-choice answers were all read orally to the participants. Questions and answer choices were read to participants to insure that the comprehension of the questions did not impact with the comprehension of the text. Participants pointed to their selected answer and the research assistants marked the identified answer. Questions and the multiple-choice answers were reread only if participants requested that they be reread. Questions were not rephrased to help with understanding.

#### *Research Assistants*

Multiple research assistants ( $N = 13$ ) were recruited and trained to help implement the study. Each assistant was trained in the data collection procedures prior to the start of the study and given a detailed script to follow to help standardize the interventions. A fidelity check was completed using a checklist for each research assistant in order to check the assistants' compliance to research protocol. One research session was video recorded for each research assistant and the sessions' fidelity was found to be at 96 %.

### **Results**

A Friedman's Test was conducted to evaluate differences in medians for both the oral retelling scores and the multiple-choice question scores when students with reading disabilities read text on their instructional level presented in the three different book formats. The mean comprehension score for each book format was used in the statistical analysis. Table 3 summarizes the descriptive statistics.

**Table 3. Descriptive Statistics for Comprehension Measures**

Book Format	Measure	<i>M</i>	<i>Mdn</i>	<i>SD</i>	<i>N</i>
Format 1: eBooks with full TTS narration	Oral Retell	5.210	5.270	1.418	17
	Multiple-choice	72.829	76.70	18.050	17
Format 2: eBooks with select vocabulary and TTS support	Oral Retell	4.046	4.450	1.761	17
	Multiple-choice	66.565	70.00	16.745	17
Format 3: Traditional print books with no added supports	Oral Retell	3.723	4.128	1.777	17
	Multiple-choice	68.018	66.70	14.595	17

The results of the Friedman's Test were mixed. Results indicated that the multiple-choice comprehension scores did not significantly change across book formats,  $\chi^2(2, N = 17) = 5.903, p = 0.052$ . However, results indicated that there was a significant difference in oral retelling scores across book formats,  $\chi^2(2, N = 17) = 11.412, p = 0.003$ . These results imply that the participants comprehended differently during each book format as measured through oral retellings, but they did not comprehend differently during each format as measured through multiple-choice questions.

Further statistical analysis was utilized to determine if there was any significant difference between oral retelling scores and book format. Therefore, a *post hoc* analysis with Wilcoxon signed-rank tests was conducted with a Bonferroni correction applied, resulting in a significance level set at  $p < 0.017$ . Bonferroni corrected *post hoc* tests showed that F1 oral retelling scores were significantly higher than both F2 oral retelling ( $z = -2.485, p = .013, r = -.348$ ) and F3 oral retelling ( $z = -2.911, p = .004, r = -.408$ ) and that F2 and F3 did not significantly differ ( $z = -1.207, p = .227, r = -.169$ ).

Results suggested that the participants had higher oral retelling scores when they read eBooks with full TTS narration when compared to reading eBooks with vocabulary and TTS support on select words and reading traditional print text with no supports. These results imply that the added full TTS support positively affected the reading achievement of the participants when compared to text that did not have this full support.

### **Discussion**

The purpose of the study was to determine if there was a significant difference in oral retelling and comprehension performance on multiple-choice questions when students with reading disabilities in third and fourth grade read eBooks under three different book formats. The following discussion will examine the impact of eBooks on both oral retelling and comprehension performance on multiple-choice questions. The current study results will be compared to other eBook studies previously conducted. Analyses of study results will also be conducted in order to provide a rationale for study outcomes.

*Impact of eBooks on Oral Retelling*

Study findings indicated that the full TTS narration scaffolds found in the eBooks helped the participants' comprehension when measured through oral retellings. More specifically, findings showed that eBooks with full TTS narration (F1) significantly impacted reading achievement of students with reading disabilities when compared to eBooks that only had some TTS and vocabulary support (F2) or traditional text with no support (F3). In addition, the results implied that eBooks with some TTS and vocabulary support (F2) do not enhance comprehension when compared to traditional text with no added supports (F3). Therefore, it can be concluded that the full TTS supports in the eBooks helped the participants' comprehension when measured through oral retellings. These results can support the concept that TTS tools may be considered a scaffold for those with reading disabilities allowing these individuals to more effectively work in their zones of proximal development (ZPD; Vygotsky, 1978) and perform at a higher level than without these supports.

The study results can be compared with other studies investigating the impact of eBooks on reading comprehension. For instance, these results are in agreement with earlier findings by Matthew (1997) and Pearman (2008) who both found that reading eBooks resulted in significantly higher comprehension scores when measured through retelling. In contrast, the results were inconsistent with a study conducted by Doty et al. (2001) who determined that eBooks did not result in significantly higher comprehension scores when measured through retelling. Differences between the current study and the Doty et al. study, such as study design, participant type, and data collection procedures, may all help explain these inconsistent results.

More specifically, Doty et al. (2001) implemented an experimental and control group design, in which different participants read the traditional text and the electronic text when the current study used a repeated measures design. The use of the same participants for each book format may have helped reduce the confounding variable of participant differences. A second difference was the participants used in each study. The current study used participants with reading disabilities, while Doty et al. used students without disabilities. Characteristics of each group clearly could have impacted results. A third significant difference was that participants in the Doty et al. study were allowed to ask for help and clarification if needed during reading, which was not a condition in the current study. This extra help may have had an effect on the participants' comprehension.

The current study also resulted in contradictory or surprising results. For instance, study results indicated that there was no difference in oral retelling scores when participants read eBooks with TTS and vocabulary support on select words when compared to traditional text with no added supports. This conclusion was somewhat surprising because it was expected that by providing TTS and vocabulary support on select words comprehension would be enhanced in comparison to traditional text without these supports. A possible explanation for these findings may be contributed to the careful match between text difficulty and reader ability. The study participants were reading text on their instructional level, which may have caused the text not to be difficult enough to see a possible benefit of the extra supports on comprehension. Text on a more difficult level, such as participants' frustration level, may have yielded different results.

A second possible reason for the results was that the participants did not have a choice as to what words would be read by the TTS tool or to what words would be provided with definitions. The words in the eBooks with these scaffolds were predetermined by the book creators allowing the participants not to have full control over the scaffolds needed for successful reading. During informal field observations, it was noted that many of the preselected words were known words to the participants and at times clicking onto the words seemed to slow down the reading process and proved to be a distraction. These informal observations were consistent to ones made by Lefever-Davis and Pearman (2005) who also noted that some of the features of the eBooks used in their study proved to be distractions for some students and that most of the distractions were the result of the pronunciation of words.

Additional informal field observations further revealed there were many unknown words to the participants that did not have either the vocabulary or TTS scaffolds. No logical pattern or explanation could be found as to why some words were given scaffolds and others were not in the eBooks. This characteristic of the eBooks used in the current study should warn educators and researchers to carefully examine electronic text to ensure that is a good match for the reader and contains appropriate supports. eBooks where participants have more control over the built-in scaffolds may produce different results

and assist researchers in understanding how readers use scaffolds to aid in the reading process and to enhance reading comprehension.

#### *Impact of eBooks on Multiple Choice Questions*

The study results also showed that the participants did not comprehend differently during each book format when measured through multiple-choice questions. Therefore, results indicated that the built-in scaffolds in the eBooks did not impact comprehension when measured through multiple-choice questions. Results can be compared to other studies investigating the impact of eBooks on multiple-choice questions. For instance, these results were consistent with both Matthew (1997) and Greenlee-Moore and Smith (1994) who also found electronic books did not result in significantly higher multiple-choice question scores. On the other hand, study results were inconsistent with a study conducted by Doty et al. (2001) who found eBooks had a significant impact on participants' scores on comprehension questions. However, significant differences exist between the Doty et al. study and the present study, which may account for the inconsistent results. For example, Doty et al. measured comprehension through open-ended questions rather than multiple-choice questions. Also, a control group experimental group design was utilized rather than a repeated measure design that can help control for participant differences. Unlike in the present study where readers independently read the text, participants in the Doty et al. study were allowed to ask for clarification and help during reading the text. Lastly, the study sample consisted of average readers in second grade instead of third- and fourth-grade students with reading disabilities

#### *Reading Comprehension Measures*

Furthermore, the current study finding of no significant effect of book formats on the multiple-choice question scores contradicts the positive results of the scaffolds on the oral retelling scores. A possible contribution to the conflicting results may be attributed to the selected reading comprehension measures, oral retellings and multiple-choice questions. This is supported too by research that has illustrated that comprehension is dependent on the format of the assessment (Cutting & Scarborough, 2006). Oral retellings are simply the verbal reconstruction of text and they allow the reader to restructure the text in a more holistic manner in comparison to other comprehension measures (Gambrell, Koskinen, & Kapinus, 1991) and many researchers argue that retellings are valid tools to use in assessing children's true comprehension of text (Morrow, 1993; Doty et al., 2001). On the other hand, multiple-choice questions involve different thought processes and are considered to have many flaws or weaknesses (Dillon, 2006). For instance, multiple-choice questions have an unnatural format and require a higher level of self-restraint when selecting an answer choice (Schutz et al., 2008). Often impulsivity provides the student with an easy escape from a challenging or frustrating question (Schutz et al., 2008). In other words, instead of thoughtfully considering each answer choice on a challenging question some students tend to guess at the best answer.

In addition, multiple-choice questions require readers to use different cognitive processes than retellings. During retellings readers sequentially retell the story in their own words including all essential story elements (characters, problem, events, conclusion, etc.). In multiple-choice questions, different answer choices have to be compared to select an appropriate answer, which requires higher processing demands than other comprehension measures (Cain & Oakhill, 2006). Students with reading disabilities often exhibit information-processing difficulties (Swanson & Siegle, 2001), which may limit their success on these types of questions.

Only sophisticated test takers realize that multiple-choice questions require a comparison of the answer choices (Schutz et al., 2008) and generally students with reading disabilities are not labeled as sophisticated test takers. In order for students with reading disabilities to be successful on multiple-choice questions, they require extensive practice and feedback (Schutz et al., 2008). Also, answering multiple-choice questions accurately requires a strong working memory and skills in semantics (Schutz et al., 2008). However, students with reading disabilities are deficient in the skills of working memory (Cain, 2006; Swanson & Howard, 2005) and semantics (Snowling & Hulme, 2006). Therefore, these weaknesses may correlate with poor performance on multiple-choice questions.

It is difficult to conclude that the study outcome of no effect of book format on the multiple-choice question scores was a result of the book formats or just the nature of the multiple-choice questions. Results may just be contributed to idea that the participants were poor multiple-choice test takers due to weaknesses in processing and working memory. These weaknesses too may override the possible benefits of the scaffolds found in the eBooks. The use of other comprehension measures, such as cloze

passages, open ended questions, and response logs, may provide evidence that a measured effect was not necessarily due to the nature of a specific comprehension measure and may help researchers better understand how eBooks facilitate comprehension.

#### *Recommendations for Action*

eBooks can easily be used within a classroom or school to help facilitate the comprehension of students with reading disabilities. For instance, educators can be encouraged to use eBooks as a literacy center or for independent reading time, which may increase the time spent on reading. Increased reading time may help overcome the Matthew effect (Stanovich, 1986), which states that students with reading disabilities receive less reading time than their peers. eBooks are also ideal for independent reading time because the text-to-speech (TTS) tools found in most eBooks helps students work independently and limits the need of the teacher to help decode words. In many instances, students become embarrassed if they need to constantly ask for help to read unknown words. At the same time, the TTS tools found in eBooks decrease or eliminate the need for students to focus on decoding the text, which allows them to focus on comprehending the text instead (Pearman, 2008).

Additionally, educators can use eBooks as a link with reading practice at home. Many eBooks are available on-line, as were the eBooks used in the current study. Teachers can easily assign eBooks to read for homework and not worry about an adequate number of book copies or getting books to return to school as they do with traditional text. Moreover, educators can use eBooks to scaffold books for individual students in the classroom. For instance, students can independently preview a book that will be read in their guided reading group or a book that will be read with the whole class. This may help foster students' comprehension and boost their confidence when the time comes to read a particular book with the whole class or small reading group. It may too help increase engagement and motivation to read because eBooks allow for students to have access to texts that are on their grade level.

Lastly, eBooks can possibly be used to facilitate fluency. Improved fluency can lead to improved comprehension (Daane, Campbell, Grigg, Goodman, & Oranje, 2005). This is true because more fluent readers use fewer cognitive skills to decode text, which allows for more cognitive skills to be used to comprehend the text leading to improved comprehension (Rasinski, 2012). Also, the TTS capability in eBooks allows students to hear fluent readers. Many eBooks have a setting where the entire book can be read to an individual through the TTS tool. These TTS narrators then become effective reading models for students. Students can choose to read along with the narration as well. Many eBook programs, like the one used in the current study, permit students to record their oral reading. The use of both the TTS narration and recording capabilities in eBooks allow for educators to use the strategy of repeated reading, which is simply reading a text more than once. The use of the repeated reading strategy can lead to improved comprehension (Staudt, 2009). However, further research is needed to make a direct connection between the use of eBooks and improved fluency for students with reading disabilities.

#### **Conclusion**

The purpose of the study was to determine if there was a significant difference in oral retelling and comprehension performance on multiple-choice questions when students with reading disabilities in third and fourth grade read eBooks under three different book formats. Prior to this study, researchers were interested only in the impact of eBooks on the comprehension of average readers. Limited research exists that directly investigated the effect of eBooks on the comprehension of students with reading disabilities. Therefore, results of the current study made a unique contribution to research concerning eBooks and this at-risk population.

It is difficult to conclude that findings from this study indicate that eBooks can enhance reading comprehension in students with reading disabilities mainly due to the mixed results and limitations of the study. Further investigation is recommended to extend the results. A larger sample that is randomly selected and consists of a sole grade level is evidently needed. A larger sample size would eliminate the need to use a non-parametric statistical analysis, as was the case in the current study. A parametric statistical analysis could possibly lead to more powerful results. A single grade level would eliminate the possibility that grade level influenced results. The possibility of using a single grade level and larger sample could lead to more conclusive results concerning the impact of eBook supports on the comprehension of students with reading disabilities.

One specific area of interest concerns how readers utilize the built-in scaffolds found in eBooks. It is recommended that researchers investigate how readers access these scaffolds. Researchers should



investigate whether readers access the scaffolds independently or need training and prompts, as well as if there is any correlation between the number and type of scaffolds accessed and comprehension scores. Lastly, research can be extended to average readers, English language learners, and/or students with sensory impairments. The extension of the research to other populations will possibly provide greater insight into how eBook supports impact the comprehension of other readers not just those who struggle in the reading process.

In conclusion, according to the literature the features of eBooks may have benefits for students. The features in eBooks can make reading enjoyable for students and eBooks can help decrease the decoding burden for struggling readers (Pearman & Lefever-Davis, 2006). Also, they help increase and assist comprehension in struggling readers (Izzo, Yurick, & McArrell, 2009). Additionally, eBooks can provide scaffolds or supports to help students read books that they may normally have difficulty reading without these supports (Rhodes & Milby, 2007). Scaffolds can be considered *one of the most recommended, versatile, and powerful instructional techniques* in education today (Clark & Graves, 2005, p. 570). Scaffolds such as TTS narration can reduce the load on the readers' working memory (Grimshaw et al. 2008), which has been found to be one important aspect of successful comprehension (Oakhill, Cain, & Bryant, 2003). Using eBooks in the classroom as part of the reading curriculum, a learning center, or homework extension may be beneficial to readers. eBooks have the potential to assist educators in meeting the various reading needs in a single classroom and at the same time provide supplemental reading instruction for those students most at risk for reading failure.

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### Appendix

#### Morrow's 10-Point Scale: Story Retelling Analysis

General Directions: Place a 1 next to each element if the child includes it in his or her presentation. Credit gist as well as obvious recall.

#### Characters and Setting

- A. Begins story with an introduction \_\_\_\_\_
- B. Names main character(s) \_\_\_\_\_
- C. Number of other characters named \_\_\_\_\_
- D. Actual number of other characters \_\_\_\_\_
- E. Score for other characters (C/D) \_\_\_\_\_
- F. Includes statement about time and/or place \_\_\_\_\_

#### Theme

- Refers to main character's primary goal or problem to be resolved \_\_\_\_\_

#### Plot Episodes

- A. Number of episodes recalled \_\_\_\_\_
- B. Number of episodes in story \_\_\_\_\_
- C. Score for plot episodes (A/B) \_\_\_\_\_

#### Resolution

- A. Names the problem solution/goal attainment \_\_\_\_\_
- B. Ends story \_\_\_\_\_

#### Sequence

Retells story in structural order: setting, theme, plot, episodes, resolutions.  
(Score 2 for correct order, 1 for partial, 0 for none.) \_\_\_\_\_

Highest Score Possible (10)

Child's Score \_\_\_\_\_

Comments:

**Expository Retelling Analysis: 10-Point Scale**

Directions: Place score next to each element. A scoring rubric can be found under each element.

**Topic**

States what the books is about \_\_\_\_\_

Score **0** for not included, **.5** for partial (does not specifically state, but gets the *gist* of the topic through the nature of the retelling), **1** for complete/detailed (specifically states, *The topic of the book is about* \_\_\_\_\_ or *The book is about* \_\_\_\_\_)

**Main Idea(s)**

Names the main ideas from the book \_\_\_\_\_

Score **0** for not included or not naming any, **1** for fragmentary or naming a few, **2** for partial or naming most, **3** for complete/detailed or naming all

**Details**

Names the supporting details \_\_\_\_\_

Score **0** for not included or not naming any, **1** for fragmentary or naming a few, **2** for partial or naming some, **3** for the gist or naming most, **4** for complete/detailed or naming all

**Vocabulary**

Uses vocabulary from the story \_\_\_\_\_

Score **0** for not included or uses none, **.5** for partial or uses some vocabulary words, **1** for complete/detailed or uses most key vocabulary words

**Accuracy**

Retells facts accurately \_\_\_\_\_

Only examine the facts used in the retelling. Do not score for the facts that were omitted in the retelling.

Score **0** for not included or none of the facts are accurate, **.5** for partial or most/some facts are accurate, **1** for complete/detailed or all facts are accurate

**Highest Score Possible** (10)

**Child's Score** \_\_\_\_\_

**Comments:**

**THE EFFECTS OF A SOCIAL STORY™ INTERVENTION ON THE PRO-SOCIAL BEHAVIORS OF A YOUNG ADULT WITH AUTISM SPECTRUM DISORDER**

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*The use of social stories™ with a young adult with autism spectrum disorder was examined. The young woman in the study was completing her high school education in a clinical room on a university campus in the South. The primary goal of her program was to develop and expand her functional independence. The social stories™ were effective in improving the pro-social behaviors in two areas, greeting behavior and nose-wiping behavior.*

Numerous investigations have studied improving communication and social skills of children with autism spectrum disorders (ASD). In many investigations, social stories have generated positive results (Palmen, Didden & Lang, 2011; Reichow & Sabornie, 2009; Samuel & Stansfield, 2011). These studies have demonstrated that use of social stories is an effective technique that can improve social skills for children with ASD (Samuels & Stansfield, 2011). Very few studies address social stories for young adults or those in adulthood with autism spectrum disorder.

The incidence of autism has been growing at an alarming rate, especially in the United States, Canada, and the United Kingdom (Hughes, 2011). In other countries, autism spectrum disorders are just now being charted. In the recent past, prevalence estimates from Brazil, Oman, and Western Australia have been published (Hughes, 2011). In addition, studies are being conducted in South Korea, Mexico, India, and South Africa (Hughes, 2011). Growing interest in autism on a global basis helps underscore the importance of study of intervention methodologies.

As the rate of autism increases, the importance of interventions and accessible therapy used to help decrease the effects of general impairments of ASD like temper tantrums, disorders of the sleep patterns and eating, depression, attention problems, anxieties, and assaultiveness or self-injury (Karkhaneh et al., 2010) becomes increasingly imperative. Individuals with ASD who are high functioning or have no intellectual disability encounter problems in improving their social lives (Allen, Wallace, Greene, Bowen, & Burke, 2010) and finding and sustaining employment (Allen et al., 2010). Seventy-eight percent of individuals with ASD are unemployed and are isolated from other individuals (Allen et al., 2010). Communication impairments are one of the biggest challenges for individuals with ASD (Palmen, Didden, & Lang, 2011). According to studies, body and sign language is not enough to solve the communication impairments of people with ASD (Palmen et al., 2011). Individuals with ASD who have problems with eye contact and using some communicative body and sign language (Palmen et al., 2011) show insufficiency in expressing their feelings to others in society, joining social groups, or their friends (Palmen et al., 2011).

One of the most prevalent issues for individuals with ASD who have intellectual and language problems is deficiency in social skills (Wang & Spillane, 2009). Improving social skills is a challenge for people with ASD, and development of appropriate social skills enables improved skill in the individual's social and academic life as well as living independently (Wang & Spillane, 2009).

*Social Stories™ Purpose and Use*

Social stories™ are used in order to develop social skills of individuals who have ASD. These were defined by Carol Gray, a former special education teacher (Gray, 1994). A Social Story™ describes a

situation, skill, or concept in terms of relevant social cues, perspectives, and common responses in a specifically defined style and format (Gray, 1994). The Original Social Story Book in 1993 and The New Social Story Book in 2000 were enhanced by Carol Gray (Gray, 2000). These books include numerous social stories™, their directions, and social story checklists. The direction of the social stories™ provides information to individuals on how to write a social story™ or what the components of a social story™ are, so they may write their own social stories™.

The goal of a Social Story™ is to share accurate social information with a participant in a reassuring manner that is easily understood by its audience (Gray, 1994). The social story™ allows individuals with ASD to read, understand, and reciprocate in their social lives (Gray, 1994). A social story™, which is used by individuals who have ASD, is a sort of proactive behavior intervention. It enables occurring affirmative, target social behaviors from the point of view of the individual.

A social story™ is a short story which is comprehensibly written (Crozier & Sileo, 2005). They are usually written in the first person (Wilkinson, 2010). The text of a social story™ is tangible, and it is improved via visual materials, so the text is easy to understand by children. The text and visuals should be appropriate to the child's cognitive and reading abilities (Ozdemir, 2008). Social stories™ should not be up to the student's reading level (Hanley, 2008). As the visual materials such as maps, pictures, symbols, or photos prevent losing attention and misinformation, they are typed in black and white. The language and preferred responses of the social story™ is affirmative (Ozdemir, 2008).

Social stories™ can be implemented by reading, either independently or by a caregiver, or through a multimedia system and equipment, in order to teach appropriate behavior to individuals (Karkhaneh et al., 2010). Four types of sentences which are descriptive, directive, perspective, and control may be used for social stories™ to explain abstract situations (Ozdemir, 2008). Descriptive sentences give knowledge to the child about the behavior of most people in a certain social event, and they are very useful to clarify the social events. These sentences do not provide knowledge to the child about desired behavior in the certain condition (Ozdemir, 2008). Directive sentences give information to the child on how he/she should respond and what he/she should do or try to say to a certain condition when he/she comes across the condition. Perspective sentences present points of view of other people in the given situation to the individual, so he/she can understand how others view the given situation by these sentences. Control sentences can be written by the individual. They are individually tactical, and they are used to enable the individual to implement the given information and remember it (Ozdemir, 2008). The basic social story™ is comprised of two to five descriptive, perspective, and affirmative sentences for each directive sentence. In a social story™, only one desired behavior is expected at a time, so this proportion stands (Ozdemir, 2008).

Social stories™ are used to lower an individual's anxiety, change his/her life styles, and teach academic skills and propriety. Social stories™, like other interventions, including self-management (Scattone, Tingstrom, & Wilczynski, 2006) and written scripts (Scattone et al., 2006), define the important issues concerning a given social situation in a written format. Also, social stories™ move the control of the stimulus from the teacher and peers directly to the individual with ASD, as in self-management and scripting. In addition, Social Stories™ may be considered a priming strategy (Scattone et al., 2006) because, before a social situation occurs, they prime the responses correctly (Scattone et al., 2006).

Every social story's™ purpose is to educate individuals in controlling their actions in the social situation by explaining where and when the event will occur, what will go on during the event, participants, and the reason why the individual should control his/her actions (Xin & Sutman, 2011). Self-modeling and interactive learning are very strong processes in social stories that help to improve the interaction of people with ASD (Xin & Sutman, 2011). There are several different skills in which social stories™ are used. Those are: disruptive or problematic behaviors, inappropriate social behaviors, social communication, appropriate social and play behaviors, general social skills, and on-task behavior (Reichow & Sabornie, 2009).

Social stories™ have multiple uses. Some of the different type areas of usage may be using the library, lining up, eating lunch, studying with others in groups, and playing in the playground. In addition, teachers may plan stories to be used for these behaviors positively in social conditions by the students (Crozier & Sileo, 2005). Social stories™ can be used easily, so there is no need for comprehensive instruction to implement them. Classroom teachers, many educators, paraprofessionals, and related service personal can apply social stories. If an individualized education program (IEP) team wants to use

social stories™ in the behavior plan, it is suggested that social stories are incorporated into the IEP or behavior plan with other strategies and interventions (Crozier & Sileo, 2005). They improve communication and social skills, increase greeting responses, reduce inappropriate behaviors like tantrums behaviors, decrease aggression, anxiety, and other feelings which affect children with ASD (Graetz et al., 2009).

Although social stories™ have some advantages, there are some limitations (Reichow & Sabornie, 2009). Social stories™ may be too complicated, so it can be difficult to explain significant knowledge to the student. Social stories™ are a strategy for only one expected behavior at a time. They are not used for all behavioral needs, so it may be difficult to generalize with them. They may, however, be a part of an extensive educational and behavioral plan (Crozier & Sileo, 2005).

#### *Research on Social Stories*

Hanley-Hochdorfer, Bray, Kehle, and Elinoff (2010) attempted to use social stories™ to increase pro-social behaviors of verbal initiation with children who have ASD in the natural settings. The participants of the study were three elementary school students and one middle school student who were six, eleven, nine, and twelve years old. A multiple baseline was applied across three participants for evaluating effectiveness of social stories in pro-social behaviors. Results indicated that the efficaciousness of this widely accepted social story™ intervention is questionable and in need of further research.

Wright and McCathren (2012) have researched utilizing social stories™ to increase pro-social behavior and reduce problem behavior in four young children with autism. The participants ranged from four to five years old. A multiple-baseline across participants design was used in this study. Outcomes of this research indicated that use of social stories™ was successful for increasing the pro-social behavior and decreasing the problem behaviors of the participants.

Ozdemir (2008) worked with three children who were seven, eight, and nine years old on decreasing disruptive behaviors by using multiple-baseline across participant design. The disruptive behaviors of the children were using a loud voice in class, chair tipping, and cutting in lunch line. The study findings recommended that social stories™ without additional behavioral management interventions would be more effective.

According to Graetz et al. (2009), using modified social stories™ for decreasing inappropriate behaviors of adolescents with ASD were very effective. For this study, a multiple-baseline across participants design was implemented with three participants.

Very few studies address social stories™ for young adults with autism disorders. The present study attempts to expand the knowledge of use of social stories™ with an adult by with ASD by examining the effect of social stories™ on the pro-social behaviors of a young woman with autism.

### **Method**

#### *Participant Characteristics*

The participant for this study was a 22 year-old Caucasian woman who was the first child in her family. The young woman was diagnosed as having a mild degree of ASD at three years of age by the Childhood Autism Rating Scale (CARS) and Psychoeducational Profile-Revised (PEP-R).

During the study, the participant's parent had legal guardianship of her. She was involved in a pilot program in which she was completing the high school curriculum online and participating in activities on a college campus in the South. She was receiving support from a special education teacher who worked with her on a weekly basis to assist with functional independence. The special education teacher was also a Board Certified Behavior Analyst. At the time of the study, the participant traveled three times per week to receive her educational services on the college campus with her special education teacher. The participant's mother traveled with her when she attended the program. She was chosen after approaching her mother and inquiring about the possibility of identifying areas not currently addressed in her current academically based program. After several discussions with the mother as well as her teacher, the two identified target behaviors were chosen. The mother of the young woman indicated that her daughter did not greet others when approached, and that this was a behavior that the mother wished to address. In addition, the mother suggested that her daughter did not wipe her nose when she needed to do so. Greeting and nose wiping were both identified as target behaviors. It was believed by the researchers and mother that these behaviors would both enhance the young woman's social skills.



Within the last year, the participant was evaluated using the Vineland – II, Woodcock Reading Mastery Test (WRMT), and the Receptive One-Word Picture Vocabulary Test (ROWPVT). According to the Vineland –II Adaptive Behavior Report, she had low adaptive level in communication, daily living skill, and socialization domains. In the ROWPVT, she had a severe speech production disorder and a severe receptive language delay. The participant identified 39/46 words presented by either typed or pointed to the easel and each of the 17 letters presented by pointing in the WRMT.

#### *Settings*

All baseline and intervention sessions took place in a clinical room in an academic building at the campus. The room consisted of a computer, desk, timer, and three chairs. For the second target behavior, the investigator placed a box of tissue on the desk. While the teacher sat near the participant during all sessions, the investigator sat behind the participant for observing and recording the data.

#### *Independent Variables*

The independent variable was the use of the intervention, social stories. The construct validity of social stories™ was evaluated with Social Story Guidelines by an Associate Professor in Special Education who had extensive experience in using social stories for individuals with ASD. The Social Story™ Guidelines provide information concerning how to write a social story™ for individuals who have autism disorders. It also consisted of information about what a social story™ is and which kind of sentences should be used for a social story. Copies of the social story™ were given to the participant's mother and teacher who approved the social story. The social story™ was then read by a teacher in the clinical room during the participant's regular education programming time.

#### *Dependent Variables*

The pro-social behaviors of the participant were the dependent variables in the study. Two specific behaviors, greeting behavior and nose-wiping behavior, were examined by using the social story™ intervention.

#### *Design*

An AB design was implemented without the social story™ intervention in condition A, and with the social story™ intervention in condition B for each identified pro-social behavior. A multiple baseline design was used because it is considered an effective method of evaluation for interventions. Multiple baseline designs which have baseline (condition A) and treatment data (condition B) usually assist in the evaluation of functional relationships between behavior and intervention (Hall, 2013).

The investigator met with the participant's mother and teacher to decide the target behaviors of the participant. The target behaviors were defined and approved by both the participant's mother and teacher. According to Gray's guidelines (1993), two different social stories™ for two different pro-social behaviors were written with illustrations to help understanding the texts for each target behaviors. The texts were introduced on white paper, one page in length, and the font size of the paper was 19 points using Times New Roman.

Baseline conditions ranged from four to eight sessions. The social story™ conditions ranged from four to five sessions.

#### *Procedure*

##### *Baseline*

All sessions occurred in the clinical room where the student received her special education program. During baseline, the investigator observed the participant during 15 min sessions before the participant's regular educational programming time for the first target behavior. The participant was observed 15 minutes before and during the regular education programming time for the second target behavior. The observation time was started at 10:00am for all sessions. Frequencies of target behaviors were observed, and data was collected by using performance checklists during each session. These observations were performed at least three times a week until stable rates of the target behaviors were observed. Other interventions were not used during these periods. The set of the regular education programming of the participant was not changed during the baseline session.

##### *Social Story™ Intervention*

All sessions occurred in a clinical room. When baseline data were stable, the intervention began for the first target behavior. The teacher helped the participant to read the social story™ aloud three times

during the participant's regular education programming times. When a steady state was reached for the first behavior, the second social story™ was applied to the next behavior. The teacher read the social story™ aloud three times during the sessions. Then, the teacher asked the participant how to perform the target behavior step by step according to the social story™ because the participant did not need to perform the second target behavior during the sessions.

#### *Inter-rater Reliability*

The investigator and the participant's teacher were observers for establishing inter-observer reliability. They read the definitions of target behaviors and became familiar with the data collection forms and procedures for recording observations (Wright & McCathren, 2012). The observers then practiced observing and recording data in the clinical room for each of the target behaviors of the participant. Inter-observer agreement checks were performed for at least 30% of the observation sessions to guarantee all data collection across each target behavior of the participant in each condition of the study (Wright & McCathren, 2012). At least 80% inter-rater agreement of the observations for each target behaviors of the participant in the all sessions was considered as reliable for this study. For the first target behavior, agreement in each condition ranged from 90% - 100% (M= 92%) and for the second target behavior, it ranged from 85% - 100% (M= 90%).

#### *Treatment Fidelity*

The teacher noted whether the social stories were read to the participant in an appropriate way and the defined times and asked questions on how to perform the target behavior. When the teacher completed the intervention sessions for each target behavior, the investigator noted on a checklist the treatment integrity for at least 50% of the intervention sessions (Wright & McCathren, 2012).

### **Results**

The first set of data from the multiple baseline design shows the percentage of the appropriate greeting behavior with others by the individual with ASD during the baseline and social story™ condition. The baseline was conducted in four sessions and the social story intervention was conducted in nine sessions. The participation by the young woman took approximately five to ten minutes per day, at least three days per week, over a period of one month during the baseline and social story™ intervention.

As shown in Figure 1, the social story™ intervention helped to increase the appropriate greeting behavior of the participant. The appropriate greeting behavior of the participant was increased from an average 43% during baseline to an average 80% during intervention session by applying the social story™ intervention. In addition, in the last four sessions during the intervention, the appropriate greeting behavior became stable through use of the social story.™ When approached by others, the young woman greeted them consistently after the intervention.

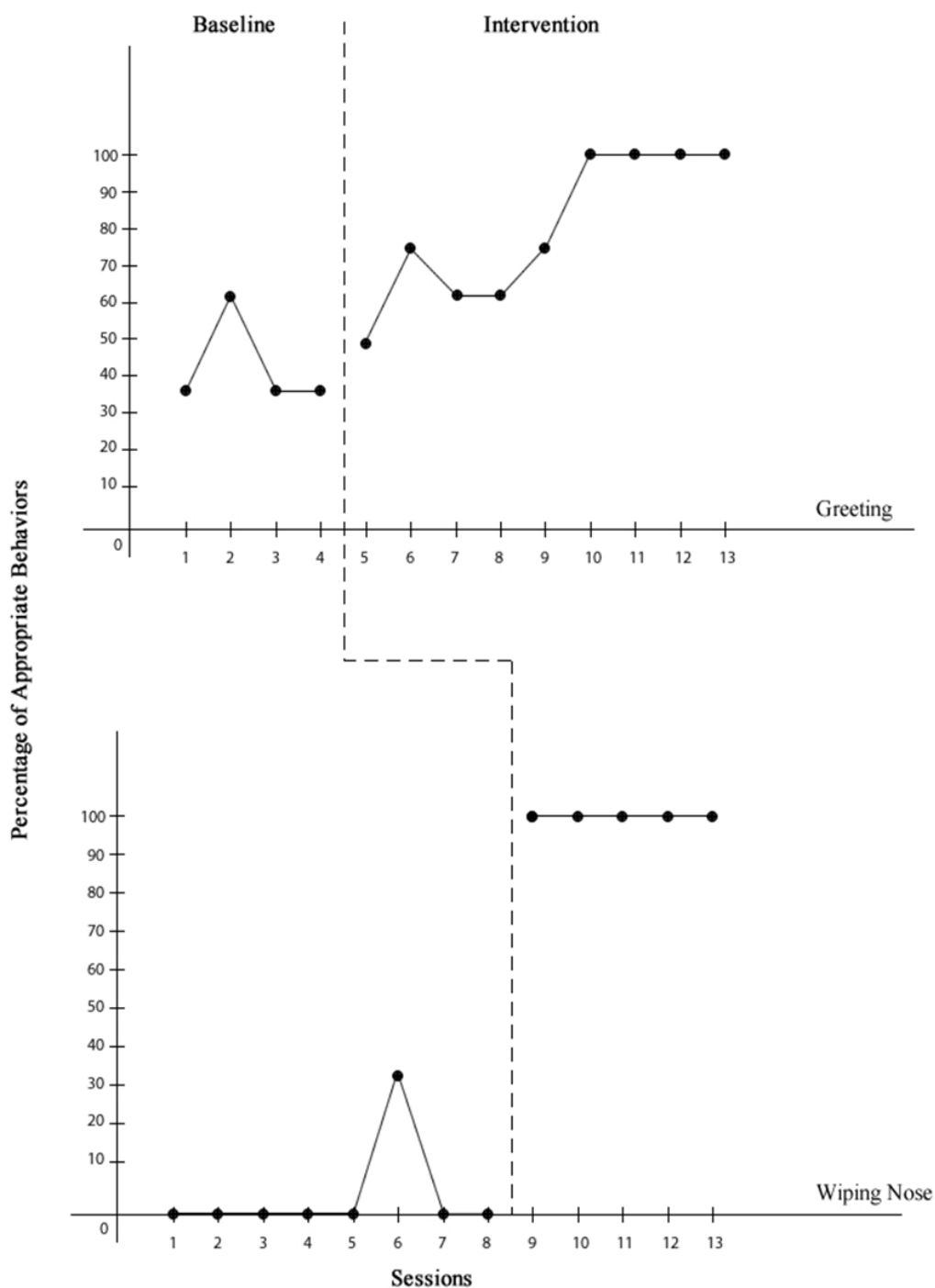
The second data set of the multiple baseline design shows the percentage of the appropriate nose wiping behavior of the individual with ASD during the baseline and social story™ condition. The baseline was conducted in eight sessions and the social story™ intervention was conducted in five sessions. The participation by the young woman took approximately five to ten minutes per day, at least three days per week, over a period of one month during the baseline and social story™ intervention.

As shown in Figure 1, data indicate that the social story™ intervention helped to increase appropriate nose-wiping behavior of the participant. During the baseline, the participant did not show any appropriate nose-wiping behavior except one day because she did not need to wipe her nose. During the intervention session, the participant demonstrated the appropriate nose-wiping behavior and answered every question correctly about how to wipe her nose. The appropriate nose-wiping behavior of the participant was increased from an average 6.25% during baseline to an average 100% during the intervention session by applying the social story™. In addition, in all five sessions during the intervention, the appropriate wiping nose behavior became stable through use of the social story™.

### **Discussion**

The social stories™ resulted in improvement of appropriate social behaviors of the young woman with ASD. The rate of appropriate social behavior was higher after the social story™ intervention than it was during the baseline condition. It is believed that the social story™ intervention was responsible for the increase in behaviors because appropriate social behavior for the participant increased after implementation of the social story™ intervention. For this reason, social story™ intervention is effective

at increasing appropriate social behaviors. In the other investigations, similar results have occurred when the social story™ interventions were used without other supports (Wright & McCathren, 2012).



**Figure 1. Percent occurrence of wiping nose and greeting behaviors per session during baseline and treatment.**

Greeting is one of the most significant behaviors that initiate social communication behaviors for individuals. The appropriate greeting behavior, which was the first target behavior in this study, is one of the core challenges in individuals with ASD. In addition, eye contact behavior during the greeting with individuals is one of the most challenging behaviors for individuals with ASD. This current study demonstrated that the social story™ intervention was very effective in increasing social skill behaviors

like greeting and eye contact of the young woman with ASD. Although most investigations have studied children with ASD for these social skill problems, this current study indicated that the social story™ intervention was effective for a young woman with ASD.

The appropriate nose-wiping behavior was not frequently seen. The participant did not need to wipe her nose during baseline conditions and the social story™ intervention, so questions were asked of the participant how to wipe her nose in an appropriate way, and her behaviors were observed step by step by her teacher and the investigator. She was very successful and demonstrated each and every step appropriately. Though the appropriate nose-wiping behavior is an important pro-social behavior, very few studies have examined this behavior for young children with ASD.

Social stories™ are a very useful intervention because they are easy to construct and implement by teachers or other specialists. There is no need of expertise to use them. In the current study, just one participant was used in a clinical room with a special education teacher, so there were no distracting objects seen by the participant during the observation and implementation of the social stories. Therefore, the social story™ intervention in the current study was believed to be effective to increase the appropriate pro-social behaviors of the participant. Social stories™ are also beneficial for single subject designs to change most challenge behaviors of individuals with ASD. The participant sometimes demonstrated some stressful and anxiety behaviors before implementation of the social story™ because she did not want to read. However, the social story™ resulted in relaxed behavior when the teacher read to her. It is believed that this relaxed state was due to the social story™ being easy to understand by the participant. In addition, the participant's mother reported positive feedback about the social stories™. Prior to the study, the young woman never asked for a tissue when she needed one. However, after implementation of the social story™, she started to ask for tissues to wipe her nose in her home. The feedback from the mother demonstrates continuing of the appropriate pro-social behaviors after intervention.

#### *Limitations*

This current study has several limitations. The results of the current study may not be generalized across individuals or settings because only one participant was used. Maintenance or a follow-up session was not used in this current study, so the investigator did not have a chance to see whether or not the appropriate behaviors continued after the social story interventions. However, informal contact with the young woman's mother and teacher resulted in positive reports that the behaviors have remained stable. For the second target behavior, wiping her nose, the investigator had to wait for a long time to observe this behavior. However, the behavior was not seen during the baseline, so the investigator had to ask questions about the target behavior. This modifying may have some effect on the results of the interventions.

#### *Recommendations for Future Research*

This current study must be replicated with more participants while addressing the limitations and taking in consideration the recommendations. Future research should evaluate maintenance and follow-up sessions after social story™ intervention. Future research should evaluate other settings such as home setting, school setting, or community settings for observation of the target behavior of the participants. Future research should use modified social stories™ paired with different interventions like video modeling. It is important that future research should use more young adults as participants with ASD with varying skills and diagnoses to generalize the results. Future research should also consider factors related to nose-wiping behavior. One such factor is the participant's need to wipe his/her nose. In the present study, collection of data was prolonged due to this factor.

This study evaluated the effects of the social story™ on the pro-social behaviors of a young adult woman. The results of this study add to the growing literature base of social stories™ in support of the use of social stories™ for some young adults.

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## THE EFFECTS OF EXPLICIT INSTRUCTION ON THE WRITING ABILITY OF A STUDENT WITH NOONAN SYNDROME

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*In this study, we sought to determine the effectiveness of a sentence creation intervention on the sentence writing ability of a young writer with Noonan Syndrome. Noonan syndrome is an autosomal dominant condition characterized by shortness in stature, with neck and ear anomalies, hypertelorism, ptosis of the eyelids, low set ears, and instances of cardiac anomalies that may impact motor skills, language, attention and memory. As a result of these characteristics, children with Noonan syndrome may have difficulty with academic tasks such as writing. Our purpose in this study was to increase the quality and structure of the student's sentences through practice with reading new words and applying those words within sentences. The intervention consisted of ten lessons that used sight words and picture prompts to help the writer create sentences that described the picture. Reassembly and copying tasks were also modeled and practiced. Two measures, sentence quality and construction, were used to document changes from baseline to post-treatment. A visual analysis of the means for holistic quality and number of words was used to compare baseline to post-treatment data for each student. In addition to this visual analysis, data were analyzed using the percentage of non-overlapping data (PND) procedure described by Scruggs, Mastropieri, and Casto (1987). Post intervention improvements in sentence quality and sentence structure were noted. Implications and recommendations for future research and practice are provided.*

### Introduction

An essential goal of a child's education is to learn to write well. While in school, writing is the principal method of documenting student knowledge and academic performance (Graham, Harris, & Hebert, 2011). Students must also write effectively enough to satisfy Federal and state-mandated accountability testing. Furthermore, college entrance examinations place a premium on the written statement a student provides in their application package. Beyond the classroom, a recently graduated adolescent will find that many jobs require basic written language ability (Writing and School Reform, 2006). Teachers must therefore ensure all students achieve some level of competence with written expression.

However, learning to write effectively can be challenging because of the complexity involved while composing. Writers must create thoughts and ideas that can be read and understood by a reader. Often the writer must be skilled enough to create a message that can stand alone, or the reader will not have an opportunity to question the writer directly about intent and meaning.

While composing, a writer must learn to manage physical processes such as letter formation when handwriting, or key stroking when using a word processor. Writers must also direct mental processes including planning what to say and revising their words to better match their ideas (Graham & Harris, 2009). An understanding of the formatting and particular requirements of the different writing genres such as persuasion and narration is also necessary. Another important task for writers is the ability to self-regulate, as such skills may help an individual maintain focus on the process of composition while also allowing them to handle frustrations (Asaro-Saddler & Bak, 2012; Asaro & Saddler, 2009; Graham, Harris, & Hebert, 2011; Harris, Graham, & Mason, 2006). Self-regulatory skills also enable writers to reflect on strategies they found helpful, and to understand and acknowledge any accomplishments

(Harris, Graham, & Mason, 2006). Without an ability to engage in self-regulatory behaviors independently, a writer could struggle to maintain attention, be unable to work through frustrations, and fail to monitor progress towards objectives (Graham & Harris, 2009). When considering all that a writer must do to create an effective message, it's understandable that many students struggle with writing and that writing can be particularly difficult for students with low achievement (Salahu-Din, Persky, & Miller, 2008).

#### *Characteristics of Writers with Disabilities*

Characteristically, children with writing disabilities engage in little or no planning prior to writing (Graham & Harris, 2009). Without an adequate plan, they then create brief compositions that are not well organized and that lack important information a reader might need to better enjoy or understand the message. Because many of these writers lack skill in revising or choose not to revise, they cannot improve their product (Graham & Harris, 2009). These writers may also find handwriting, grammar, punctuation, and spelling difficult (Graham, Harris, & Hebert, 2011). Because of these struggles writing may present, many children who have writing disabilities with less positive images of their writing and their ability as writers (Graham et al., 2011).

#### *Characteristics of Noonan Syndrome*

One particular group of learners that may struggle with writing is children with Noonan syndrome. Noonan syndrome, an autosomal dominant condition that affects approximately one in 1000-2500 children worldwide, has observable physical and cognitive manifestations (Noonan Syndrome Support Group, 2012). Physically, children with NS are characterized by shortness in stature, with neck and ear anomalies, hypertelorism, ptosis of the eyelids, low set ears, and instances of cardiac anomalies (Pierpont, Pierpont, Mendelsohn, Roberts, Tworog-Dube, & Seidenberg, 2009; Roberts, Allanson, Tartaglia, & Gelb, 2013; Wingbermuhle, Egger, van der Burgt, & Verhoeven, 2009). Cognitively, children with NS have widely varying intellectual profiles, with many having below-average intellect, and others ranging from moderate intellectual disability to superior ability (Pierpont, Tworog-Dube, & Roberts, 2013). Perhaps as many as 50% of children with NS have special educational needs (Shaw, Kalidas, Crosby, Jeffery, & Patton, 2007), similar to a student with a mild to severe learning disorder (LD; Pierpont Roberts, Tworog-Dube, Pierpont, Mendelsohn & Seidenberg, 2010).

NS can be an underlying cause of a variety of other signs and symptoms of academic and social deficits. For example, children with NS may struggle with important academic functioning. In addition, these students have communication impairments that occur more frequently in NS than in the general population (Pierpont et al., 2010). Language skills of children with NS tend to develop slowly, and severe impairments in speech and language development, most notably articulation, may be present (Wingbermuhle, Egger, van der Burgt, & Verhoeven, 2009). Students with Noonan syndrome who have impaired language skills may also be more likely to struggle in literacy achievement such as reading, writing, and spelling (Pierpont et al., 2010).

Children with NS may also experience difficulties with simple and sustained attention (Horiguchi & Takeshita, 2003; Lee, Portnoy, Hill, Gillberg, & Patton, 2005) and information processing speed (Wingbermuhle, Egger, Verhoeven, van der Burgt, & Kessels, 2012), with variable memory skills noted in working memory and memorizing (Horiguchi & Takeshita 2003; Wingbermuhle et al., 2012). In addition, many children with NS experience hearing loss (Roberts, Allanson, Tartaglia, & Gelb, 2013) and may be socially immature (Wingbermuhle et al., 2009) and social isolation and depression (Noonan Syndrome Support Group, 2012). No specific treatments for Noonan syndrome exist, nor does a *cure* exist. Instead the focus should be on controlling the disease's symptoms and complications.

#### *Noonan Syndrome and Writing Difficulty*

Writing may be particularly problematic for children with NS for several reasons: first, weak phonological memory skills may lead to difficulties with basic written language (Pierpont et al, 2010). Furthermore, specific weaknesses in spatial knowledge and planning abilities may lead to difficulty organizing academic tasks (van der Burgt et al., 1999). Spelling is also problematic, and significant difficulty with a language's grammatical structure including morphology and syntax (Wilson & Dyson, 1982) may impact written language. Difficulty in visual-motor coordination and fine motor coordination may also impact copying and handwriting tasks (Horiguchi & Takeshita, 2003).

Unfortunately, little is known about how to help children with NS to write more effectively. In fact, there are no published studies that have documented effective methods of teaching writing to children with

NS. Theoretically, because children with NS share similarities with children who have LD, we can imagine that interventions validated to work with children with LD may also work with children who have NS. However, these interventions may not work, may work to some degree, or may need adaptations/modifications. Therefore, this study is a first effort within the literature to both explore the characteristics of writers with NS and to investigate the effects of a potentially effective sentence level writing intervention.

## **Methods**

### *Participant*

Aaron (a pseudonym) was a male Caucasian second grade student within this school who had Noonan Syndrome as diagnosed by a pediatrician. Aaron was classified for special education services and support by his school district under the Other Health Impaired (OHI) category. Aaron was 7 years, 8 months old at the time of the intervention and was referred to us by his teacher because he was experiencing significant difficulties with written expression.

Physically, Aaron displayed typical characteristics associated with his condition including short stature and neck, eye, and ear anomalies. He was also diagnosed with ptosis and Attention Deficit Hyperactivity Disorder (ADHD). Cognitively he was considered by the school to be below grade level with most academic tasks. He achieved a full scale standard score of 85 on the Wechsler Preschool and Primary Scale of Intelligence, 3<sup>rd</sup> edition (WPPSI -III; Wechsler, 2002) with a processing speed and performance standard scores of 88 and 82 respectively. He had significant difficulty with short and long term memory related tasks. Aaron also displayed substantial behavioral problems such as extreme distractibility and aggression towards other children that warranted weekly counseling support.

Aaron received instruction within a 12-1-2 self-contained classroom for students with emotional and behavioral disabilities. Although there were no written expression goals on his Individualized Education Plan, writing presented significant challenges for Aaron. One of the teacher aides in Aaron's classroom was routinely assigned to work with him during writing related tasks which almost always involved drawing pictures and writing sentences to depict comprehension of a reading selection. Typically this process involved Aaron dictating ideas to the aide, who wrote the ideas on a dry erase tablet and would then prompt him to read the ideas back to her. Aaron would then copy those sentences onto paper. There was little or no spelling or handwriting practice and no other routinely used writing interventions.

Aaron's teacher described him as an emergent reader and writer who could read only a few words and could draw a detailed picture to tell a story or write a simple sentence with significant teacher support. He could write very few words from memory, but was observed to utilize a few of the sight words from the class word wall in his writing; however he could not consistently spell these words correctly. His teacher reported that his oral language ability exceeded his written language production and that he could adequately convey his thoughts and ideas orally; even his oral vocabulary, however, was very limited.

The third author administered the Test of Early Written Language - 2 (Hresko, Herron, & Peak, 1996) basic writing subtest to verify Aaron's existing skill levels in writing prior to the intervention. This test measures a writer's ability with basic conventions of writing such as directionality, letter features, punctuation, capitalization, and spelling along with linguistic and conceptual components including sentence combining, syntactic maturity, and metalinguistic knowledge. TEWL-2 results revealed an age equivalent score of 6-8 with normal curve equivalent score of 27, a percentile rank of 14, and a writing quotient of 84. Taken together, these scores suggest that Aaron was performing well below grade level with scores in the below average range according to the TEWL-2 interpretation guide.

During pre-intervention testing we observed that Aaron's verbal language skills were intact and he could respond correctly to oral prompts; however he was not willing to put his thoughts into written words and therefore scored very poorly on any item that required a written response. He could not produce a complete sentence in writing to describe a picture prompt, instead writing the same five words he said he *knew* randomly for each picture with no thought to their relation to the picture. He had tremendous difficulty with spelling and did not incorporate any punctuation elements or capital letters. He also had difficulty with letter, word, and sentence copying tasks and his handwriting was slow and labored. Finally he became distracted quite easily during testing and required constant redirection back to the task.



Based on the results of the TEWL-2 and consultation with his teacher we designed a writing intervention to address Aaron's difficulty with sentence production. Our desire was to increase the quality and structure of his sentences through practice with reading sight words and instruction in applying those words within sentences that effectively describe pictures. We believed these elements had high social importance for the student while also reflecting the concerns of the teacher. Our intervention supplemented Aaron's regular writing curriculum by providing direct instruction in these areas.

#### *Experimental Design*

Three experimental conditions were used: baseline, intervention, and post treatment, with sentence elements serving as the baseline to intervention phase change variable. The conditions were as follows:

##### *Baseline*

During baseline, Aaron completed three sentence writing probes (one per day for three days) to establish pre-intervention skill level. The instructor read scripted directions for testing administration in which Aaron was prompted to write a sentence that tells something about a picture. The teacher then said, *If you do not know how to spell a word just do the best you can, but don't let spelling slow you down.* Five minutes were allotted for Aaron to complete his sentence. When Aaron finished writing, he read the sentence to the instructor, who made notes for any unreadable text.

##### *Intervention*

The intervention began within three calendar days of the final baseline probe. Once the intervention commenced, the instructor followed the instructional lessons described in the following section. Ten teaching sessions lasting between 25 and 45 minutes occurred three times per week. The sessions were scheduled during the time when the participant would normally have been scheduled for writing instruction in the classroom. About two-thirds of the sessions took place in a separate location with few distractions. The other sessions took place in a section of the classroom physically separated from the rest of the group but within earshot. All lessons were recorded as a fidelity check (described subsequently). During the intervention no new writing concepts or instruction were applied in his classroom.

##### *Post Treatment*

In this stage, Aaron again wrote three sentences, under baseline conditions, with the first probe given within three days of the conclusion of the intervention. Aaron was given one post-test per day for three days. Maintenance and generalization probes were not collected, as the intervention finished at the end of the school year.

##### *Materials*

Black-and-white line-drawn pictures depicting activities of interest to young children (baking a giant cookie, rabbits teaching school, parachuting dogs) were used as prompts at baseline and post treatment. All prompts have been used in prior studies with similar aged students (cf. Saddler, 2006). Pictures were randomly assigned to pretest and post treatment conditions.

##### *Procedures*

The curriculum consisted of lessons that directly taught sight words and sentence composition through modeling and self-regulatory components. To address Aaron's behavioral problems, an incentive of motivating school supplies was offered each week for positive effort. In addition, the classroom teacher rewarded Aaron for a report of *job well done* with tickets from the classroom token economy after each session.

##### *Lessons 1 to 4*

Each of the first four lessons began with either the presentation or review of basic sight words from the Dolch pre-primer word list and student self-monitoring of progress. We believed that if Aaron had a better store of words he could read that he might be able to use these words in his writing. Initially ten words were written on flashcards which Aaron practiced reading orally. If he had difficulty, the instructor suggested that he use the sounds in the word to sound it out. Words were carried over from lesson to lesson until the student achieved mastery in terms of decoding fluency, meaning he could read the word correctly three times without assistance. Aaron tracked his own progress of words pronounced correctly by coloring in a graph with the number of words decoded correctly during each session. We viewed this progress monitoring as a type of self-regulatory behavior, and believed that helping Aaron

develop self-regulation might help him be more engaged and motivated throughout the sentence writing process.

Word practice was followed by the creation of a sentence from a picture prompt and the dictation of that sentence in proper grammatical form. After the word drills, the instructor reminded the participant that these words could be used to help in reading and sentence writing by saying *these are words that you will see when you read books. They are also good words to use when you write down your ideas into sentences. Practicing reading these words will help you when you read a book because you will remember what the word is without thinking about it too much. Practicing reading these words will also help when you write because you will have more words to use in your sentences.*

The instructor then modeled writing a sentence using a picture prompt and explicit self-talk about the task and the steps necessary to complete it. The instructor reminded Aaron that the words on the index cards from the first part of the lesson could be used to make sentences. Then the instructor wrote a sentence that described the picture and incorporated the target sight words. Aaron followed suit and created a sentence for the next picture with some conversation and discussion, pulling out the sight words used and pointing to them when saying the sentence. Aaron was encouraged to use at least two of the words he had been learning throughout the study in his sentences.

The instructor wrote the dictated sentence on a sentence strip. Next, the instructor cut the strip into individual words, and Aaron read the words while reassembling the sentence. Aaron then read the reassembled sentence out loud and copied it onto the page under the picture prompt for inclusion in a book of sentences he would share with his classroom teacher and keep after the study. The instructor reminded Aaron that he could use the words in sentences in his classroom by saying, *try to use these words we are learning in the sentences you write with your teacher and at home. I will ask you if you used any of the words when I see you again.*

#### *Lesson 5-10*

In these lessons the number of new words introduced was adjusted based up on the participant's frustration level, and varied from 5-10 words. Modeling was phased out and Aaron dictated his own sentences related to picture prompts with little or no instructor support. The instructor wrote the sentence and cut it into component words for the participant to reconstruct and read. The last step of the session again entailed the participant writing his sentence under the picture prompt and placing it in the book of sentences he had been creating.

#### *Treatment Fidelity*

To assess treatment fidelity each of the sessions was tape recorded. One third of the tapes were randomly selected to be reviewed by a graduate student who listened with a copy of the lesson script, checking each step off as it was completed. The tapes indicated that 90% of the steps were followed with precision, while other steps were followed but required modifications due to Aaron's behavioral tendencies.

#### *Preparation of the Samples for Scoring*

Before scoring, all writing samples were typed into Microsoft Word© by the first author, who entered the student's spelling and punctuation exactly as it was written on the paper (i.e., with word spacing and other features, such as capitalization, maintained as well). Any identifying information was removed. An independent researcher verified that all essays were entered exactly as written on the student's papers.

#### *Measures of Writing Quality and Scoring Procedures*

Two measures, sentence quality and construction, were used to document changes from baseline to post-treatment. The second author and a doctoral student in Special Education were trained to score the writing samples by the first author. During training, the first author discussed the scoring rubrics and provided sample sentences to rate. For quality, for example, raters were provided with exemplar sentences that represented anchor points for a 0, 4, and 8 point sentence. After raters independently scored each sentence, interrater reliability was established, and, if necessary, discussion of the rating ensued. Training continued until the raters obtained agreement of 80% of the training samples. Agreement within one point during training was 100%.

### *Sentence Quality*

The quality of each sentence was calculated using an 8-point holistic scale. Scores on the scale ranged from 0, representing the lowest quality of writing, to 7, representing the highest. Examiners were asked to read each paper attentively, but not laboriously, to obtain a general impression of overall sentence quality. Interrater reliability was calculated first between the two raters and then scores for each rater were averaged to arrive at the final reported scores for quality.

### *Sentence Construction Elements*

Sentence construction elements were measured using a 6-point scale created by the second author (See Figure 1). This scale considered if the sentence directly related to some aspect of the picture prompt, if the sentence was correct in terms of syntax, punctuation, capitalization, and noun-verb agreement, and if the sentence reflected a complete thought. Raters were asked to read each sentence carefully and then to assign a score for each criteria of the scale. Interrater reliability was calculated first between the two raters and then scores for each rater were averaged to arrive at the reported scores for sentence construction.

Sentence Probe: \_\_\_\_\_ Total Score: \_\_\_\_\_

	No	Yes
Sentence rubric	0	1
Is directly related to the picture?		
Syntactically correct?		
Is punctuated correctly?		
Is capitalized correctly?		
Complete sentence (not a fragment)?		
Noun-verb agreement?		

**Figure 1. Sentence construction elements rubric.**

### *Data Analysis*

A visual analysis of the means for holistic quality and number of words was used to compare baseline to post-treatment data for each student. In addition to this visual analysis, data were analyzed using the percentage of non-overlapping data (PND) procedure described by Scruggs, Mastropieri, and Casto (1987). Using this procedure, 90% of the post-treatment points exceeding extreme baseline values indicates the treatment was very effective, 70-90% indicates the treatment was effective, 50-70% indicates a questionable treatment, and less than 50% indicates the treatment was ineffective. This type of analysis has been used in single-subject research designs (cf. Asaro-Saddler & Bak, 2012) and has been validated for identifying intervention effects (Campbell, 2004).

### **Results**

Before instruction, Aaron could not write a complete sentence and had difficulty with letter, word, and sentence copying tasks (see Figure 2). He would use a very small selection of words to describe pictures even if the words had no connection to the picture. He could not accurately spell even basic grade level words and he did not incorporate any punctuation elements or capital letters in his writings. His handwriting was slow and labored. After instruction, gains were made in both sentence quality and elements.

### *Quality*

As can be seen in Figure 3 and 4, Aaron improved the overall quality of his sentences from baseline to post treatment, increasing his average from 0.17 to 3.34. PND for quality was 100%, exceeding the 90% effect-size criterion to qualify as a very effective treatment (Scruggs, Mastropieri, & Casto, 1987). Interrater agreement for quality was .67%; agreement within one point was 100%.

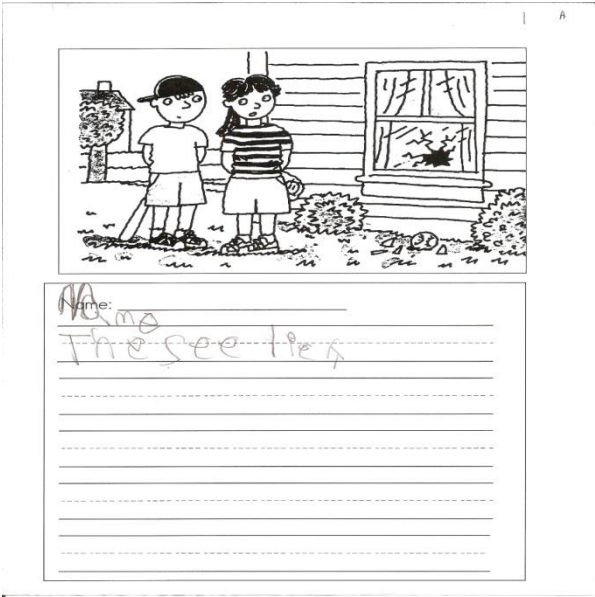


Figure 2. Baseline writing.

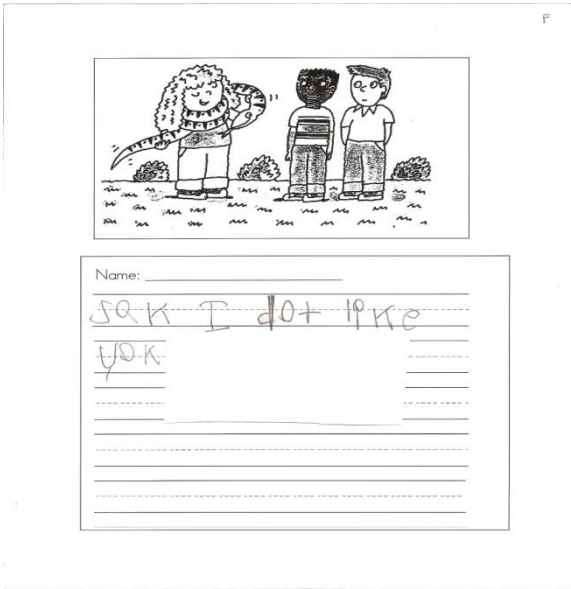


Figure 3. Post treatment writing sample.

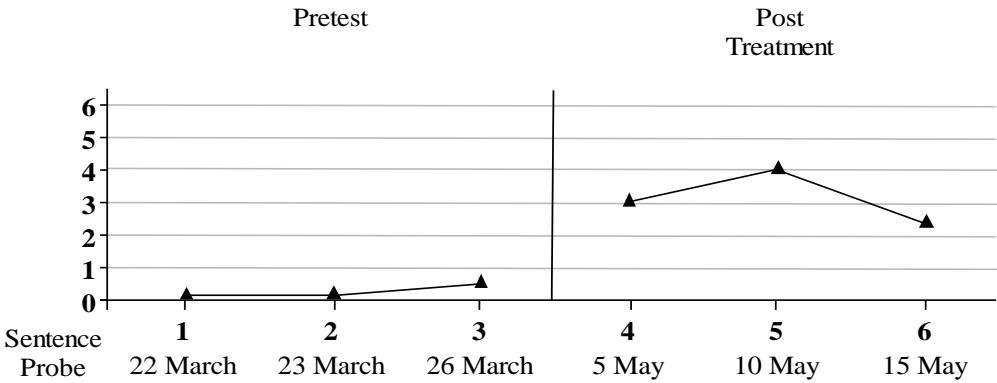
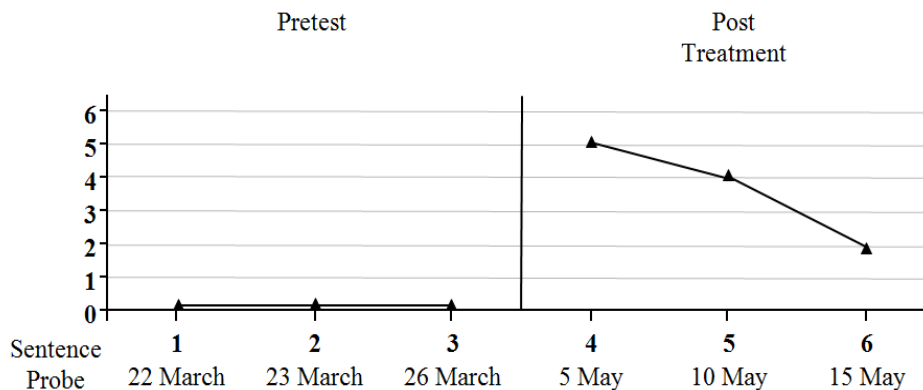


Figure 4. Sentence quality.

### Elements

As Figure 5 depicts, Aaron also improved the six elements we considered important within his sentences from baseline to post treatment. He increased his sentence construction scores from an average of 0 at baseline to 3.67 at post-test. PND for elements was 100%, also exceeding the 90% effect-size criterion to qualify as a very effective treatment. Exact interrater agreement for construction was 100%.



F

Figure 5. Sentence elements.

### Discussion

We wanted to test the effectiveness of a sentence creation intervention on the sentence writing ability of a young writer with NS who struggled with written expression. Our dependent measures (sentence quality, sentence construction elements) had high social importance and reflected the concerns of his teacher. Our participant, Aaron, possessed many of the physical and cognitive characteristics associated with NS including difficulties with simple and sustained attention and memorization. Aaron also struggled with phonological memory and spelling. He could not independently write grammatically correct sentences.

As expected, given these characteristics, our intervention improved Aaron's sentence quality and elements. The intervention helped Aaron increase his ability to write his thoughts about a picture. At baseline he did not want to put his thoughts into words and could only produce a string of fragmented words that could not be considered a sentence and that did not relate to any part of the pictures. At post treatment, however, he was able to create written representations of his ideas that were accurate sentences in terms of completeness of thought, correctness of syntax, noun-verb agreement, and that directly related to the pictures. These sentences were also rated to be of higher overall quality than his baseline sentences.

Although these results are encouraging, we hoped for even greater improvements. There are several reasons why our results were not stronger that researchers and teachers need to be mindful of when working with students who have challenging conditions such as NS. First, we underestimated the degree of Aaron's distractibility and short attention span. He would often need directions restated or assistance due to lack of focus and forgetfulness. He often needed to be *reeled back* into the session. His lack of attention became more problematic as the intervention progressed causing us to reduce the number of words practiced during the lessons. In addition, the final posttest results were directly impacted by his distractibility as the location for this test was a busy location in the school that prevented him from concentrating on the task. These symptoms, which reflect his co-morbid diagnosis of ADHD, had a pronounced impact on his writing, supporting the findings of Jacobson and Reid (2010) who found that children with ADHD have difficulty with written expression.

Second, Aaron had significant difficulty transferring words learned in isolation to his writing, despite having the words modeled in sentences by the instructor and having the instructor prompt for word usage. This was not surprising, as children with NS often have difficulty with language (Pierpont et al., 2010), and deficits in expressive language which tend to be related to difficulty in writing (Puranik & Lonigan, 2012). It should be noted, however, that Aaron understood that the new words were important

and could help him write his thoughts; unfortunately, the effect of learning fewer words, poor memory, and difficulty with transfer meant that few new words actually appeared in his writing.

Third, although self-monitoring is an important element of strategy instruction for children with disabilities (Harris, Graham, & Mason, 2006), it was not effective for Aaron and actually became a barrier to learning. When Aaron felt he did not read enough of the words correctly, he resisted completing the progress monitoring chart, and became non-compliant. He would also sometimes disagree with the instructor about his accuracy, causing a loss of instructional time. In these instances the instructor recorded his progress and moved on to the next part of the session to keep Aaron engaged and the session positive.

Finally, the short length of the intervention did not allow for enough practice. Aaron could have benefited from additional opportunities to learn more words and create sentences before post testing. Ten sessions were likely not enough time to reach higher levels of sentence writing proficiency given Aaron's low initial skill level.

#### *Implications for Practice*

This research has several important implications for teaching students with NS and writing problems. First, children such as Aaron present a complex assortment of writing deficiencies that cannot be easily or quickly remediated. It may be helpful for children such as Aaron if instruction concentrates on a limited number of writing skills at a time, as we did in this project. For example, we mainly emphasized ideation in an effort to help Aaron produce more text to describe his thoughts in writing. We did not focus on spelling and only briefly discussed capitalization and punctuation, as we believed that Aaron would become overwhelmed if we placed too many demands on him. We would suggest teachers follow a similar course.

Secondly, children such as Aaron may need to engage in a variety of writing and reading tasks to prevent disengagement. For this project we simplified the intervention to allow us to focus on what we believed would be important elements, however in the classroom, a teacher should rotate the activities we used with other engaging tasks that support practice with sight words, while promoting greater generalization to writing.

Third, children such as Aaron require dedicated time and direct assistance to improve their writing skills. It was difficult to move Aaron's skill level along with the amount of time allotted for this study even given the direct support of a skilled instructor. Allowing a child with severe writing needs to only write occasionally and with minimal support within a classroom will likely not lead to improvements. As recommended in a recent report by Graham and colleagues (2012), students need daily opportunities to engage in the writing process. A minimum of one hour per day of specific writing instruction and practice is recommended (Graham et al., 2012).

Fourth, teachers should be sensitive to progress monitoring efforts as they may not be motivating for all children. Aaron became upset and uncooperative when the progress monitoring chart did not show improvement. Teachers may need to modify or eliminate this element if children cannot emotionally handle failure.

#### *Limitations and Future Research*

In any single case design, the low number of participants is a key limitation. In this study one student with NS participated. Naturally because children with NS are diverse, the results must be generalized with caution. However, since this is the first study to explore the singular effects of a writing intervention with children with NS, it is a meaningful contribution. Future research should attempt to replicate the results with more participants of varying ability levels. Maintenance data should also be collected. In addition, reading activities should be directly incorporated to help with word acquisition and transfer, and other sentence writing practice activities such as sentence frames, sentence completion tasks, and cloze activities could be explored. Finally, because students with NS often experience difficulty with handwriting (Horiguchi & Takeshita, 2003), it may be advantageous to utilize alternate methods, such as keyboarding, to help them express their thoughts and to demonstrate their knowledge. Students who struggle with handwriting, such as Aaron, might still make gains through systematic practice; however, future research should explore if eliminating the barrier of handwriting would further improve quality of writing output for students with NS.

## Conclusion

This study is the first to explore the effects of an intervention on the sentence writing ability of a child with Noonan Syndrome. While results were modest, the study provides insights into the writing abilities of children with NS along with possible intervention ideas. Furthermore, the intervention was applied with high fidelity over a minimum amount of time and can be replicated by other teachers and researchers in typical educational contexts. Instruction that includes frequent practice and time spent writing interspersed with preferred activities and direct instruction and modeling in taking words learned in isolation and transferring them to connected text have the potential to lead to improved writing outcomes for students with Noonan syndrome. Although the evidence from our study is promising, future research is warranted to further investigate how to improve the writing of this unique and challenging population of children.

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## THE WORK OF TEACHER AIDES IN AUSTRALIA: AN ANALYSIS OF JOB ADVERTISEMENTS

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*Although teacher aides are often employed in schools to provide support for students with disabilities and special education needs, there is limited Australian research on their work and employer expectations. This article provides an analysis of advertisements for teacher aide positions, and compares the content of advertisements with role statements and teacher aide reports of their work. Employment for teacher aides is likely to be casual and short-term and qualifications are rarely required. A very wide range of criteria was identified and the most frequently mentioned criterion was generic, such as the ability to work in a team. Criteria relating to the actual work aides report they perform or to education department role statements were less frequent. Concern is expressed about the effects of generally poorly defined roles, the lack of required qualifications and the precarious nature of many positions on the education of students with special education needs.*

Teacher aides or assistants are employed in many schools to provide support to teachers and students. Many are employed specifically to support students with disabilities and/or special education needs and their teachers within special schools and units and in mainstream classes. The Australian Productivity Commission (2012) has reported that the number of teacher aides or teacher assistants employed in schools is steadily increasing. The proportion of staff in schools who are not teachers, including teacher aides, increased from 16% to 23% of the workforce in schools between 1996 and 2011 and is expected to continue to grow strongly, with 80,400 people employed as education aides (although not all these positions are in schools) in November, 2011 (Department of Education, Employment and Workplace relations [DEEWR], n.d.a). The Productivity Commission noted part of the reason for the increase in teacher aides was the increase in the numbers of students recognized as having a disability who are in regular classes. Similar increases in the proportion of staff in schools who are teacher aides have been reported in the US and the UK (French, 2003; Webster, Blatchford, Bassett, Brown, Martin, & Russell, 2011).

The job titles of teacher aides vary considerably across Australia and include integration or inclusion aides, teaching assistants and learning support officers (Howard & Ford, 2007). Although Certificate level training courses are available from Technical and Further Education (TAFE) colleges and other providers, only around 40% of those employed as education aides (across all job settings, including schools) hold a certificate level qualification and around a quarter have no post-school qualifications (DEEWR, n.d.b). The report on the review of Disability Standards for Education 2005 (DEEWR, 2012) noted *considerable variation in the skills, knowledge and qualifications of teacher's aides* (p.18) and expressed concern about whether the skills of teacher aides would allow them to meet the needs of students with disabilities.

Despite the increase in the employment of teacher aides, particularly in inclusive settings, there has been little Australian research on their roles and some criticism of the use of teacher aides to provide support to students with disabilities enrolled in regular settings (Bourke, 2009), echoing US and UK concern (Blatchford et al., 2009; Giangreco, 2010). Reservations about the desirability of increased numbers of teacher aides are supported by the lack of research that demonstrates a relationship between the employment of teacher aides and improved student outcomes (Webster, Blatchford, Bassett, Brown, Martin, & Russell, 2011; Giangreco, 2010). Not only may aides not have a positive effect, there are a

number of undesirable effects that have been reported from both the US and the UK, such as interference with teacher/student and student/student relationships (Blatchford et al., 2009; Giangreco, Broer & Suter, 2011). The lack of positive impact from the employment of teacher aides may be related to their inadequate preparation and training and related inability to deliver quality instruction, to reduced teacher/student interaction when an aide is present and to the tendency of some teachers to relinquish responsibility for the student to the aide (Giangreco, 2010; Giangreco, Suter, & Doyle, 2010). Indeed, Giangreco and Broer (2007) identified increasing use and over-reliance on teacher aides as problematic, especially when it represents a belief that this is an essential and effective way to provide support to students with disabilities.

In the Australian context, Bourke (2009) noted there is *much confusion surrounding the many and varied ways in which these teacher aides are deployed in schools to provide support* (p. 817). Howard and Ford (2007) found for their small sample of aides that none had been given a formal job description and there was ongoing uncertainty about their roles. Similarly, Snodgrass and Butcher (2005) reported the need for clearer role descriptions and definitions of responsibilities. More recently, some state education departments have provided general descriptions of roles (Australian Capital Territory Department of Education and Training [ACT DET], 2012; New South Wales Department of Education and Training [NSW DET], 2009), others have provided differentiated descriptions for aides working in various contexts (South Australian Department for Education and Child Development [SA DECD], n.d.), or at different levels (Victorian Department of Education and early Childhood Development [Vic DEECD], n.d.) while others provide both a role description and desirable attributes of applicants (Queensland Department of Education and Training [Qld DET], 2011; Western Australia Department of Education [WA DE], 2008). Only Queensland has a requirement that all aides assisting students with special needs have suitable training (Qld DET, 2011). The ACT DET noted that a nursing or first aid qualification may be an advantage and in Victoria, aides in positions that involve providing medical intervention support must have specialized training in relevant tasks. Generally there is little explicit specification of the skills and knowledge required in these descriptions provided by education departments.

An additional potential source of information about the roles and responsibilities, and desirable attributes of teacher aides is job advertisements for teacher aide positions. Although many positions are casual, and may not be filled through formal advertisement (Butt & Lowe, 2012; Howard & Ford, 2007), examination and analysis of positions that are advertised would provide some insights into the expectations of those employed in such roles. Accordingly, the aim of this paper is to report on the nature of the roles and desirable attributes of teacher aides in Australian schools through an analysis of job advertisements for teacher aide positions related to the education of students with disabilities and special needs.

## Method

Websites in Australia that carried advertisements for special education positions including teachers, teacher assistants, support teacher and administration positions were located through a Google search. This paper reports on the data relating to advertisements for positions for teacher assistants (teacher aides, learning support officers). The data relating to teachers and administrative positions are reported in Author and Author (in press). Positions in schools, preschools and long day care were of interest. Altogether, 54 sites were located and searched (a complete list of the sites may be obtained from the authors). The search located sites belonging to all state and territory government education departments, Catholic education authorities, and the Association of Independent schools as well as commercial sites that listed teaching, education, preschool and/or childcare jobs, suggesting it provided broad coverage of the relevant education systems. All relevant advertisements for positions from all websites were downloaded at three different times: November 2009, January 2010, and February 2010 to provide a snapshot of the jobs advertised over this three-month period.

After downloading, duplicate advertisements were removed and the contents of each advertisement were entered into a Filemaker Pro database designed for this project. The title of the position as it appeared in the advertisement was used as the job title. The geographical location of the position was coded as the relevant Australian state or territory. School sectors were coded as state or territory government, independent, Catholic systemic, private preschool, government preschool or long day care. The level of schooling was coded as preschool, day care center, primary, secondary, or kindergarten to year 12.

The location of the position was coded as regular class (where the aide would work in one typical class), support class (a special class enrolling students with disabilities and/or special education needs), special

school (a school enrolling only students with disabilities), tutorial or support center (a center or class within a school or region that provides support and where students may attend on a part-time basis), early intervention, a position that provided support across classes within a school or a position that provided support across schools or unspecified. The terms of employment were coded as full-time, or part-time, and then casual or permanent or unspecified. Contract types were classified as permanent or fixed term or unspecified.

For the essential criteria relevant to teacher aide positions we coded experience in special education and the nature of any special education qualification, including Technical and Further Education (TAFE) post-school qualifications that were required. We also collected other criteria relevant to special education that specified skills or knowledge related to special education, but not a specific qualification, and further criteria that were not specific to special education. Qualifications had to be described as a formal education qualification, thus a statement such as *knowledge of* would not be considered a qualification. Criteria were coded as *essential* if the wording included terms such as *must have*, *will need to*, *be required to*, or *prerequisite* in relation to any job requirements. Criteria coming under headings such as *who may apply*, *essential* or *required* were regarded as essential. A similar set of codes was used for desirable criteria and for criteria that were not specified as essential or desirable. Desirable criteria were those that were described by terms such as *should*, *would be an advantage* or *ideally* or were listed under the heading *desirable*. Unspecified criteria were those where no indication of desirability was given and included terms such as *applications are invited from* or *we seek*.

The coding for one third of the positions across the entire sample (teachers and teacher assistant positions) was completed by two independent coders to allow calculation of inter-rater reliability. Inter-rater reliability was calculated using the formula agreements divided by agreements plus disagreements and multiplying by 100. The reliability was 84.5%.

For the teacher aide positions, criteria not related to specific special education qualifications or experience were analyzed further. As well as being classified as essential, desirable or not specified, additional criteria were classified by the first author into broad categories according to the nature of the criteria. For example, all criteria that referred to ability to co-operate with others, collaborate or to work as part of a team were classified as *work co-operatively/collaboratively with others, part of team*. This classification of criteria was independently checked for 20% of the advertisements by the second author and inter-rater occurrence reliability was 91.3%.

## Results

A total of 78 advertisements for teacher aide positions were located. Several advertisements were recruiting for more than one position, thus the data refer to advertisements rather than to specific positions. Twenty-eight different terms were used to describe these positions including: education assistant – special needs, education support officer, integration aide, integration/learning support aide, learning assistant, learning support assistant, learning support teachers' aide, learning support officer, school support officer – special education, special needs assistant, special needs support officer, special needs teacher assistant, student learning assistant, teacher assistant – special needs, teacher's aide, and teacher aide-integration. Table 1 provides the distribution of advertisements by state and sector. There were no positions advertised in long day care, and only three in preschools. There were no positions advertised in the smallest state, Tasmania. Most positions were in Catholic systemic schools and there were more positions advertised in Victoria than in any other state.

**Table 1. Geographical and Sector Location of Special Education Teacher Aide Job Advertisements**

	NSW	Qld	Vic	SA	WA	NT	ACT	Total
State/Territory	1	3	17	0	3	1	6	31
Government School								
Independent School	1	3	4	1	3	0	0	12
Catholic Systemic	14	0	8	2	7	0	1	32
Preschool (private)	0	1	0	0	1	0	0	2
Preschool	0	0	0	0	1	0	0	1
Government/Territory								
Total	16	7	29	3	15	1	7	78

As shown in Table 2, most positions were in primary schools. Practically all the job advertisements were for the provision of support across classes within a school, with no positions specifically in support classes or a single regular class as shown in Table 3. Most positions were part-time for a fixed term as shown in Tables 4 and 5. There were only five permanent positions offered.

Experience in special education was an essential criterion for one position in Queensland, desirable for eight positions (NSW, Victoria and WA) and not specified as essential or desirable for three positions (NSW and WA). A qualification in special education was essential for four positions, one unspecified qualification was required in WA and three positions (Queensland and WA) required a TAFE qualification. An unspecified qualification was desirable for seven positions (Queensland, Victoria, and WA) and TAFE certificate was desirable for nine positions (NSW, WA, and ACT). One position (SA) listed a TAFE certificate without specifying if it was essential or desirable. All except one of the Victorian state school advertisements and one Victorian Independent school (17) listed Aptitude, experience and/or qualifications to fulfill requirements as an essential criterion, and one other advertisement required relevant experience and/or qualifications. Three advertisements listed relevant experience as desirable. Three listed competency or appropriate experience/qualifications as unspecified criteria.

**Table 2. Special Education Teacher Aide Job Advertisements at Each Level of Education Setting in Each State**

	NSW	Qld	Vic	SA	WA	NT	ACT	Total
Preschool	0	1	0	0	1	0	0	2
Day care center	0	0	0	0	1	0	0	1
Primary	9	1	17	2	5	0	2	36
Secondary	7	3	7	0	6	1	3	27
K-12	0	2	3	1	2	0	0	8
Unspecified	0	0	1	0	0	0	0	1
Other	0	0	1	0	0	0	2	3

**Table 3. Location of Teacher Aide Positions in Advertisements in Each State**

	NSW	Qld	Vic	SA	WA	NT	ACT	Total
Special school	2	1	2	10	0	0	2	7
Early intervention	0	1	0	0	1	0	0	2
Provide support across classes within a school	14	5	27	3	12	1	5	67
Other	3	0	0	0	2	0	1	2

**Table 4. Terms of Employment in Teacher Aide Job Advertisements**

	NSW	Qld	Vic	SA	WA	NT	ACT	Total
Full-time	2	0	5	0	4	1	0	12
Part-time	13	6	23	3	8	0	1	54
Casual	1	0	0	0	1	0	0	2
Unspecified	0	1	0	0	1	0	6	8
Other	0	0	1	0	1	0	0	2

**Table 5. Contract Type in Teacher Assistant Job Advertisements**

	NSW	Qld	Vic	SA	WA	NT	ACT	Total
Permanent	1	2	0	0	1	1	0	5
Fixed-term	11	1	21	3	6	0	1	54
Unspecified	4	4	7	0	7	0	6	28
Other	0	0	1	0	1	0	0	2

All except 12 advertisements included more specific special education related and general criteria that were essential, desirable or were not specified as essential or desirable. The criteria were grouped, and those that appeared in 10% or more (8) advertisements are summarized in Table 6. The most frequently used criteria were to do with the ability to work co-operatively or as part of a team and to have good communication skills.

**Table 6. Other Essential, Desirable or Not Specified Criteria Included in at Least 10% of Teacher Aide Job Advertisements**

Groups of Criteria	Essential	Desirable	Not specified	Total (%)
Work co-operatively/collaboratively with others, part of team	17		29	46 (59%)
Effective communication skills	11	1	25	37 (47.4%)
Proficiency in using software, technical equipment or computers	8		13	21 (26.9%)
Able to provide support and/or attendant care to students (student and nature of support or care not specified)	6		14	20 (25.6%)
Support ethos/mission of school or system	12		5	17 (21.8%)
Good organizational/time management skills	7		10	17 (21.8%)
Ability to work or problem solve independently, show initiative	5		10	15 (19.2%)
Commit to professional learning, development	2		10	12 (15.4%)
Have a first aid qualification or willingness to train	3	8		11 (14.1%)
Able to carry out routine support tasks across a range of functions/environments (not specified as supporting teachers or students)	2		9	11 (14.1%)
Able to assist or support teachers/therapists in implementing programs, making resources and/or aids	4		5	9 (11.5%)
Knowledge/awareness of educational and/or social needs of students with disabilities or special education needs	1		8	9 (11.5%)
Ability to work with disabled children/wide range of disabilities/needs			8	8 (10.3%)

There were 10 advertisements that contained criteria specific to particular groups of students and asked for knowledge of/experience with/ability to work with/interest in students with high support needs (one advertisement, essential), students who are non-verbal or who have limited communication skills (one advertisement, essential), students with health and physical disabilities (two advertisements, essential), students with autism spectrum disorders (five advertisements, desirable) students with learning difficulties (two advertisements, one desirable, one not specified), students with language and social difficulties (one advertisement, desirable) students with intellectual and physical disabilities (one advertisement, desirable), students with severe language disorder (one advertisement, not specified) and students from a refugee or non-English-speaking background (one advertisement, desirable).

Content area skills were only mentioned in five advertisements and all these related to literacy and/or numeracy. Occupational health and safety knowledge was mentioned in seven advertisements (all except one from the ACT), and similarly six advertisements from the ACT asked for a knowledge of issues and policies related to students with disabilities. Behavior management was not mentioned in any advertisements, but six advertisements asked for the ability to interact positively or constructively or engage with students and three advertisements asked for the ability to manage small groups.

Some quite specific skills were included in a few advertisements such as experience using and interpreting Makaton signing and knowledge of Japanese braille. As well as objective criteria there were a few advertisements that mentioned personal attributes such as being kind, passionate, empathetic, having an eye for detail, having a high tolerance level, and having a caring nature.

### Discussion

It is difficult to know how representative this sample of advertisements is of the available positions for teacher aides given that some positions may not be formally advertised. According to Australian Bureau of Statistics (ABS) figures (ABS, 2012) in 2011, 33% of schools were in NSW, 24% in Victoria, 18% in Queensland, 19% in SA and WA combined and 6% in Tasmania, Northern Territory (NT) and ACT combined. The proportions of advertisements in this study are 20.5% from NSW, 37.2% from Victoria, 8.9% from Queensland, 23.1% from SA and WA combined and 10.3% from ACT and NT combined (there were no positions advertised in Tasmania). Victoria is thus overrepresented in this sample and NSW is under-represented. Approximately 70% of the schools in Australia are government schools (ACARA, 2011), but only 41% of these advertisements were for positions in state schools, while 41% were from Catholic systemic schools and 18% from Independent schools. Thus the distribution of advertisements does not match geographical or system distribution. Similarly, only 16% of students with an identified disability are in Catholic schools and 6% in Independent schools (DEEWR, 2011), so Catholic and Independent schools are over-represented in terms of the numbers of students with disability enrolled. The largest single group of advertisements was from Victorian government schools.

The majority of the advertised positions were to support students with a disability within a regular school (67 out of 78 advertisements). The typical position was part-time for a fixed term or of unspecified nature, with only five advertisements for full-time positions. Howard and Ford (2007) similarly reported that 11 of the 14 aides they interviewed were casual and part-time, and Snodgrass and Butcher (2005) reported that 38 of their 94 aides were working full-time, with half of those working full time employed in special schools. Butt and Lowe (2012) reported that four of the seven aides they worked with (all from the same primary school in the ACT) were casual, but all were working full-time. Thus, it would seem that in this sample of teacher aide positions, teacher aides employed to support students in regular schools are commonly employed on a casual or fixed-term basis. Such precarious terms of employment seemed to be somewhat inconsistent with the pivotal support role to which teacher aides appear to be assigned within regular classes in the education systems.

Neither qualifications nor experience were requested in the majority of advertisements, and there was a strong focus on much more generic capacities such as the capacity to work collaboratively as part of a team (in 59% of the advertisements), to have good communication skills (47.4%) and to be competent with technology (26.9%). It is not surprising that so few advertisements requested qualifications, as given there is no requirement for teachers in special education or support positions to hold appropriate qualifications (Author & Author, in press), it would be unrealistic to expect teacher aides to hold a qualification. It is nevertheless of concern that those who might take a major role in supporting students with disabilities are untrained in that role.

There were only 10 advertisements that appeared to focus on working with students with a particular disability and only five advertisements mentioned specific curriculum content (all literacy/numeracy). Eight advertisements asked for a general ability to work with students with disabilities. Very few of the advertisements included anything related to capacity to instruct students except in the most general terms of *providing support* or *assisting* in program implementation. This lack of specificity about the job requirements may reflect the uncertainty of schools about exactly what they wish a teacher aide to achieve, and possibly a lack of a conceptually coherent approach to the education of students with disabilities. It might also reflect an intention on the part of the employer to provide more specific training once a suitable person is employed, but given the generally reported breadth of the roles of teacher aides and lack of specific job specifications this may be less likely (Butt & Lowe, 2012; Howard & Ford, 2007; Snodgrass & Butcher, 2005). Giangreco et al. (2010) noted that defining the roles for teacher aides *Persists as an elusive and unresolved issue in the field* (p. 52). The huge range of criteria included in the job advertisements, with a consensus on only the most general of skills, suggests the Australian experience aligns with this observation. The very few advertisements with extremely specific criteria (for example, knowledge of Japanese Braille) were in the minority, but do indicate a clear and specific role for the person to be employed.

It is possible to make some comparisons between the skills and knowledge requested in job advertisements and the actual work of teacher aides and their perceptions of important skills as reported by Australian aides (Butt & Lowe, 2012; Howard & Ford, 2007; Snodgrass & Butcher, 2005). Snodgrass and Butcher who ran focus groups with 94 aides from all sectors in SA reported that their sample identified strong interpersonal and communication skills as particularly important, and also personal attributes such as being resourceful, patient, flexible, and calm. The 14 aides from secondary schools interviewed in the Howard and Ford study also believed being able to work in a team, patience and flexibility were important, and the seven aides in Butt and Lowe saw *people skills* as essential along with related personal qualities such as being patient and calm. There is thus agreement that these skills, which were most prominent in the advertisements, are important for teacher aides to possess. In contrast, none of the aides in these studies mentioned the use of technology or supporting the ethos of their school, both areas that were featured in a proportion of the advertisements.

Snodgrass and Butcher (2005) reported that the majority of tasks their sample reported completing were related to individual learning and curriculum support, and for those in specialist settings providing personal care was an important role. Implementation of programs provided by other professionals (such as therapists) as well as those provided by teachers was also important. Many of this sample reported being responsible for program or task modifications, and support was provided to both individuals and small groups. Similarly, Howard and Ford (2007) reported the provision of instructional support to individuals and small groups and adapting materials were important roles. Butt and Lowe (2012) made the same finding, but noted that teachers viewed these tasks differently and saw the aides' role more as one of supporting the teacher, rather than the student. Snodgrass and Butcher noted that attendance at meetings, such as individual planning meetings, along with provision of reports to teachers on students' progress was an additional part of the role. Most of these roles were included in at least 10% of the advertisement, but do not feature as strongly as might be expected given they appear to form the bulk of the work of teacher aides.

Behavior management, an area not addressed directly in any of the advertisements, was reported as a responsibility by just over half the sample in Howard and Ford (2007) and was an element in the role of supporting the teacher in Snodgrass and Butcher (2005), and these aides stated that they needed behavior management skills. The Butt and Lowe (2012) sample, however, did not see behavior management as an essential part of their work but did think behavior management skills were essential and wanted more training in this area.

Further comparisons can be made between the criteria included in advertisements and the descriptions of teacher aide roles and competencies provided by state and territory education departments from which the advertisements were drawn, with the caution that only 31% of advertisements were for positions in the government sector. Criteria that were frequently included in advertisements were not present in all state role description. Only two states (Queensland and WA) specified the ability to work collaboratively (Queensland DET, 2011; WA DE, 2008) and three states (Queensland, Victoria and WA) specified effective communication skills (Victorian DECD, n.d.). Three states required proficiency with technical equipment (NSW, Queensland and WA) (NSW DET, 2009). More general capacities to provide support and/or attendant care and ability to assist or support teachers or therapists in implementing programs were part of the roles described by all states, but were only included in a quarter and 11.5% of the advertisements respectively. Although some of the more specific criteria in small numbers of advertisements may also relate to state education department criteria, the suggestion is of a mismatch between these role descriptions and advertisements.

Overall then, this sample of advertisements provides an illustration of the varied perceptions of the roles of teacher aides within Australian school systems and sectors. Very few criteria were commonly included in position advertisements, and those that were tended to be generic and not particularly related to the education of students with disabilities. When the attributes of teacher aides as described in the advertisements were compared to the work reported to be carried out by teacher aides in Australia, the advertisements did not seem to emphasize skills related to instruction of students which aides reported was a major part of their role. There was agreement that generic skills such as working co-operatively with others and communicating effectively were important. Similarly, there was not a good match between the criteria in the advertisements and the role descriptions provided by state and territory governments.

While data are surprisingly limited in Australia, overseas research (see, for example, Giangreco, 2010) has suggested that teacher aides have often been assigned extensive (and inappropriate) responsibilities in the support of children with special needs in regular classes, often without adequate special education teacher support. Research from the UK similarly found that teacher aides are given responsibility for intervention support and spend over half their time in an instructional role, providing support to students with difficulties, who then miss out on interaction with teachers. This work has also demonstrated that teacher aide support is associated with poorer outcomes for the students they assist (Webster et al., 2011). If this is also the case in Australia, the precarious nature of employment of these staff, frequent absence of any specific training requirements and diverse and generic criteria for positions, should be of considerable concern to administrators, teaching staff and parents. While certainly not a substitute for qualified and skilled special education support teachers, a clearer focus on the roles of aides, skills and required qualifications, may well enhance the quality of support of children with special learning needs in schools.

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