

JAASEP

JOURNAL OF THE
AMERICAN ACADEMY *of*
SPECIAL EDUCATION
PROFESSIONALS



FALL 2014

Intentionally Left Blank



**JOURNAL of the
AMERICAN ACADEMY
of
SPECIAL EDUCATION PROFESSIONALS
(JAASEP)**

Fall, 2014

Table of Contents

JAASEP Editorial Board of Reviewers

Speech-Language Services in Public Schools: How Policy Ambiguity Regarding Eligibility Criteria Impacts Speech-Language Pathologists in a Litigious and Resource Constrained Environment
Lesley Sylvan

Are Parents Really Partners In Their Child's Education?
Clarissa E. Rosas and Kathleen G. Winterman

Vocational Rehabilitation Counselors' Perceived Influences on the Secondary Transition Planning Process and Postsecondary Outcomes of Students with Disabilities
Vickie Miller-Warren, Ed.D.

Gender Differences in Emotional or Behavioral Problems in Elementary School Students
Amanda Malfitano

African American Parental Beliefs About Resiliency: A Delphi Study
Vita Jones, Kyle Higgins, Randall Boone, Susan P. Miller and Nancy Sileo

Blending Common Core Standards and Functional Skills in Thematic Units for Students with Significant Intellectual Disabilities
Karen Cooper-Duffy and Glenda Hyer

Effects of Peer Tutoring and Academic Self-Monitoring on the Mathematics Vocabulary Performance of Secondary Students with Emotional or Behavioral Disorders
Brittany L. Hott, Anya Evmenova and Frederick J. Brigham

Teaching Multiplication with Regrouping Using the Concrete-representational-abstract Sequence and the Strategic Instruction Model

Margaret M. Flores and Toni M. Franklin

Student and Teacher Perceptions of the Five Co-Teaching Models: A Pilot Study

Randa G. Burks-Keeley and Monica R. Brown

Students with Disabilities' Perspectives of STEM Content and Careers

Kimberly E Bryant Davis

A Researcher's Story of Assessing Motor Skills of Children with Autism Spectrum Disorder

Casey M. Breslin and Alice M. Buchanan

The Impact of Video Modeling on Improving Social Skills in Children with Autism

Mohammed Alzyoudi, AbedAlziz Sartawi and Osha Almuhi

Author Guidelines for Submission to JAASEP

Copyright and Reprint Rights of JAASEP

**JOURNAL of the
AMERICAN ACADEMY
of
SPECIAL EDUCATION PROFESSIONALS
(JAASEP)**

JAASEP Executive Editors

George Giuliani, J.D., Psy.D., Editor in Chief
Roger Pierangelo, Ph.D.

JAASEP Editorial Board

Nichole L. Adams, Psy. D.,
Nicholas Agro, J.D.
Dr. Mohammed Alzyoudi
Naomi Arseneau M.S. Ed
Vance L. Austin, Ph.D.
Faith Andreasen, Ph.D.
Diana Basilice, Ed.M.
Heather Bausano, Psy.D.
Rhonda S. Black, Ed.D.
Brooke Blanks, Ph.D.
Kara Boyer, M.S.Ed.
Casey M. Breslin, Ph.D.
Monica R. Brown, Ph.D.
Renee Brown, Ed.S.
Alice M. Buchanan, Ph.D.
Maricel T. Bustos, NBC
Debra Camp-McCoy, Ed.S.
Lynn Carlson, M.S.
Keri Chernichun, Psy.D.
Robert Colucci, D.O.
Lisa Dille, Ed.D.
Russell G. Dubberly, N.B.C.T., Ed. D.
Anne Durham, MM., MS. ME.
Tracey Falardeau Lindroth, M.A.
Neil Friesland, Ed.D.
Jeffrey Froh, Psy.D.
Leigh K. Gates, Ed.D.,
Anita Giuliani, M.S., S.A.S., S.D.A
Lola Gordon, Ed.S.
Matthew Glavach, Ph.D.
Sean Green, Ph.D.
Brittany L. Hott, Ph.D.
Victoria W. Hulsey, Ed. D.
Nicole Irish, Ed.D.
Julie Ivey-Hatz, Ph.D.
Bradley Johnson, Ph.D.

Christopher Kearney, M.S.
Noel Kok Hwee Chia, EdD, BCET, BCSE, FCP, FCoT, FCollP
Randa G. Keeley, M.A. (Doctoral Candidate)
Louisa Kramer-Vida, Ed.D.
Debra Leach, Ed.D.
Gloria Lodato Wilson, Ph.D.
Pamela E. Lowry, Ed.D. LDTC, NCED
Matthew Lucas, Ed.D., C.A.P.E.
Richard Lucido, Ph.D.
Jay R. Lucker, Ed.D., CCC-A/SLP, FAAA
Elisabetta Monari Martinez, Ph.D. Candidate
Scott Markowitz, J.D.
Alyson M. Martin, Ed.D.
Cara E. McDermott Fasy NBCT, Ph.D.
Cory McMillen, M.S.Ed.
Richard L. Mehrenberg, Ph.D.
Lisa Morris, M.S.
Shirley Mullings, Ed.D/CI
Lawrence Nhemachena, MSc
Myrna R. Olson, Ed.D.
Darra Pace, Ed.D.
Philip P. Patterson, Ph.D.
Denise Rich-Gross, Ph.D.
Clarissa E. Rosas, Ph.D.
Audrey C. Rule, Ph.D.
Edward Schultz, Ph.D.
Carrie Semmelroth, M.A.
Emily R. Shamash, Ed.D.
Dr. Mustafa Serdar KOKSAL
Cynthia T. Shamberger, Ph.D.
Tanya Spadaro, Ed.M.
Trisha Spencer, M.S.Ed.
Michelle Stephan, Ed.D.
Kristine Lynn Still, Ph.D.
Roben W. Taylor, Ed.D.
Amanda D. Tedder, M.ED.
Jessie S. Thacker-King, MED.
Raschelle Theoharis, Ph.D.
Vicki A. Urquhart, M.Ed.
Danielle Warnke, M.S. (Ph.D. Candidate)
Kathleen G. Winterman, Ed.D
Perry A. Zirkel, Ph.D., J.D., LL.

JAASEP Managing Editor

Richard Scott

Speech-Language Services in Public Schools: How Policy Ambiguity Regarding Eligibility Criteria Impacts Speech-Language Pathologists in a Litigious and Resource Constrained Environment

**Lesley Sylvan, Ed.D, CCC-SLP
Harvard Graduate School of Education**

Abstract

Public school districts must determine which students are eligible to receive special education and related services under the Individuals with Disabilities Education Act (IDEA). This study, which involves 39 interviews with speech-language pathologists and school administrators, examines how eligibility recommendations are made for one widely provided service: speech-language therapy. A key finding of this study is that the policy infrastructure guiding eligibility decisions has areas of significant ambiguity leading SLPs to face uncertainty about who should be found eligible for speech-language services. This ambiguity in policy opens the door for economic and legal factors to detrimentally influence the eligibility determination process resulting in high numbers of eligible students and correspondingly large SLP caseloads. Specifically, the litigious environment in which school districts operate puts SLPs on the defensive in the eligibility determination process. Further, speech-language therapy is increasingly utilized as a safety net given the lack of other resources available to academically struggling public school students. Finally, SLPs receive little administrative support or supervision further exacerbating their vulnerability to external pressures when making eligibility decisions. While focusing specifically on the eligibility decision process for speech-language services, this paper highlights issues that are likely applicable to how eligibility decisions for special education services are made more broadly.

Speech-Language Services in Public Schools: How Policy Ambiguity Regarding Eligibility Criteria Impacts Speech-Language Pathologists in a Litigious and Resource Constrained Environment

What are the challenges faced by school-based teams charged with making special education eligibility decisions? Who gets services, who doesn't and how do we decide? Do the decisions result in an *effective* allocation of limited resources? This paper explores these critical by questions by exploring how eligibility decisions are made with respect to a service provided to over half of all students receiving any form of special education services: speech-language services. Nationally, speech-language pathologists (SLPs) provide services to approximately 1.2 million students identified as "speech-language impairment" under IDEA (Office of Special Education Programs, 2011) as well as to another approximately 2.4 million students with primary disabilities other than SLI (e.g., autism, specific learning disability, etc.) (American

Speech-Language-Hearing Association, 2002) together accounting for approximately 60% of all students receiving special education services.

While speech-language therapy is provided extensively, it is overwhelmingly delivered by SLPs with large caseloads. The average caseload of school-based SLPs nationally is 47 students while some SLPs have reported serving as many as 240 students (ASHA School Survey, 2012). To fully understand the implications of these high caseloads, it is useful to consider that given a six-hour instructional school day, a caseload of 47 implies that SLPs are able to provide just over a half-hour equivalent of individualized attention to each student per school week. Even though students are most often served in groups, this perspective underscores the lack of individualized attention SLPs are able to provide in terms of either planning or implementing interventions for students.

Researchers have found that large caseloads in special education generally correlate with less individualized treatment offered to students (Russ, Chiang, Rylance, & Bongers, 2001; Vance, Hayden, & Eaves, 1989). Further, recent research shows that treatment intensity is likely a key element for achieving impactful interventions for both speech (i.e. articulation) as well as language (i.e. vocabulary and syntax) disorders (Berninger, Vermeulen, Abbott, McCutchen, & Cotton, 2003; O'Connor, 2000; Warren, Fey, & Yoder, 2007; Gillam & Loeb, 2010).

This study focused on the factors that influence how SLPs determine student eligibility for speech-language services since eligibility determination is the gate keeping function that is a major driver of SLP caseloads. Through 39 interviews conducted with SLPs and school administrators in two large urban school districts as well as extensive document analysis, this research identifies a number of policy, economic, legal, and managerial factors that together lead to the high eligibility rates which impact SLP caseloads.

Methods

Research Sites

Two school districts were examined in this study that will subsequently be referred to by their pseudonyms: Alona and Balboa. Due to the sensitive nature of the information shared, both school districts were highly concerned about confidentiality. Therefore, only summary statistics and non-identifying information are shared.

Alona and Balboa both serve large student populations and are based in urban metropolitan areas. Their populations are similar with respect to the following criteria: a) district size, b) socio-economic status (as indicated by the percentage of students eligible for free and reduced price lunch), c) diversity, and d) students qualifying for special education as a percentage of total student population, and e) graduation rates. In both districts the percentage of 8th graders who performed at or above the NAEP "Basic" Level on the Reading section was well below average (65% in Alona, 56% in Balboa, 76% nationally) and the percentage of students who spoke a language other than English at home was well above the national average (41% in Alona, 67% in Balboa, 21% nationally). Both districts also have caseloads that are similar to or slightly above the national average (47 in Alona, 55 in Balboa) as well as identify a sizable percentage of

students receiving special education identified as speech-language impaired (21% in Alona, 14% in Balboa, 19% nationally). See Table 1 for exact district characteristics.

Data Sources

The data for this study was collected during the 2010-2011 school year.

Documents

This study involved collecting and analyzing publicly available statistics on the districts, district special education training manuals, SLP training materials, independent reports commissioned by each district to evaluate special education services and publicly disclosed information on special education litigation faced by these districts.

Interview data

39 interviews were conducted with both SLPs and administrators. All interviews were digitally recorded and transcribed by the author. Specifically, 14 administrators (8 from Alona, 6 from Balboa) and 25 SLPs participated in interviews (12 from Alona, 13 from Balboa) for this study. Interviews ranged from 20 minutes to two hours. The interviews included questions focused on the participants' understanding of IDEA eligibility criteria, interaction between SLPs and other educators, as well as the referral and assessment process.

Purposeful sampling was used to select the SLP participants for the study (Bogdan & Biklen, 1998; Maxwell, 2006). In order to explore variation, half of the SLPs had less than five years experience (6 in Alona, 7 in Balboa) and half had ten or more years of experience (6 in Alona, 6 in Balboa). Further, the sample was evenly divided between SLPs who worked primarily at the elementary, middle and high school level (Elementary SLPs= 9, Middle School SLPs=8, High School SLPs=8). Within these grade levels, the sample was evenly divided between Alona and Balboa. All of the SLPs held masters degrees in speech- language pathology.

As interviews were conducted over the course of the 2010-2011 school year, the data collected from participating SLPs began to converge suggesting that the sample's size and diversity had likely achieved saturation in terms of uncovering most perceptions that might be important for addressing the research question (Glaser & Strauss, 1967). The researcher did not know any of the participants personally, no incentives were offered to participate in the study, and all participants consented to participate in study.

Data Analysis

Analysis occurred concurrently with data collection through brief interpretive essays as well as longer memos on salient points, such as re-evaluation procedures or the impact of litigation. Following data collection, all transcripts were entered into a coding and sorting qualitative research software application. Codes were developed using both open coding and codes derived from the study's literature-based conceptual framework (Maxwell, 2006; Strauss & Corbin, 1998). Using the coding scheme as a starting point, the researcher generated narrative summaries (Seidman, 2006) to further explore patterns in how participants understand and implement eligibility criteria as well as the pressures they face.

Soundness

This study complemented extensive interviews with substantial document analysis to triangulate findings on the field with prescribed policies and procedures (Fielding & Fielding, 1986, Maxwell, 2006; Patton, 2002). In addition, each of these methods relied on a diversity of sources.

The SLP interview participants were stratified by experience to isolate aspects of policy implementation that were independent of SLP skill. Since the SLP participants identified for this study worked with a variety of student populations (elementary, middle and high school levels), the researcher was able to follow the evaluative process for speech therapy as students receiving services progress through K-12. Interviews were also conducted with administrators to cross-check the perspectives of practicing SLPs as well as to understand how documented policies and procedures are enforced in practice. Special education policy and training documents analyzed for this study were sourced from both district and state level educational authorities.

The author is an experienced pediatric SLP with over 7 years of experience in public school settings. This allowed the researcher to establish credibility (Lincoln & Guba, 1985) with interview participants and gather data over the course of the school year that was varied enough to provide a revealing picture (Holloway, 1997). The author, mindful of personal bias, ensured analyst triangulation by involving multiple researchers in reviewing the research process throughout this study (Lincoln & Guba, 1985; Patton, 2002). This group of researchers, who served as the researcher's ad-hoc dissertation committee at Harvard University, included experts in qualitative data analysis, speech-language development, and special education policy.

Results

Policy Ambiguity

“As a veteran SLP, I help train new SLPs to the district and one of the things we review is eligibility. I am always shocked when I see that the state education code and IDEA policy with respect to eligibility criteria is one page. Just one page! It makes it seem quite clear on paper and yet the discussion is seemingly endless in reality. There is no one-way to answer it. I can give you a profile for one kid and I can give you three therapists that will give you three different answers. It's particularly difficult in this district, in part because it's so big and there are a wide variety of therapists' options. There is no cut and dried case ever. Our supervisor will say we just follow state law but there is so much complexity around determining eligibility.” – Balboa SLP

According to federal policy [IDEA 2004, § 602(3)(A)], SLPs need to answer three questions when determining student eligibility: 1) does the student have a speech-language impairment? 2) Is this impairment adversely impacting the student's education, and 3) is specialized education instruction necessary? According to SLP interviews, the process of determining if a student meets these three criteria is not straightforward and each of these three criteria is subject to significant interpretation.

Does the student have a speech-language impairment?

The process of determining whether a student meets the criteria for having a speech or language impairment is not clear-cut. Research has demonstrated that language is a remarkably complex set of behaviors which is not easily described and cannot be simply quantified with one set of

numbers (Fillmore, Kempler, & Wang, 1979; Dale, 1980). While standardized tests exist to assist SLPs in identifying speech and language disabilities, a growing body of research shows that a student's standardized score on a language measure cannot by itself determine whether that student has a speech-language disability (American Speech-Language-Hearing Association (ASHA), 2004; McFadden, 1996; Spaulding, Plante & Farinella, 2006). Within the field of speech-language pathology, language assessment is considered both an inexact science as well as somewhat of an art; meaning that there is no threshold at which a student is clearly considered speech-language impaired (Aram, Morris, & Hall, 1993; Records & Tomblin 1994). Determining eligibility, according to one SLP in Alona, involved some degree of "making judgment calls."

The issue of clearly diagnosing a speech-language disorder is further complicated by the fact that, according to official policy, SLPs in Alona and Balboa are both supposed to ensure that the "determinant factor" behind a student's poor language performance is not "lack of instruction" or "limited English proficiency." The vast majority SLPs interviewed for this study reported that it was challenging to decisively eliminate any one of these factors as a possible driver behind a student's challenges in the area of speech and language. The large majority (n=20) of interview respondents stated they felt that this challenge led them to over-identify students for services, at least initially. For example, one Alona SLP summarized this challenge and her response to it by stating:

Sometimes the issue might be environmental or lack of stimulation at home. Officially we are supposed to rule those out as factors, but it is hard to tell. You can't go back in time and see if a child had adequate language stimulation as a toddler. I'd rather err on the side of caution and find them eligible. It's better to have a higher caseload than not include students who might potentially benefit but I know other SLPs who might not include these students.

This perspective is consistent with research showing that poor instruction and limited language exposure lead to poor language performance in students that appears to be quite similar to the deficient language skills exhibited by students with "intrinsic" or "real" disabilities. Students who have poor language skills for either of these reasons are often considered functionally disabled (Fletcher, Francis, Shaywitz, Lyon, Foorman, Stuebing, et al., 1998; Burns, Griffin, Snow, 1999) and are often prescribed some of the same intervention techniques.

Is the impairment adversely impacting their education?

Secondly, there is ambiguity about how to best determine if impairment is adversely impacting a student's educational performance (Dublinske, 2002). The meaning of the phrase "adverse effect on educational performance" has been debated and has been interpreted in a variety of ways in public schools. While many districts interpret this phrase to imply that only students with academic difficulties are eligible for speech-language services (Dublinske, 2002), the Office of Special Education and Rehabilitative Services (OSERS) offered a policy letter of interpretation to ASHA in 2007 stating that an interpretation which "denies needed services to speech or language impaired children who have no problems in academic performance is unreasonably restrictive and is inconsistent with the intent of IDEA". With regards to students exhibiting speech disorders without concomitant academic difficulties, SLPs reported varying opinions. While some SLPs did not provide services to students with mild articulation disorders when they "were doing fine in school" others did provide services when they felt that the students'

articulation difficulties had a “large social impact”.

Even with students who are struggling academically, it is hard to determine if a speech-language impairment is the driving factor. This question was particularly complex given that 35% and 44% of 8th grade students scored *below* the “Basic” level on the Reading portion of the National Assessment of Educational Progress (NAEP) in Alona and Balboa respectively. Presumably, all of these students scoring below the “Basic” level likely struggle in an area addressed by SLPs (e.g. narrative comprehension, vocabulary, and literacy) and yet neither school district comes even close to providing over a third of their students with speech-language therapy. SLPs found it challenging to determine when poor academic performance was driven by a speech-language disorder. One SLP in Alona summarized this quandary in the following way:

If they paid more attention in class, read more books, tried harder academically, would it improve their language skills? Yes, it would. Is it truly a speech-language disability that drives their educational struggles or is it low motivation? When I ask myself, ‘Is their disability impacting them educationally?’ I really don’t know.

SLPs reported that it was often difficult to exit students from speech-language services when they continued to struggle academically and this led many students to remain on SLP caseloads for long periods of time.

Is specialized instruction, in the form speech-language therapy, necessary for a student to make progress?

Lastly, the task of determining whether speech-language therapy is necessary for students to progress in their education is multifaceted. This eligibility criterion is especially challenging to interpret given the overlap between SLP interventions and the educational program delivered by other educators in schools (Ukrainetz, 2003). For students with issues specific to speech (such as articulation disorders, stuttering etc.), it is generally clear that SLPs are best suited to address these issues. However, for students with mild-moderate language disorders as well as for students with severe language disorders, the areas that SLPs focus on in therapy are similar to issues targeted by both general education and special education teachers. A recent position statement by the ASHA on the role and responsibilities of SLPs in school settings (ASHA, 2010) discussed the immense variety of language skills that are related to literacy acquisition and academic language where SLP intervention is thought to be appropriate. For example, syntax, morphology, social-language skills, phonemic awareness, print concepts, word decoding, spelling, narrative comprehension, and writing composition are all skills that can be potential targets for SLPs in school settings but are also areas that are addressed by other educators.

One SLP in Balboa explained, “Many of my students have speech-language goals in the area of vocabulary development and grammar. These are areas also worked on by English teachers as well as other special education teachers. Do they need speech-language therapy specifically?” With regards to students with severe language disabilities (such as non-verbal students with autism), over half of the SLPs (n=15) included in this study felt that direct speech-language therapy was not *always* appropriate because many such students were already in a “language rich classroom designed for severely impaired students” and therefore could have their “language

needs met in the classroom”. However many SLPs (n=10) felt that they were uniquely positioned to address severe language difficulties and that it was insufficient to rely on special education teachers to meet those needs.

SLPs also found it difficult to determine when speech-language services were no longer necessary for students. Many students with language disabilities, by their very nature, will likely have life-long struggles with language (Stothard, Snowling, Bishop, Chipchase & Kaplan, 1998) but SLPs questioned whether speech-language therapy should be continually provided. One SLP from Alona stated, “They might meet a goal in one area but there are always new goals to be working on so we may be working with these students for many years.” When SLPs did consider dismissal for these students, most often it was not because all possible goals in the domain of language were achieved but because it just seemed like “it was time” for the student to move on from speech-language services. In the words of an Alona SLP:

I say if they have been in it for a long time, maybe when they get to 8th grade, it might be time for them to remain in the classroom because it is so important to be in class. I ask: ‘how long is it that this student has been getting speech?’ If they’ve had it since 2nd or 3rd grade I tell the IEP team that maybe it’s time for the student to stay in the classroom because their needs really can be addressed in the classroom.

Litigious Environment and Parental Pressure

“The district says we should always exit students who are not making progress but you learn when it’s not worth it to go there. When it’s better to give that child the extra time in speech-language services, even when it’s not appropriate, in order to keep up a good rapport with the family versus having the family pursue due process which could cost the district thousands and thousands of dollars.” – Balboa SLP

While the eligibility criteria for speech-language services are arguably ambiguous, the rights given to parents of special education students and the reality of litigation against school districts are quite clear. IDEA gives broad rights to parents that empower them to exercise significant influence in all decisions regarding the education of their children. Without parental consent, school districts cannot assess students or implement any specialized services. The district is responsible for providing all educational services that students with disabilities require and parents must agree to the educational program the district is offering. If parents disagree with any part of the IEP, then that aspect of the IEP cannot be implemented. Further, parents have the right to seek mediation or due process hearings if an agreement cannot be reached at an IEP meeting.

Like many other large urban school districts (i.e. *Corey v. Board of Education of City of Chicago*) both Alona and Balboa public schools are involved in multi-year multi-million dollar lawsuits regarding the adequacy of special education services. Further, both districts are involved in a large number of due process hearing each year in which parents disagree with the schools districts’ proposed special education programs for their children. This study found that both ongoing lawsuits and the continued threat of new litigation or due process hearings strongly influenced how SLPs made eligibility decisions despite the fact that not every IEP meeting became contentious.

SLPs in both districts were anxious not to be involved in situations where students' parents felt that their children did not receive adequate services. This led some SLPs to feel they should err on the side of caution by identifying more rather than fewer students. SLPs mentioned that their school districts have been subjected to scrutiny as a result of high-profile lawsuits and that their respective state departments had examined their implementation of special education programs. One SLP in Balboa said, "You hear of trouble in cases where a student should have been identified but they were not but rarely do you hear of litigious cases where the student got speech-language services but they didn't need it." Similarly in Alona an SLP stated, "Most often our school system has been criticized for not getting kids the services they need, not wrongly providing services. If the case seems ambiguous, I'd rather find them eligible than ineligible."

SLPs noted that the broad influence granted to parents under IDEA and the threat of litigation made their jobs challenging with regards to assessing eligibility in cases where parents disagreed with their recommendations. SLPs in both Alona and Balboa reported that their district had a culture of largely deferring to parent demands particularly when judging how long to continue to provide speech-language services to a student. For example, a SLP in Alona stated, "Parents have the final say and usually the district has a history of caving to their desires" while a SLP in Balboa stated, "The district is known for giving in to parent demands." The SLPs in both districts described how this attitude towards parent demands often resulted in them providing speech-language services for longer than they would independently recommend. For example an SLP in Alona explained how parent dissent made it difficult for her to dismiss students at the high school level, "If I could discharge kids, I would. I do ask parents when the annual reviews come up.... but parents are loath to give up the services because they know what they've gone through to get them. Legally you can't discharge a child, if their mother says no. An SLP in Balboa explained why it is challenging to exit students with severe disabilities. She stated that she often has to be in the position of telling parents that their children are not making progress and therefore she recommends dismissal:

Children with mental retardation are a hard group. Parents will really hold on to those services even when they are not helping them. I've worked with older students who were still receiving speech therapy when they exited the system at age 21 or 22. A lot of time parents feel, how do I say this, feel legally entitled to services. They are like my kid has speech, he has always had speech, and how can you say he doesn't need speech anymore? For example, I had this boy with Down syndrome and his parents would not let me dismiss him even though at that point he had been getting speech for like 14 years. I mean he had limitations but there was not much else we could do. It's really driven by the parents; if they say no to exiting them then we have to keep them.

SLPs questioned the wisdom of a system that gave so much control to parents to dictate services without requiring any financial commitment from the parents. One SLP in Balboa stated:

It's kind of crazy parents have so much control because all of us know if they had to pay for it, they would not be pushing so hard for it. It's like they feel entitled to get unlimited services and it can go on forever. Speech is not meant to be provided for a lifetime. This sounds horrible to say but some of us have talked about how it could make sense to go

towards an HMO model. I wish families were given the opportunity to have something like 3 years of speech therapy over their educational lifetime and, after that, if they want more it is for a fee. We are just not meant to be working on the same issues for years.

If parents push for continued services despite the SLPs' recommendations, SLPs noted that the "path of least resistance" was to acquiesce. The large majority (n=23) of SLPs could recall a time that they "acquiesced to parental demands" regarding either student eligibility or the amount of speech-language services to be included in the IEP in order to avoid confrontation or litigation. In most cases, SLPs reported that disagreeing with a parent actually creates extra hassle, necessitates the involvement of an administrator, creates additional paperwork, and increases the likelihood that SLPs will need to get involved with a due process hearing.

Lack of General Academic Supports

"One of the things that is also happening, and I think it's a result of the budget cuts, is that we are seeing fewer and fewer students being removed from speech therapy. What happens is the schools don't have other resources available to them or other program to offer to students... they are becoming more and more dependent on these mandated related services... The principal will say to us that I don't have anything else to offer this child. If we don't offer speech to this student, then this child will fail. So speech has become a safety net in many ways. By middle and high school many students could and should be decertified in theory from speech services but the speech services are continuing because there is nothing else to give them." – Alona SLP

Like many school districts, both Alona and Balboa must educate students with a wide range of educational needs on limited budgets with access to few extra resources to help struggling students. Program such as afterschool enrichment programs and academic tutoring for struggling students are often being trimmed in response to budget cuts. Similarly, as a result of budget constraints both Alona and Balboa have large class sizes that further cut into the time and attention that teachers have to devote to individual students. Further, like other school districts across the country, Alona and Balboa face increasing pressure to ensure that all students reach high academic standards. For example one SLP in Alona noted that, "Many schools had to stop offering academic interventions services so they started to refer to speech instead so that the students can get extra help." This quote exemplifies the theme noted across interviews that there is a practice of providing speech-language services to students struggling academically because there are few other resources that districts have to offer to these students.

This pattern of using speech-language therapy as staff augmentation not only seemed to impact teachers and administrators, who might pressure SLPs to take on additional students, but also seemed to impact the mindset of SLPs themselves. Some SLPs explained that they felt that speech-language services might not be the best intervention for students struggling academically but explained that they would feel guilty about not including these students in their therapy program because they knew they were the only ones likely to help them. For example, one SLP in Balboa stated, "I feel guilty if I don't take on referrals in some cases, like the kids might fall through the cracks. It's better to get them in to give them extra help rather than just let them fail school." In Alona an SLP stated:

I think what happens a lot of the time is that kids are thrown into speech-language services because we don't know how else to help child. Sometimes I get a student and I'm like, why are they receiving speech? They don't necessarily need the service, or maybe they might need a different kind of help but it's not necessarily speech. I think sometimes they are assigning kids to speech-language services for not the best reasons. I think sometimes they use it as a Band-Aid when they don't have other options.

The fact that SLPs noted speech-language interventions being used as a general education support parallels an issue facing special education generally.

Thin Supervisory Structure

"Many of the IEP meetings are difficult and many issues come up with respect to speech-language service. We only have a SLP administrator attend if it is absolutely necessary but in general it is best if you can handle it yourself as the administrators have limited time. I have been to IEPs with high-profile legal issues that have involved parents who have hired both advocates and lawyers. Even for these cases, I have never had one of my supervisors be at my IEPs. Sometimes you wish they were there but they are not." – Alona SLP

Both school districts in this study are organized in such a manner that there is relatively little administrative support to guide and supervise SLPs. The ratio of speech-language supervisors to SLPs is 1:60 in Alona and 1:90 in Balboa Public Schools. In contrast, there is one principal for approximately 30 classroom teachers in Alona and Balboa, similar to many school districts nationwide. Further speech-language supervisors are necessarily based in a central office location rather than the school building where SLPs work. This lean managerial structure does not allow administrators to frequently interact with SLPs on an individual basis or to go over specific cases unless the SLP brings the case to the supervisor's attention. SLPs in both Alona and Balboa reported seeing their supervisors at large group monthly meetings but mentioned that their direct interactions with them were relatively rare. In Balboa one SLP stated "I only have a one to one discussion with an administrator if there is a problem." Occasionally SLPs stated that it would be "helpful" to have more administrative guidance particularly when they face difficult cases or feel pressured by parents to provide more speech-language therapy than they feel is appropriate but they feel that administrators' availability and therefore support is "limited."

The administrators interviewed did not acknowledge the challenges associated with the eligibility determination process that SLPs described. The primary administrator overseeing speech and language services in Balboa stated, "We follow state and federal regulations in determining eligibility decisions" and in Alona the administrator stated, "Our practices are guided by federal policy." These statements made the process seem relatively straightforward with little room for subjective interpretation. When probed further, administrators said they "really could not comment" on how eligibility decisions varied from SLP to SLP or how factors like parental pressure play a role. Generally, administrators were reluctant to discuss the eligibility determination process for speech-language therapy and expressed confidence in their interpretation of policy and the districts' eligibility procedures.

The perspective of administrators differed from that of SLPs who viewed the eligibility process as much more complex. One Balboa SLP stated, “I know our supervisor says we just follow state law but it’s so much more complex than that in practice. You need to consider second-language learning issues, how to deal with students who make slow progress, and many other factors. That happens on a case by case basis by SLPs.” In some cases SLPs perceived the lack of supervisory support as an indication that their supervisors trusted their judgment. One SLP stated, “We have a lot of flexibility with entering and exiting students from speech therapy. The decision is in our hands. Our supervisor certainly does not have time to go over each individual case with us but rather trusts our judgment.” An SLP in Balboa stated, “They trust us to use our own professional judgment. I think everyone truly believes they are doing what is right but I don’t think things are consistent.” On the other hand, some SLPs perceived administrators’ thin supervision approach not simply as a matter of trust but as an unavoidable practical reality. In Balboa one SLP stated that, “I’m sure if there were more time and resources the administrators might be more present but it’s obvious to us that time is limited so we try to stay off their radar when possible.”

Both administrators and SLPs felt that their district is over identifying students for speech language services. For example, an administrator in Alona described that, “Speech therapy is a service that is used far too frequently. A student starts with speech as a service as a preschooler and it remains on their IEPs throughout their school career. Declassification, sadly, is minimal”. In Balboa, administrators also strongly implied that too many students receive speech-language services and felt that students’ language needs should be met in other ways rather than through direct services from SLPs. One administrator from Balboa stated, “Communication and language [skill development] is something that needs to happen consistently across the school day. Having an SLP checking for understanding after a student participates in a reading lesson is great, having a teacher do it is an even better means for language development. One hour a week of speech therapy is not the solution for facilitating language.”

It is interesting that SLPs report erring on the side of caution and identifying more students even as most reported facing pressure from administrators to keep speech-language student “numbers” down and exit students. In Alona one SLP noted, “We know they are trying to get us to wean students off speech therapy as they move into high school but in reality it is so hard to do.” Similarly in Balboa, an SLP stated, “We know we need to be thinking about exiting as students reach middle and high school. It’s hard though. They still are scoring so low on standardized tests.” It may be that administrators claim to want more students exited from speech but they may also want to avoid legal issues. Further, due to organizational factors, administrators have little time and resources to supervise or guide SLPs.

Discussion

This study found that policy ambiguity opens the door for other factors identified in this report to exert influence on the eligibility determination process. SLPs reported that it was not clear who was speech-language impaired, when these impairments were educationally relevant, and when speech-language services were actually necessary in many cases. If policy ambiguity was the only issue, SLPs could be either more conservative *or* more liberal in identifying students for services. However, the context in which SLPs operate matters.

Neoinstitutional theorists reject the notion that individuals make rational choices purely based on their own conceptions of efficiency, and instead, they emphasize how important it is for individual choices and actions to be considered within the context of an institution as a whole (Meyer, 2006; Spillane & Burch, 2006; Powell & DiMaggio, 1991). In discussing how street-level bureaucrats allocate services to the public, Weatherley and Lipsky (1977) state that the “demand for their services will always be as great as their ability to provide these services” because “organizational resources are chronically and severely limited in relation to the tasks they are asked to perform” (p. 5). It is unsurprising then that there is strong demand for speech-language therapy when one considers the context in which this service is delivered: speech-language therapy is a free legally protected service offered in a public school setting which is chronically short of resources to help struggling students. When SLPs are faced with policy ambiguity, the three other factors identified in this report (legal pressures, lack of general academic supports, and thin supervisory structure) can be seen as contextual factors impacting eligibility decisions.

Legal pressures are a key element of the institutional context. Under IDEA parents have broad rights to be key decision makers in their students’ special education plan and research has shown that much of the enforcement of federal special education law is mediated through lawsuits against states and districts as well as through due process hearings (Hehir, 2005; Katsiyannis, Losinski & Prince, 2012). Further major lawsuits against school districts have been a driving factor in special education implementation. For the most part, these legal pressures push SLPs to be more liberal in making eligibility decisions. SLPs reported that parents generally want more, rather than less support for their children. The major on-going lawsuits facing Alona and Balboa are also largely focused on these districts providing too few resources for special education. Faced with ambiguity in interpreting eligibility criteria for services, SLPs in this study reported finding it challenging to stand up to insistent parents who disagree with their negative eligibility decisions. SLPs tend to make eligibility decisions “defensively” by erring on the side of caution in order to avoid potential litigation and also to be compliant.

The lack of general education supports for struggling students is another key attribute of the institutional context. School districts are an inherently resource constrained environment so it makes sense for all avenues to be pursued in order to find supports for struggling students. SLPs found it hard to push back on school administrators or teachers for “throwing students into speech therapy because they don’t know what else to do” since it is usually possible to interpret the policy in a manner which finds students eligible for services when they are struggling academically. Research shows that special education is often used to support students who are struggling academically who may not be clearly “disabled” but may face academic struggles for a variety reasons related to economic disadvantage or lack of exposure to high quality instruction (Hehir, 2002; Oswald, Coutinho & Best, 2002; Parrish, 2002). For example, Hehir (2012) recently conducted research demonstrating that students from low-income backgrounds are over-represented in special education, even though there is no reason to believe that these groups should exhibit higher rates of disabilities than the population at large. In a study focused on special education implementation in Massachusetts, Hehir et al (2012) found that districts with a larger percentage of low-income students, on average, identified a larger percentage of their students under special education categories such as specific learning disability, speech-language

impairment, and other health impaired (where the criteria for diagnosis was considered subjective) whereas the rates of identification were more consistent for disability categories where the underlying cause of the disability was readily apparent (i.e. hearing impairment, orthopedic impairment, visual impairment).

Both of these issues are likely exacerbated by the lack of supervision and guidance from the administrators given the high SLP to administrator ratio. Weatherley and Lipsky (1977) surmise that the work objectives specified by administrators for street level bureaucrats are “usually vague and contradictory” and therefore it is difficult to generate “valid work performance measures” (p.2). They call the work of street-level bureaucrats “constrained but not directed” (p.3). This perspective helps inform why administrators interviewed did not acknowledge the challenges associated with the eligibility determination process that SLPs described. The thin supervisory structure, by design, puts SLPs in the role of interpreting ambiguous policy criteria and managing parental pressures for all but the most contentious cases.

Conclusion

This study found that the ambiguity inherent in the policy infrastructure allows external factors to detrimentally influence the eligibility determination process for speech-language services. This research, particularly the use of neo-institutional theory and street-level bureaucracy as explanatory lenses, suggests that it is not sufficient to place blame on individuals who are working in difficult and demanding positions. This study found that school districts are clearly under intense pressure to implement IDEA as faithfully and fairly as possible. Given the litigious nature of special education, simply putting more pressure on SLPs or on school districts to “do things better” is not enough. Pressured to “do things better” without accompanying policy changes could possibly lead to superficial changes but meaningful reform requires policy changes that either improve and strengthen the eligibility criteria for speech-language services to ameliorate ambiguity or alter the contextual factors which influence policy implementation. What could such reforms entail?

This research suggests that policy should acknowledge that language is tightly related to literacy and professionals other than SLPs address many elements of language. It might be helpful for district-level policy to be explicit with respect to the fact that language is an area addressed by a team of educators and identify specific roles and responsibilities with respect to language instruction for special education teachers and SLPs in order to best leverage their respective strengths.

Further, unfettered legal rights for parents can end up undermining the clinical judgment of SLPs in making eligibility decisions. While parents are uniquely positioned to advocate for their children, ultimately schools must institute procedures that allow student services to be largely driven by the expertise of appropriate professionals. Additionally, reforms must take into account that schools have limited resources. It may be that one student may benefit marginally from speech-language therapy but the resources dedicated to that student could have a greater impact on another student who may be able to get more individualized attention. SLPs are best positioned to make such judgments but are unable to consistently act on their judgments unless there is a way to consider cost-benefit analysis as part of eligibility decisions.

Finally, any serious reform effort needs to consider the resource constraints faced by district administrators charged with supervising the provision of speech-language resources. Meaningful support and guidance for SLPs could facilitate more consistency in the eligibility determination process and allow SLPs to make decisions primary based on student need as intended by IDEA.

References

- American Speech-Language-Hearing Association. (2002). *A workload analysis approach for establishing speech-language caseload standards in the schools: technical report* [Technical Report]. Retrieved from <http://www.asha.org/docs/html/TR2002-00160.html#sec1.2.2>
- American Speech-Language-Hearing Association. (2004). *Admission/Discharge Criteria in Speech-Language Pathology* [Guidelines]. Retrieved from <http://www.asha.org/policy/GL2004-00046/>
- American Speech-Language-Hearing Association. (2010). *Roles and responsibilities of speech-language pathologists in schools*. Retrieved from <http://www.asha.org/policy/PI2010-00317/>
- American Speech-Language-Hearing Association. (2012). *2012 Schools Survey report: SLP caseload characteristics*. Retrieved from www.asha.org/research/memberdata/schoolssurvey/.
- Aram, D. M., Morris, R., & Hall, N. E. (1993). Clinical and research congruence in identifying children with specific language impairment. *Journal of Speech and Hearing Research*, 36(3), 580-591.
- Berninger, V. W., Vermeulen, K., Abbott, R. D., McCutchen, D., Cotton, S., et al. (2003). Comparison of three approaches to supplementary reading instruction for low-achieving second-grade readers. *Language, Speech, and Hearing Services in Schools*, 34, 101–116.
- Bogdan, R. C. & Biklen, S. K. (2003). *Qualitative Research for Education: An introduction to Theories and Methods (4th ed.)*. New York: Pearson Education Group.
- Department of Health, Education, and Welfare (Office of Education in Washington, D.C.) *Letter to Stan Dublinske, Director of School Services Program (ASHA)* from the Retrieved from: www.asha.org/uploadedFiles/OSERS-Letter-Policy-Interpretation.pdf
- Dublinske, S. (2002). *Adversely Affects Educational Performance" Policy 1980-2002; Nothing Has Changed*. Retrieved from <http://www.asha.org/SLP/schools/prof-consult/adverselyaffects/>
- Fielding, N. & Fielding, J. (1986). *Linking Data*. Beverly Hills, CA: Sage
- Fillmore, C. J., Kempler, D., & Wang, W. S.-Y. (Eds.). (1979). *Individual differences in language ability and language behavior*. New York: Academic Press.
- Fletcher, J. M., Francis, D. J., Shaywitz, S. E., Lyon, G. R., Foorman, B. R., Stuebing, K. K., et al. (1998). Intelligent testing and the discrepancy model for children with learning disabilities. *Learning Disabilities Research and Practice*, 13, 186–203.
- Gillam, R. & Loeb, D. F. (2010, January 19). Principles for School-Age Language Intervention: Insights from a Randomized Controlled Trial. *The ASHA Leader*.
- Glaser, B. & Strauss, A. (1967) *The Discovery of Grounded Theory: Strategies for Qualitative Research*, Chicago: Aldine Publishing Company
- Hehir, T. F. (1990). *The impact of due process on the programmatic decisions of special education directors*. Retrieved from Dissertations & Theses @ Harvard University.(AAT

- 9032438).
- Hehir, T. (2005) *New Directions in Special Education: Eliminating Ableism in Policy And Practice*. Cambridge, MA: Harvard Education Press.
- Hehir, T., Grindall, T., & Eidelman, H. (2012) *Review of Special Education in the Commonwealth of Massachusetts, Report commissioned by the Massachusetts Department of Elementary and Secondary Education* Retrieved from <http://www.doe.mass.edu/sped/2012/0412sped.htm>
- Holloway, I. (1997). *Basic Concepts for Qualitative Research*. Oxford: Blackwell Science.
- Individuals with Disabilities Education Improvement Act of 2004*, Pub. L. No. 108-446 (2004).
- Katsiyannis, A., Losinski, M., & Prince, A. T. (2012). Litigation and Students with Disabilities: A Persistent Concern. *NASSP Bulletin*, 96(1), 23-43.
- Lincoln, Y & Guba, E. (1985) *Naturalistic Inquiry*. Newbury Park, CA: Sage
- Maxwell, J.A. (2006). *Qualitative research design: An interactive approach (2nd ed.)*. Thousand Oaks, CA: Sage Publications.
- McFadden, T. U. (1996). Creating language impairments in typically achieving children: The pitfalls of 'normal' normative. *Language, Speech, & Hearing Services in Schools*, 27(1),
- Meyer, H. (2006). The Rise and Decline of the Common School as an Institution: Taking "Myth and Ceremony" Seriously. In H. Meyer & B. Rowan (Eds.), *The New Institutionalism in Education*. Albany, NY: State University of New York Press.
- McFadden, T. U. (1996). Creating language impairments in typically achieving children: The pitfalls of 'normal' normative.. *Language, Speech, & Hearing Services in Schools*, 27(1), 3.
- O'Connor, R. (2000). Increasing the intensity of intervention in kindergarten and first grade. *Learning Disabilities Research & Practice*, 15(1), 43-54.
- Office of Special Education Programs. (2011). *Twenty-Seventh Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act*. Washington, DC: U.S. Department of Education. Retrieved April 20, 2010, from: <http://www.ed.gov/about/reports/annual/osep/2005/parts-b-c/index.html>
- Oswald, Donald P., Coutinho, Martha J., and Best, Al M. (2002). *Predictors of Overrepresentation of Minority Children in Special Education*. In Losen D. & Orfield, G, eds., *Racial Inequity in Special Education*. Cambridge, MA: The Civil Rights Project and the Harvard Education Press.
- Parrish, Thomas. (2002). *Racial Disparities in Identification, Funding, and Provision of Special Education*. In Losen D. & Orfield, G, eds., *Racial Inequity in Special Education*. Cambridge, MA: The Civil Rights Project and the Harvard Education Press.
- Patton, M. Q. (2002). *Qualitative evaluation and research methods (3rd ed.)*. Thousand Oaks, CA: Sage Publications, Inc.
- Powell W. W. & DiMaggio P. J. (Eds.), *The New Institutionalism in Organizational Analysis*. Albany, NY: State University of New York Press.
- Records, N. L., & Tomblin, J. B. (1994). Clinical decision making: Describing the decision rules of practicing speech- language pathologists. *Journal of Speech and Hearing Research*, 37(1), 144-156.
- Russ, S., Chiang, B., Rylance, B., & Bongers, J. (2001). Caseload in special education: An integration of research findings. *Exceptional Children*, 67(2), 161-172.
- Seidman, I. (2006). *Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences*. New York: Teachers College Press.

- Spaulding, T., Plante, E. & Farinella, K. (2006). Eligibility Criteria for Language Impairment: Is the Low End of Normal Always Appropriate? *Language, Speech, and Hearing Services in Schools* 37(1):61-72.
- Spillane, J. and Burch, P. (2006). The Institutional Environment and Instructional Practice: Changing Patterns of Guidance and Control in Public Education. In B. Rowan and H. Meyer, Eds., *The New Institutionalism in Education*. Albany: SUNY Press.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Thousand Oaks, CA: SAGE Publications.
- Stothard, S. E., Snowling, M. J., Bishop, D. V. M., Chipchase, B. B., & Kaplan, C. A. (1998). Language-impaired preschoolers: A follow-up into adolescence. *Journal of Speech, Language, and Hearing Research*, 41, 407–418.
- Ukrainetz, T. A., & Fresquez, E. F. (2003). What isn't language?: A qualitative study of the role of the school speech-language pathologist. *Language, Speech, and Hearing Services in Schools*, 34, 284–298.
- Vance, H., Hayden, D., & Eaves, R. (1989). A caseload study of educational activities for special education resource teachers and speech pathologists. *Diagnostic*, 14(3), 183–190.
- Warren, S. F., Fey, M. E., & Yoder, P. J. (2007). Differential treatment intensity research: A missing link to creating optimally effective communication interventions. *Mental Retardation and Developmental Disabilities Research Reviews*, 13, 70–77.
- Weatherley, R.A. & M. Lipsky (1977). Street level bureaucrats and institutional innovation: Implementing special education reform. *Harvard Educational Review* 47(2), 171-197.
- Westby, C. (1985). Learning to talk-learning to learn: Oral literate language differences. In C. Simon (Ed.), *Communication skills and classroom success*. San Diego, CA: College Hill Press.

About the Author

Lesley Sylvan, EdD, CCC-SLP, completed her Masters degree in speech-language pathology from Boston University. She also completed a Master degree in educational policy and management as well as a Doctorate degree in human development and education from the Harvard Graduate School of Education. She has over 7 years of experience as a school-based SLP in urban school districts.

Table 1. *Key Characteristics of Research Sites*

<i>District</i>	<i>Alona</i>	<i>Balboa</i>	<i>National</i>
Large K-12 enrollment	> 55,000	>55,000	There are 77 districts nationally with over 55,000 students ¹
Diverse student population	12% White (s.d.=19%) 73% African American, Hispanic, Asian, Other	9% White (s.d.=17%) 91% African American, Hispanic, Asian, Other	~ 56% White ~ 44% African American, Hispanic, Asian, Other ²
% of students eligible for free and reduced price lunch	77% (s.d.=20%)	77% (s.d.=22%)	48% ¹
High School Graduation Rate	60% (s.d.=21%)	65% (s.d.=29%)	78% ³
% of 8 th graders with Reading Scores or above the “Basic” Level on the NAEP	65%	56%	76% ⁴
% of students who speak a language other than English at home	41%	67%	21% ⁵
% of total enrollment identified for special education	14%	12%	11% ⁱ
Percentage of students receiving special education identified as speech-language impaired	21%	14%	19% ⁱⁱ
SLP caseload size	47	55	47 ⁱⁱⁱ

Note: Where available, standard deviations (s.d.) are shown in parentheses. Standard deviations are calculated across the population of schools in the district.

¹ Source: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (2010), *U.S. Numbers and Types of Public Elementary and Secondary Schools From the Common Core of Data (2010)* (NCES 2012-325).

² Source: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, *Status and Trends in the Education of Racial and Ethnic Groups (2010)* (NCES 2010015).

³ Source: U.S. Department of Education, *National Center for Education Statistics, Common Core of Data (CCD)*

⁴ Source: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, *National Assessment of Educational Progress (NAEP), various years, 2002–2011 Reading Assessments*.

⁵ Source: U.S. Department of Commerce Economics and Statistics Administration, U.S. Census Bureau (2013), *Language Use in the United States: 2011*

⁶ Source: U.S. Department of Education, Office of Special Education and Rehabilitative Services, Office of Special Education Programs, (2012). *Thirty-first Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act*.

⁷ Source: U.S. Department of Education, Office of Special Education and Rehabilitative Services, Office of Special Education Programs, (2012). *Thirty-first Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act*.

⁸ Source: American Speech-Language-Hearing Association. (2010). *2010 Schools Survey report: SLP caseload characteristics*.

Intentionally Left Blank

Are Parents Really Partners In Their Child's Education?

Clarissa E. Rosas, Ph.D.
College of Mount Saint Joseph

Kathleen G. Winterman, Ed.D

Abstract

Although federal legislation requires parent involvement in the development of Individualized Education Programs, parents often lack adequate background knowledge to partner with school personnel in the development of programs for their child. In an effort to provide all stakeholders with information pertaining to the education of children with disabilities, state departments of education publish documents on policies and procedures concerning special education services. This study examined the readability level of those published documents to determine if they were commensurate with the reading level of most adults. Results of this study indicate that at the surface level, the documents appear to be written at a level of understandability that most adults should comprehend. However, upon further examination, it was revealed that the level of literacy proficiency required to interpret the documents requires a more sophisticated level of literacy. Therefore the documents are not commensurate with the literacy level of most adults.

Are parents really a partner in their child's education?

All parents want their children to succeed. The path to success for most children is through education. Yet, when a child is labeled as having a disability the road to success is complicated and mired with unforeseen details that must be addressed. The issues parents contend with are multiplied. Parents are thrown into a world of special education with rights and responsibilities that they are unfamiliar with and have never experienced. The expectation is that parents are to advocate for their child, know their rights, be knowledgeable about school rules, and educational politics.

Most parents are not aware that they must assume these responsibilities upon initial diagnosis that their child has a unique learning need. The realization that their child has a disability is heavy enough; yet, they are required to be knowledgeable of the legal and educational policies associated with special education. How are parents supposed to educate themselves about the specific intricacies of their child's needs, become a case manager who coordinates specialists, and maintain a job as well as balance their family life. One oasis of hope for parents often is the public schools where public laws such as the Education of All Handicapped Children Act (1975) and Individuals with Disabilities Education Improvement Act of 2004 (IDEA, 2006) were enacted to ensure that all children with disabilities receive free and appropriate services to address the child's unique needs (Lo, 2012). According to Mueller (2009), the letter and the spirit of IDEA are to encourage a partnership between the parents and the school that promotes

an educational team to provide appropriate services for the child. The primary mechanism for achieving this objective is the Individualized Education Program (IEP).

The foundation of the IEP meeting for children with special needs is the concept of the team and the team decisions that are made for the benefit of the child. One of the core principles of IDEA is the belief that parents are collaborative team members in the IEP process. According to Fish (2008), IDEA was created for schools and parents to share equal responsibility ensuring that the child's needs are met. Mueller (2009) states that the principles of IDEA are based upon the working relationship between the child's home and school that fosters an educational team with the goal of providing the child with the agreed upon services. IDEA empowers the parents and school to work together amicably to share a vision of what the child's educational reality should be. Unfortunately, this is often not the reality (Mueller, 2009; CADRE, 2011).

With each reauthorization, IDEA has continued to attempt to strengthen the parents' role in the team meeting. Within the IEP meeting, ideally the child's present levels, goals, objectives, placement, evaluation criteria, and duration of services are determined (Drasgow, Yell, & Robinson, 2001). According to Cheatham, Hart, Malian, & McDonald (2012), barriers still exist preventing the full implementation of IDEA. Students' successes within the regular classroom are minimized due to limited resources, class sizes, and teacher training. In addition, schools do not provide families with information regarding IDEA or the information is difficult to understand. These issues minimize a parent's ability to truly be a collaborative team member at the IEP table. Parents' struggles to be heard were documented by Zirkel & Gischlar (2008) in their report of 2,800 adjudicated due process hearings nationwide per year. This number only represents the cases that went as far as a hearing. How many other cases are there?

IDEA is based upon the concept of true collaborative teaming. But, what is a team? Is your IEP team truly a team or a group? What is the difference? Collaborative teaming is defined as two or more people working together toward a common goal (Snell & Janney, 2000). In teams, all members have a role in the decision making. Snell and Janney (2000) believe "Collaborative teaming facilitates the inclusion of students with disabilities in general education environments, and can be viewed as the glue that holds inclusive schools together" (p. 33).

While collaboration and teaming is viewed and supported by IDEA as one of the critical roles of special education teachers, historically teacher preparation programs did not always focus on preparing teachers to include parents in the teaming process as noted in Kolstoe's (1970) text:

Both the child and his parents should be told that the child is being transferred into the special class because the class is special.... The entire program should be explained so the parents will understand what lies ahead for the child and so they can support the efforts of the teachers with the child (p. 42).

This attitude, which is still shared by some educators, places educators at the center of decision-making and parents as the recipients of those decisions. Special education was originally based on the scientific belief which is also referred to as the medical model. This scientific belief is that the focus should be on the identification of a disability, which involves in-depth clinical perspectives, with emphasis on the deficit and then taking action to control and/or alter the

disability. Decisions under this philosophy primarily rest on the trained educators; parents are viewed as receivers of their recommendations. Any school failure is then attributed to the parents' lack of support or inability to provide assistance at home (Pushor & Murphy, 2004).

In response to the medical model philosophy, the social model emerged as more inclusive classrooms gained popularity within the field of special education. Instead of focusing on deficits and how to "fix" or "lessen" the disability, the social model focuses on the strengths of the individual and any barriers are the result of social constructivism (Longmore, 2003; Riddell, 2007). That is, how individuals are treated is what makes people different not their unique characteristics. Schools that have embraced the social model typically provide universal supports that are available to all students. These universal supports which often include differentiated instruction, multi-tiered instruction, positive behavior support, and response to intervention are conceptually based on the belief that providing universal assistance will benefit all students and minimize any stigma associated with weaknesses. In addition, schools who subscribe to the social model also embrace full parent participation as they recognize that when parents are involved in their child's school, the child's educational experience is enhanced. These experiences include positive outcomes such as regular attendance, higher academic achievement, positive school behaviors, and higher graduation rates (Bouffard & Weiss, 2008; Catsambis, 2001; Epstein & Sheldon, 2002; Epstein, J. L., Sanders, M. G., Simon, B. S., Salinas, K. C., Jansorn, N. R., & Van Voorhis, F. L., 2002; Fan & Chen, 2001; Hughes & Kwok, 2007; National Middle School Association, 2003; Sheldon & Epstein, 2004; Simon, 2004).

The concept of parent involvement is widely accepted as a strategy to increase students' achievement (Bouffard & Weiss, 2008; Epstein, 2008). However, for students with disabilities, parental involvement is not only considered a strategy but a requirement that is protected under federal legislation. IDEA requires schools to partner with parents in shared decision making that support the academic achievement of students. To this end, IDEA requires parents to be involved in the IEP process from referral to designing academic programs to meet the individual needs of students with disabilities. According to Turnbull, Turnbull, Erwin, Soodak & Shogren (2011) the major principle of IDEA is that "parents have a role and even a responsibility to make decisions about their child's education and that IDEA ... legitimizes parents... as educational decision makers and enables parents, students, and professionals to establish partnerships with each other" (p.124).

Despite the fact that legislation mandates parental involvement in the IEP decision making process and the literature is clear that when parents are involved students' academic achievement increases; in reality parental involvement during the IEP process is limited for some. Fish's (2008) study found that parents of children with autism perceived that they were not treated as equal partners during the IEP process and had to take the initiative to become knowledgeable about special education in order for their children to receive services. Underwood's (2010) study which also examined parental involvement in IEPs found that 62% (N=21) of the parents in their study "were either neutral or not satisfied with their involvement in IEP development" (p. 28). Fish's (2008) study found that 27% of parents disagreed with the academic curriculum determined for their child and 20% of the parents had concerns over their child's placement. However, 45% of the families felt that they were treated fairly and as an equal team member.

Results of these studies suggest that barriers impede parental participation in decision making during the IEP process.

Development of an IEP that represents the collaboration of all stakeholders, including parents, is a complex process which requires a certain level of sophistication. This sophistication includes an understanding of the school culture, curriculum, strategies, legal parameters, and a level of literacy. While school personnel have undergone training on the development of IEPs through their teacher preparation programs and/or staff development, parents are often left to learn the process on their own. In search to learn the process, some parents look to their neighborhood schools, districts, and state departments of education. These public agencies provide documents on policies and procedures pertaining to the education of children in preschool through twelfth grade. Often these documents are developed by state departments of education who are charged with providing support and information to districts, schools, parents and their communities at large. Therefore, these public documents potentially are instrumental to communicating critical information to all stakeholders.

Purpose

The purpose of this study was to investigate the readability (i.e., the ease in which text can be understood) level of IEPs and handbook/manuals on special education that are developed and published by individual state departments of education, in order to determine if the ease in which these documents can be read and understood is commensurate with the educational level of most adults who may be parents of children with disabilities. The research questions that guided this study were as follows:

1. What is the readability level of sample IEPs and information handbooks/manuals on special education provided by State Departments of Education (SDE) whose purpose is to provide training and education to parents and teachers who serve and advocate for children with disabilities?
2. Are sample IEPs and information handbooks/manuals on special education available on State Departments of Education websites written at a level commensurate with adult literacy?

Method

This study examined fifty state departments of education websites for the purpose of determining if information materials such as sample IEPs and handbooks/manuals on special education are commensurate with the literacy level of adults. Narratives from the sample IEP's present level of academic achievement and functional performance sections; and narratives from the handbooks/ manuals were extrapolated and analyzed using Fry's Readability Index. The Fry Readability Index is a metric developed by Edward Fry to determine the grade reading level of a sample English text. Two national data banks were examined for the purpose of determining the literacy level and educational attainment of adults. The National Center for Education Statistics provided adult readability levels which were compared to the readability level of the sample IEPs and the handbooks/manuals provided by the state departments of education. The U.S. Department of Commerce, Census Bureau provided the educational attainment of adults which

was compared to the readability grade levels of the sample IEPs and handbooks/manuals on special education. Descriptive statistics was used to describe the relationship between the readability of the sample IEPs and handbooks/manuals with adult literacy levels.

Results

Readability Level of IEPs

A review of the fifty SDE revealed that only seven of them provided sample IEPs. Table 1 presents the readability features of the sample IEPs. As the data in the table indicate, the mean grade level for all sample IEPs was 12.85 (1.57). Further word statistics revealed that the mean number of syllables per 100 words for all sample IEPs was 158.14 (10.35). Whereas, the mean percent of three or more syllables in text for all sample IEPs was 15.42% (2.87). In addition, the word statistics revealed that the mean number of sentences per 100 words was 7.09 (2.32); and the mean number of words per sentence was 15.14 (3.80) for all sample IEPs.

Table 1

Readability Levels of Individualized Educational Program (IEP) Documents from Sample State Departments of Education

Readability Features	<u>Sample States</u> (n=7)						
	1	2	3	4	5	6	7
Grade Level	12.0	12.0	15.0	12.0	13.0	15.0	11.0
Mean number of Syllables per 100 Words	150.0	156.0	174.0	153.0	156.0	171.0	147.0
Mean number of Sentences per 100 words	7.8	6.0	5.3	6.9	6.0	5.6	12.0
Mean number of Words per Sentence	13.0	17.0	19.0	14.0	17.0	18.0	8.0
Percent of 3+ Syllables in Text	13%	14%	20%	13%	14%	19%	15%

*Readability features calculated using Fry Readability Index.

Readability Levels of Handbooks/Manuals

A review of the fifty State Departments of Education (SDE) and the District of Columbia revealed that handbooks/manuals on special education were available. Table 2 presents the readability features of the handbooks/manuals developed by the SDE. As noted in the table, the mean grade level of the handbooks/manuals was 13.58 (2.66). However, more than half of the states' handbooks/manuals (62%) were at a 15.0 grade level. Further word statistics revealed that the mean number of syllables per 100 words for all the handbooks/manuals was 175.25 (18.80), and the mean percent of three or more syllables in the text was 20.0% (5.92). In addition, the word statistics revealed that the mean number of sentences per 100 words for all the

handbooks/manuals was 4.80(2.23), while the mean number of words per sentence for the handbooks /manual was 23.86 (8.20).

Table 2

Mean Readability Levels of Training State Handbooks/Manuals

Readability Features	Manuals/Handbooks n=50 Mean (SD)
Grade Level	13.58 (2.66)
Mean number of Syllables per 100 Words	175.25 (18.80)
Mean number of Sentences per 100 words	4.80 (2.23)
Mean number of Words per Sentence	23.86 (8.20)
Percent of 3+ Syllables in Text	20.00 (5.92)

*Readability features calculated using Fry Readability Index.

Adult Literacy

In order to determine if the readability level of the sample IEPs and handbooks/manuals on special education provided by individual state departments of education were commensurate with the adult literacy, two national databases were examined. The first database reviewed was the National Center for Education Statistics (NCES). The NCES sponsored the National Assessment of Adult Literacy (NAAL) which is considered to be the most thorough measure of adult literacy. NAAL identified three types of adults' daily literacy: prose, document, and quantitative. Prose literacy requires individuals to have the skills to comprehend and use continuous texts which are often found in magazines and instructional materials. Document literacy involves the skills to locate and use information which are often required when completing forms such as job application and utilizing charts such transportation schedules. Quantitative literacy necessitates the skills to solve numerical daily activities such as balancing a checkbook, tipping, planning a trip or determining the cost of an order (NAAL, 2012). In 2003, in an effort to determine adult literacy, NAAL conducted a research study involving 19,000 individuals, ages 16 and older in the US. Using a rubric, the participants were interviewed and their daily literacy (prose, documents and quantitative) were rated on four levels of proficiency: below basic, basic, intermediate, and proficient. These levels refer to the complexity of skills required to complete daily literacy. A rating of below basic indicates that the individual has limited skills which require no more than simple or concrete daily literacy. The basic level rating refers to those individuals who have the ability to perform simple and everyday literacy skills. A rating at the intermediate level is designated for those individuals who can perform moderate challenging literacy skills. The rating of the proficient level refers to those individuals who have the knowledge and skills to perform complex and challenging literacy activities (NAAL, 2012). Results of the NAAL study indicate that the majority of participants perform at the intermediate level in the daily literacy of prose (44%) and document (53%). In the literacy

skill of quantitative the majority of the participants were at the basic (33%) and intermediate (33%) level. See Table 3 for a summary of the results of the NAAL 2003 study.

Table 3

Percentage of adults in each prose, document, and quantitative literacy level by percentage

Daily Literacy Type	Below Basic	Basic	Intermediate	Proficient
Prose	14%	29%	44%	13%
Document	12%	22%	53%	13%
Quantitative	22%	33%	33%	13%

Below Basic = no more than the most simple and concrete literacy skills; Basic = can perform simple and everyday literacy skills; Intermediate = can perform moderate challenging literacy skills; Proficient = can perform complex and challenging literacy skills.

SOURCE: National Center for Educational Statistics. (2003). *National Assessment of Adult Literacy*.

In order to determine the education achievement of the US population an examination of the U.S. Department of Commerce, Census Bureau (2011) was completed. A summary of the educational attainment of the US population is summarized in Table 4. As the data in the table indicate, between the years of 2000-2011 the majority 85.52% (1.25) of the US population had a high school or higher degree. Slightly more females 85.89% (1.37) had high school or higher degrees then the male population 85.16% (1.05). Between 2000-2011, 28.13% (1.99) of the population had Bachelor's or Higher Degrees. Slightly more males 29.15% (.84) had bachelors or higher degrees then the female population 26.98% (2.13).

Table 4

Education Level of Individuals Age 25 and over in the United States by percentage

Gender/Age/Year	<u>Education Attainment</u>	
	High School or Higher Degree <i>M % (SD)</i>	Bachelor's or Higher Degree <i>M % (SD)</i>
<u>Females, 25 and over:</u>		
March 2000	84.0 (0.19)	23.6 (0.22)
March 2001	84.2 (0.18)	24.3 (0.22)
March 2002	84.4 (0.13)	25.1 (0.15)
March 2003	85.0 (0.13)	25.7 (0.15)
March 2004	85.4 (0.12)	26.1 (0.15)

March 2005	85.5 (0.15)	26.5 (0.23)
March 2006	85.9 (0.16)	26.9 (0.22)
March 2007	86.4 (0.15)	28.0 (0.23)
March 2008	87.2 (0.17)	28.8 (0.24)
March 2009	87.1 (0.16)	29.1 (0.21)
March 2010	87.6 (0.15)	29.6 (0.21)
March 2011	88.0 (0.15)	30.1 (0.22)
<u>Males, 25 and over:</u>		
March 2000	84.2 (0.19)	27.8 (0.24)
March 2001	84.4 (0.19)	28.0 (0.24)
March 2002	83.8 (0.14)	28.5 (0.17)
March 2003	84.1 (0.13)	28.9 (0.17)
March 2004	84.8 (0.13)	29.4 (0.17)
March 2005	84.9 (0.19)	28.9 (0.29)
March 2006	85.0 (0.20)	29.2 (0.24)
March 2007	85.0 (0.21)	29.5 (0.25)
March 2008	85.9 (0.19)	30.1 (0.25)
March 2009	86.2 (0.19)	30.1 (0.28)
March 2010	86.6 (0.17)	30.3 (0.23)
March 2011	87.1 (0.18)	30.8 (0.23)

Source: U.S. Department of Commerce, Census Bureau, U.S. Census of Population. (2011). Educational Attainment in the United States.

This study set out to determine if the readability level of IEPs and handbook/manuals on special education, that are developed and published by individual state departments of education, are commensurate with the literacy level of most adults who may be parents of children with disabilities. Results of this study indicate that overall the mean readability level of IEPs provided by state departments of education (n=7) was 12.85 (1.57) and the mean readability level of manuals/handbooks provided by state departments of education (n=5) was 13.58.

A review of the U.S. Department of Commerce, Census Bureau revealed that the majority of the US population 84% (4.09) had a high school or higher degree (See Table 4). Results of these findings initially suggest that IEPs and handbooks/manuals on special education were written at a grade level commensurate with the majority (84%) of the US population. However, in reviewing the NAAL's study, only 13% of the population had the daily literacy skills of being proficient in understanding documents (See Table 3). Since the IEP forms are documents requiring complex and challenging literacy skills, when considering the results of the NAAL study, this suggests that the majority of the population (87%) do not have the necessary skills to actively participate in the development of the IEP document. In addition, since the handbooks/manuals developed by state departments of education fall under NAAL's daily literacy skill of prose and according to NAAL's study only 57% of the population would have the skills to read and understand handbooks/manuals. In summary, results of this study found that the IEPs and handbooks/manuals developed by state departments of education are not commensurate with the literacy level of the US Population. Results of this study raise two important questions. What is the importance of having a high school diploma if the citizens are

still unable to function at a level of proficiency with daily tasks? What is the census really reporting?

Discussion

Services for students with disabilities in the United States are based on federal legislation known as Individuals with Disabilities Education Act (IDEA). One of the core principles of IDEA is the belief that schools and parents share equal responsibility in the design of education plans (i.e., Individualized Education Plans) to meet educational needs of children with disabilities. With each reauthorization, IDEA has continued to strengthen the parents' role in the team meeting. To this end, all State Departments of Education have developed training materials to assist the public's understanding of the special education process.

A limitation of this study, that may adversely impact the broad generalization of the findings, is the number of IEPs that were available from State Departments of Education's websites. It is important to note that only seven State Departments of Education provided sample IEPs which may reveal that not all state departments view this as an important resource. However, even though the sample size of the IEPs was small and does impact the broad generalization, this study did find a disconnect between the readability of IEPs and the general literacy skills of the adult population.

At the surface level, the IEPs appear to be written at a level of understandability that should enable most parents to be active participants in their child's IEP development. However, upon further research the NAAL study reveals that the level of literacy proficiency required to interpret documents is significantly more sophisticated than first believed. A majority of the adult population is not prepared to examine the IEP documents and training manuals without additional support. This study set out to determine if the readability level of IEPs and handbook/manuals on special education, that are developed and published by individual state departments of education, are commensurate with the literacy level of most adults who may be parents of children with disabilities. Results of this study suggest that IEPs and handbook/manuals are not written at the literacy level of most adults. While the US Department of Commerce, Census Bureau revealed that majority of the US population 84% (4.09) had a high school or higher degree (See Table 4) which would appear to be commensurate with the readability level of IEPs (12.85; 1.57) further investigation suggest that having a high school degree does not necessarily mean that the literacy skills required to complete an IEP or to review training documents are the literacy level of most adults. Results of the NAAL's study clearly indicate that only within 13 % of the population possess the daily literacy skills of document (See Table 3). Since the IEP is a document requiring complex literacy skills, this suggests that the majority of the population both those with a high school diploma and beyond do not have the literacy skills necessary to be an equal partner in the development of an IEP. Therefore, most parents are not able to actively advocate for their children without additional training that is commensurate with their literacy level.

These publications require a level of reading proficiency that the majority of the population does not possess. This minimizes a parent's ability to truly be a collaborative team member at the IEP

table. Since parent participation is the cornerstone of shared decision making, it is critical that all communication is accessible to all team members.

The research on the readability level of IEPs in the US provides relevant information to the field of special education as we search for effective communication for all members of the IEP team. Although further research is necessary to gain a better understanding of the complex issues related to the readability of IEPs and literacy proficiency of those involved in the IEP process, to mitigate parents' involvement in the educational process not only denies their right to full participation which is protected under legislation, but sets up barriers for the child's future success.

References

- Bouffard, S., & Weiss, H. (2008) Thinking big: A new framework for family involvement policy, practice, and research. *The Evaluation Exchange*, 14 (1&2), 2-5.
- Catsambis, S. (2001). Expanding knowledge of parental involvement in children's secondary education: Connections with high school seniors' academic success. *Social Psychology of Education*, 5, 149-177.
- Cheatham, G. A., Hart, J. E., Malian, I., & McDonald, J. (2012). Six things you should never hear or say at an IEP/IFSP meeting: Educators as advocates for families. *Teaching Exceptional Children*, 44(3), 50-57.
- Consortium for Appropriate Dispute Resolution in Special Education (CADRE). (2011). Trends in Dispute Resolution under the Individuals with Disabilities Education Act (IDEA). Retrieved from <http://www.directionservice.org/cadre/>
- Drasgow, E., Yell, M. L., & Robinson, T. R. (2001). Developing legally correct and educationally appropriate IEPs. *Remedial and Special Education* 22(6), 359-373.
- Epstein, J. L. (2008). Research meets policy and practice: How are school districts addressing NCLB requirements for parental involvement? In A. R. Sadovnik, J. O'Day, G. Bohrnstedt, & K. Borman (Eds.), *No Child Left Behind and the reduction of the achievement gap: Sociological perspectives on federal educational policy* (pp. 267-279). New York, NY: Routledge.
- Epstein, J. L., Sanders, M. G., Simon, B. S., Salinas, K. C., Jansorn, N. R., & Van Voorhis, F. L. (2002). *School, family, and community partnerships: Your handbook for action*, second edition. Thousand Oaks, CA: Corwin Press.
- Epstein, J. L., & Sheldon, S. B. (2002). Present and accounted for: Improving student attendance through family and community involvement. *Journal of Educational Research*, 95, 308-318.
- Fan, X. T., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review*, 13, 1-22.
- Fish, W.W. (2008). The IEP meeting: Perceptions of parents of students who receive Special Education Services. *Preventing School Failure*, 53 (1).
- Fry, E. (2002). Readability versus leveling. *The Reading Teacher*, 56, 286-291.
- Hughes JN, Kwok O. (2007) The influence of student-teacher and parent-teacher relationships on lower achieving readers' engagement and achievement in the primary grades. *Journal of Educational Psychology*, 99, 39-51.
- Individuals with Disabilities Education Improvement Act of 2004*, 118 U.S.C. § 2647.

- Janney, R.J., Snell, M. E. (2000). *Teachers' guides to inclusive practices: Modifying schoolwork*. Baltimore, MD: Paul H. Brookes, Inc.
- Kolstoe, O. (1970). *Teaching educable mentally retarded children*. New York: Holt, Rinehart, and Winston, Inc.
- Lo, L. (2012). Demystifying the IEP process for diverse parents if children with disabilities. *Teaching Exceptional Children*, 44, (3), 14-20.
- Longmore, P. (2003). *Why I burned my book and other essays on disability*. Philadelphia: Temple University Press.
- Mueller, T. G. (2009). IEP facilitation: A promising approach to resolving conflicts between families and schools. *Teaching Exceptional Children*, 41, (3), 60-67.
- National Center for Educational Statistics. (2003). *National Assessment of Adult Literacy*. Retrieved from <http://nces.ed.gov/naal/literacytypes.asp>.
- National Middle School Association. (2003). *This we believe: Successful schools for young adolescents*. Westerville, OH: Author.
- Pushor, D., & Murphy, B. (2004). Parent marginalization, marginalized parents: Creating a place for parents on the school landscape. *Alberta Journal of Educational Research*, 50(3), 221-235.
- Riddell, S. (2007). A sociology of special education. In L. Florian (Ed.), *The Sage handbook of special education* (pp.34-45). Thousand Oaks, CA: Sage.
- Sheldon, S. B. & Epstein, J. L. (2004) Getting students to school: using family and community involvement to reduce chronic absenteeism. *School Community Journal* 4,(2), 39-56.
- Simon, B. S. (2004). High school outreach and family involvement. *Social Psychology of Education*, 7, 185-209.
- The Education for All Handicapped Children Act of 1975, 20 U.S.C. Sections 1401 etseq-
- Turnbull, A., Turnbull, H.R., Erwin, E.J., Soodak, L.C., & Shogren, K.A. (2011). *Families, professionals, and exceptionality: Positive outcomes through partnerships and trust* (6th edition). Upper Saddle River, NJ: Merrill.
- Underwood, K. (2010). Involving and Engaging Parents of Children with IEPs. *Exceptionality Education International*, 20(1), 18-36.
- U.S. Department of Commerce, Census Bureau, U.S. Census of Population. (2011). *Educational Attainment in the United States*. Retrieved from <http://www.census.gov/hhes/socdemo/education/data/cps/2011/tables.html>
- Zirkel, P.A., & Gischlar, K.L. (2008). Due process hearings under the IDEA: A longitudinal frequency analysis. *Journal of Special Education Leadership*, 21(1), 22-31.

Intentionally Left Blank

Vocational Rehabilitation Counselors' Perceived Influences on the Secondary Transition Planning Process and Postsecondary Outcomes of Students with Disabilities

Vickie Miller-Warren, Ed.D.

Abstract

Outside agencies such as vocational rehabilitation agencies are designed to help provide services such as job coaching, mental health services, tuition assistance, and life-skills training for students with disabilities during and after high school so that they may obtain postsecondary success (Gil, 2007). This study examined the perceived influences of vocational rehabilitation counselors regarding the secondary transition planning process and the postsecondary outcomes of graduates from the class of 2011 who were enrolled in a special education program while in high school. The study also examined how the vocational rehabilitation counselors utilized postsecondary follow-up data to improve and inform secondary transition planning. The results of this study revealed that more interagency collaboration among the adult support system of students with disabilities is needed in order to ensure postsecondary success.

Vocational Rehabilitation Counselors' Perceived Influences on the Secondary Transition Planning Process and Postsecondary Outcomes of Students with Disabilities

Outside agencies such as vocational rehabilitation and mental health agencies designed to provide services such as job coaching, mental health services, tuition assistance, and life-skills training for students with disabilities during and after high school are instrumental in helping graduates of special education programs transition from adolescence to adulthood (Gil, 2007). Research reveals that it is important for educators to collaborate with outside agencies such as vocational rehabilitation to help provide services such as job coaching, mental health services, tuition assistance, and life skills training for students with disabilities during and after high school (Gil, 2007; Oertle & Trach, 2007; Test et al., 2009). Interagency collaboration involves the process of establishing relationships with outside agencies that include paying for or providing related services to students with disabilities after high school (Kellems & Morningstar, 2010). Establishing a relationship with outside agencies early on during the secondary transition planning process allows students with disabilities the opportunity to have access to rehabilitation professionals. According to Oertle and Trach (2007), the assistance of rehabilitation professionals is critical in providing support such as helping students with disabilities gain access to community and workplace resources so that they can become skillful contributors to society. Therefore, rehabilitation professionals need to be a part of the secondary transition planning process (Oertle & Trach). However, many rehabilitation professionals are never invited to participate in secondary transition planning meetings.

Research shows that in order for students to receive the maximum benefits from rehabilitation agencies, they need to understand who the rehabilitation providers are and the services that they provide (Neubert et al., 2002; Oertle & Trach; Williams-Diehm & Lynch, 2007). Studies also

show that students who receive vocational rehabilitation services have a better chance at securing employment after high school (Neubert et al., 2002; Oertle & Trach). Although schools typically make student referrals to rehabilitation agencies during high school, they often fail to invite the agency representatives to the transition meetings resulting in the students not receiving services until after graduation, if at all. The failure to invite agency representatives to transition meetings leads to representatives not really knowing how to assist students in achieving postsecondary goals (Oertle & Trach). Once teachers better inform rehabilitation agencies of the agencies' roles in transition, rehabilitation agencies will better understand the importance of their participation in high school transition meetings to help students reach their postsecondary outcomes. The students who wait until after graduation to register for rehabilitation services are faced with greater obstacles in achieving their postsecondary outcomes, which is why collaboration with rehabilitation agency representatives during secondary transition planning meetings is important (Oertle & Trach). Transition is a collaborative process that involves the assistance of outside agencies such as vocational rehabilitation agencies, and educators should ensure that students and their families are aware of the vocational rehabilitation services available to them well before high school graduation (Lindstrom et al., 2007).

Method

In order to increase an understanding of the influences of outside agencies such as vocational rehabilitation on graduates with disabilities' secondary transition planning process and postsecondary outcomes, this study utilized qualitative and quantitative research methods through a mixed methods design. This study also examined how vocational rehabilitation agency representatives utilize postsecondary follow-up data to make improvements to the secondary transition planning process. Qualitative and quantitative data were collected in an effort to obtain an understanding of the vocational rehabilitation counselors' perceptions about the secondary transition planning process and postsecondary outcomes as well as their use of postsecondary feedback to improve the secondary transition planning process. The following research questions were the focus of this mixed methods study.

1. What are the perceived influences that outside agency representatives such as vocational rehabilitation counselors provided in the secondary transition planning process and postsecondary outcomes of graduates with disabilities?
2. How do outside agency representatives such as vocational rehabilitation counselors utilize postsecondary follow-up data to improve and inform secondary transition planning?

Participants

The participants consisted of four vocational rehabilitation counselors who were given a survey consisting of 13 closed-ended questions and three open-ended questions to complete on nine different graduates with disabilities from the class of 2011. Approximately 39 of the graduates from the class of 2011 had individual education plans and were receiving special education services at the time that they graduated from a rural high school located in a southern state. Only 23% of the class of 2011 graduates with disabilities reportedly had an outside agency representative such as a vocational rehabilitation counselor, according to a post-school survey

administered to their parents/guardians as a part of a larger study performed on the same graduates from which this study is derived. No other potential outside agency representatives, besides the four vocational rehabilitation counselors, were identified to participate in this study.

Instrumentation

The closed-ended *National Study of Transition Policies and Practices in State Vocational Rehabilitation Agencies* survey taken from the Rehabilitation Services Administration was adapted and administered to the four vocational rehabilitation counselor participants for the purpose of determining their perceived influences on the secondary transition planning process. The survey also acquired information from the participants regarding their influences on the postsecondary outcomes of the class of 2011 graduates with disabilities as well as how they used postsecondary follow-up data to improve secondary transition planning. Permission was given from the creators to use and adapt the Likert-scale section D entitled *Transition Services* of the survey for the purpose of this study. The validity and reliability of the *National Study of Transition Policies and Practices in State Vocational Rehabilitation Agencies* survey is supported by the University of Minnesota and Colorado State University in which an extensive review of the literature relevant to special education and vocational rehabilitation on the transition of high school students was performed before creating the survey (Norman et al., 2006).

The validity of the following three open-ended survey questions was based on a review of the literature that revealed that outside agency representatives such as vocational rehabilitation counselors should be involved in the secondary transition planning process of students with disabilities to help them achieve postsecondary success (Gil, 2007; Oertle & Trach, 2007; Test et al., 2009).

1. What role do you feel secondary transition planning played in the postsecondary outcomes of the graduate (Gil, 2007; Oertle & Trach, 2007; Test et al., 2009)?
2. How do you follow-up with the postsecondary outcomes of the graduate and how do you utilize the follow-up results (Gil, 2007; Oertle & Trach, 2007; Test et al., 2009)?
3. Is there any additional information that you would like to share?

Procedures

The administration of the vocational rehabilitation counselors' survey was a part of a larger on-going data collection system that started in 2012 as a part of a larger study that consisted of a varied data collection system that included input from teachers, parents, and administrators of graduates formerly enrolled in special education from the class of 2011. A proxy from the Local Education Agency was used to distribute and collect surveys from the vocational rehabilitation counselors who were previously identified as the outside agency representatives of nine of the graduates from the class of 2011 via information provided by the parents/guardians of the graduates. The surveys were administered to the vocational rehabilitation counselors who were currently working with the former graduates with disabilities from the class of 2011 one year after they graduated from high school. The high school graduates included former students who had an Individual Education Plan (IEP) during their senior year of high school and completed

high school with the state option of a standard high school diploma, an occupational high school diploma, or a certificate of completion.

Data Analysis

Data compiled from the surveys were analyzed utilizing content analysis and aggregated percentages. Content analysis of the vocational rehabilitation counselors' responses to the surveys resulted in a theme of a lack of outside agency support during the secondary transition planning process of students and more outside agency support after the students completed high school.

Results

Closed-ended Survey Responses

Note that N represents the number of graduates from the class of 2011 who were currently working or had recently worked with the vocational rehabilitation counselors at the time that the survey was distributed. The rating scale for the 13 closed-ended vocational rehabilitation counselors' survey questions ranged from 1 to 5 with 1= never or almost never, 2=occasionally, 3=half the time, 4=frequently, 5=always or almost always. Table 1 below reveals the results.

Table 1

Vocational Rehabilitation Survey Closed-Ended Responses

Question	Total (N)	Never or almost never (n)	Occasionally (n)	Half the time (n)	Frequently (n)	Always or almost always (n)
1. You participated in an IEP/transition plan for the graduate before the individual completed high school.	9	0	4	1	0	4
2. You communicated with local education agency personnel to discuss helpful approaches and strategies for the graduate.	9	0	2	0	0	7
3. You provided career counseling and guidance services to the graduate.	9	0	0	0	4	5
4. You conducted or sponsored appropriate transition/vocational assessments to determine	9	0	0	1	4	4

the service needs of the graduate in the areas of postsecondary education and employment.

5. You participated in supporting the graduate in work-based learning, career and technical education, and other vocational services.	9	0	1	0	1	7
---	---	---	---	---	---	---

6. You arranged for participation of the graduate in unpaid work experiences.	9	7	1	0	0	1
---	---	---	---	---	---	---

7. You arranged for the participation of the graduate in paid work experiences.	9	0	0	0	0	9
---	---	---	---	---	---	---

8. You advised local education agency staff to help them determine the accommodations and the assistive technology needed by the graduate while the individual was still in high school, in order to achieve postsecondary education and/or employment goals.	9	0	9	0	0	0
---	---	---	---	---	---	---

9. You arranged for job coaches and other resources needed for the graduate to participate in community-based employment.	9	4	1	0	0	4
---	---	---	---	---	---	---

10. You provided support to the graduate in postsecondary education after exiting high school (for example by providing supports related to transportation, tuition, books, dormitory costs, assistive	9	6	0	0	0	3
--	---	---	---	---	---	---

technology, personal counseling, professional tutoring, job coaching and job development).

11. You provided support to the graduate to participate in vocational training (e.g. by providing supports related to transportation, tuition, books, dormitory costs, assistive technology, personal counseling, professional tutoring, job coaching and job development).	9	3	0	0	2	4
12. You follow-up on the graduate who has moved on to postsecondary education or employment and connect him/her with resources when appropriate.	9	0	0	0	4	5
13. You facilitated placement of the graduate in employment and training prior to high school graduation, with plans for post-graduation follow-up.	9	8	0	1	0	0

Most of the vocational rehabilitation counselors indicated that they “occasionally” (44.4%) or “always or almost always” (44.4%) participated in the transition planning for the graduates before they completed high school. Most of the vocational rehabilitation counselors (77.7%) indicated they “always or almost always” communicated with local education agency personnel to discuss helpful approaches and strategies for the graduates. The majority of the vocational counselors responded in question 3 that they either “frequently” (44.4%) or “always or almost always” (55.5%) provided career counseling and guidance services to the graduates. Most of the vocational counselors indicated that they “frequently” (44.4%) or “always or almost always” (44.4%) participated in supporting the graduates in work-based learning, career and technical

education, and other vocational services. The majority of the counselors pointed out that they “never or almost never” (77.7%) arranged for participation of the graduates in unpaid work experiences, but pointed out that they overwhelmingly “always or almost always” (100%) arranged for paid work experiences for the graduates. In response to question 8, the counselors overwhelmingly indicated that they “occasionally” (100%) advised local education agency staff to help them determine the accommodations and the assistive technology needed by the graduates, while the students were still in high school, in order to achieve postsecondary education and employment goals. On the other hand, if the vocational rehabilitation counselors had been more insistent in this area then it might have prevented the unsuccessful postsecondary outcomes of many of the graduates.

The vocational rehabilitation counselors were at opposite ends of the rating scale when it came to question 9 regarding whether they arranged for job coaches and other resources needed for the graduates to participate in community-based employment. The majority of the counselors either chose “never or almost never” (44.4%) or “always or almost always” (44.4%) for their response to survey question 9. Interestingly, most of the counselors indicated that they “never or almost never” (66.6%) provided support to the graduates to participate in postsecondary education, which is a major responsibility of outside agency representatives. However, most of the vocational rehabilitation counselors indicated that they “always or almost always” (44.4%) provided support to the graduates to participate in vocational training. In response to question 12, the counselors indicated that they follow-up with graduates who move on to postsecondary education or employment and connect them with resources when appropriate “frequently” (44.4%) or “always or almost always” (55.5%), and utilize the follow-up information to assist the graduates as needed. For the last question, the vocational rehabilitation counselors overwhelmingly indicated that they “never or almost never” (88.8%) facilitated placement of the graduates in employment and training prior to high school graduation. Yet, it is typically the responsibility of the high school staff in collaboration with outside agency representatives such as vocational rehabilitation counselors to assist students with employment and training prior to high school graduation.

The closed-ended responses to the vocational rehabilitation counselors’ survey indicated a 23.9% response rating of “never or almost never”, a 15.4% rating of “occasionally”, a 2.6% rating of “half the time”, a 12.8% rating of “frequently”, and a 45.3% rating of “always or almost always”. It is interesting to point out that question 7, which read, “you arranged for the participation of the graduate in paid work experiences,” always received a response rating of 5 meaning that this experience “always or almost always” occurred for the graduates served by the vocational rehabilitation counselors who participated in the survey, therefore, indicating that most of the graduates served by the counselors were exposed to some type of employment opportunities. Nonetheless, the vocational rehabilitation counselors neglected to help many of the graduates secure employment or achieve any other postsecondary aspirations.

Open-ended Responses

The tables below demonstrate the frequent responses to the three open-ended questions on the survey that followed a theme of consistent postsecondary follow-up with the graduates by the vocational rehabilitation counselors. Table 2 demonstrates the responses regarding the role of secondary transition planning on the graduates’ postsecondary outcomes.

Table 2

Vocational Rehabilitation Survey: Role of Secondary Transition Planning on Graduates' Outcomes

Question	Responses
What role do you feel secondary transition planning played in the postsecondary outcomes of the graduate?	Made student self-sufficient Made student confident and determined to succeed Provided many students with unattainable goals Allowed student to accommodate his disability and ask for help when needed

The responses of the vocational rehabilitation counselors regarding the role that they felt the secondary transition plan played in the postsecondary outcomes of the graduates revealed that secondary transition planning successfully provided students with self-determination skills but often provided students with unattainable postsecondary goals.

Table 3 below represents the responses of the vocational rehabilitation counselors regarding postsecondary follow-up.

Table 3

Vocational Rehabilitation Survey: Postsecondary Follow-up

Question	Responses
How do you follow-up with the postsecondary outcomes of the graduate and how do you utilize the follow-up results?	Follow-up annually and use the results to provide guidance based on graduate's needs Lost track of graduate due to the graduate frequently relocating Follow-up every 30-90 days due to her intensive needs

Follow-up with the college student every semester and discuss his progress with him

The data revealed that the vocational rehabilitation counselors consistently follow-up with the graduates with disabilities that they serve and utilize the follow-up results to help the graduates obtain postsecondary success. Yet, there was no mention of utilizing the follow-up data to inform and improve secondary transition planning in collaboration with the high school staff.

Table 4 below presents additional information shared by the vocational rehabilitation counselors.

Table 4

Vocational Rehabilitation Counselor Survey: Additional Information

Question	Responses
Is there any additional information that you would like to share?	The family did not work well with the high school staff
	No

The vocational rehabilitation counselors did not have much additional information to share. However, one of the vocational rehabilitation counselors pointed out that the family of one of the graduates did not collaborate well with the high school teachers when the graduate was in high school which could have influenced the lack of success of the graduate in achieving the intended postsecondary goals.

By way of summary, the responses to the vocational rehabilitation counselor surveys indicated that the agency representatives were split on their involvement in the secondary transition planning process with half responding that they occasionally participated in the transition planning of the graduates and half responding that they always or almost always participated in the transition planning of the graduates. Although federal mandates such as the Individuals with Disabilities Education Act (IDEA, 2004) indicate that agency representatives should be a part of the secondary transition planning process, half of the vocational rehabilitation counselors did not feel like they were a part of that process. The vocational rehabilitation counselors' responses indicated that they felt that they had more of an influence on the postsecondary outcomes of the graduates than on the secondary transition planning process because they became more involved with helping the graduates after high school. Yet, the vocational rehabilitation counselors did point out that the secondary transition planning process made many of the graduates that they worked with more self-sufficient, but the graduates' lack of full cooperation with them played a major influence in their lack of success. One of the vocational rehabilitation counselors stated:

I have been attempting to contact one of the graduates monthly but she relocates

frequently. I keep trying to provide job placement and job coaching services but she will not leave me a forwarding phone number or address, so I try to track her down in the state database.

The research revealed that the adult support system consisting of parents, teachers, administrators, and outside agency representatives responsible for helping students with disabilities can best be described as mostly non-collaborative. Where these influences should come together to make student success as reasonable as possible, the research revealed a lack of communication, a lack of follow-up, and a lack of the adult support system to meet with one another to find common ground that would have better served the students during the secondary and postsecondary transition process. Indeed, the research revealed that students who had outside agency representative support such as that of vocational rehabilitation counselors were not very successful in achieving postsecondary success.

Discussion

Interestingly, the majority of the graduates who reportedly had a vocational rehabilitation counselor were not employed and only two were enrolled in a college or university. This was interesting because research indicates that interagency collaboration during the secondary transition planning process is vital in helping students achieve their postsecondary goals and that students who receive vocational rehabilitation services have improved chances of gaining employment after high school (Kellums & Morningstar, 2010; Neubert et al., 2002; Oertle & Trach, 2007; Williams-Diehm & Lynch, 2007). However, a recent case study involving college students with disabilities suggests that the success of graduates from special education programs is not the result of one type of community agency, but combined efforts with high schools and vocational rehabilitation centers is crucial in leading to positive outcomes for graduates with disabilities (Barber, 2012). The IDEA (2004) also mandates that an agency representative be invited to any IEP meeting in which transition services are being discussed once the student turns 16 years of age. According to the Kohler (1996) taxonomy, interagency collaboration is an important component of the secondary transition planning process in helping students gain postsecondary success. Interestingly, the vocational rehabilitation counselors were split on their involvement in the secondary transition planning meetings of the graduates as to whether they occasionally attended the meetings or always attended the meetings.

Therefore, the answer to research question number one, based on the findings of this study- is that the vocational rehabilitation agency representatives provided the perceived influence that the secondary transition planning process was a mere protocol that rarely involved their input. The findings also revealed that the perceived influences of the vocational rehabilitation counselors regarding the postsecondary outcomes of the graduates were that the graduates were responsible for their own outcomes regardless of how much assistance the counselors provided them. Based on the findings in regard to research question number two, the vocational rehabilitation counselors indicated on nearly half of the surveys that they only “occasionally” took part in the secondary transition planning process thus making it impossible to utilize follow-up data to inform and improve the secondary transition planning process.

Limitations of the Study

Several limitations were associated with this study. Mainly, all of the outside agency representatives were local vocational rehabilitation counselors in which a small staff of counselors served the majority of the graduates who reportedly had outside agency representatives. This meant that many of the surveys were filled out by the same people, which led to some identical survey responses and a very small number of participants. The population that was focused on in this study was very transient and some of the graduates with disabilities from the class of 2011 could not be located to be asked if they had an outside agency representative available to survey. Some of the graduates chosen for the focal point of the study were not United States citizens, which affected their ability to receive services from the vocational rehabilitation counselors after being referred to the counselors. The graduates with disabilities that the study referred to were diagnosed with a wide range of disabilities from mild to severe, which impacted the range of postsecondary possibilities that the vocational rehabilitation counselors could provide for them. Lastly, the study involved graduates with disabilities from a small rural high school which means that it cannot be generalized to other high school graduates that were enrolled in special education.

Implications for Practice

An implication for practice is for improved collaboration during the secondary transition planning process between the adult support system of students receiving special education services to include a variety of outside agency representatives early on during the transition planning process. More collaboration among the adult support system of graduates with disabilities also needs to take place during the postsecondary transition process so that graduates will have more support in achieving their intended postsecondary goals. Schools need to become better at setting the climate for a collaborative environment and ensure that outside agency representatives always take part in secondary IEP transition planning meetings as the federal IDEA (2004) requires. It is critical that the entire adult system involved in the transition of students with disabilities from high school to adult life join together to improve the reprehensible act of what is currently being passed off as transition planning.

Conclusion

The results of the study suggest that the graduates received more assistance from outside agency representatives such as vocational rehabilitation counselors after graduating from high school than they did throughout the secondary transition planning process. This is mainly due to the fact that the high school staff did not appear to have included outside agency representatives in the secondary transition planning process. Nevertheless the majority of the graduates with vocational rehabilitation counselors were unsuccessful in obtaining employment or higher education, which are both major determinants of postsecondary success under the IDEA (2004). According to the National Council on Disability (2011), the current economy has disproportionately contributed to the challenges of graduates with disabilities in securing employment. Therefore, having an outside agency representative such as a vocational rehabilitation counselor does not guarantee postsecondary success. Nevertheless, more collaboration is needed among the adult support system of students with disabilities, which should include parents, teachers of special education, secondary administrators, and outside agency representatives such as vocational rehabilitation counselors, in order to better meet the secondary and postsecondary needs of students with

disabilities.

Until the adult support system of students with disabilities begin to collaborate in order to best serve the needs of the students, postsecondary failures will continue to be an issue for some of the most vulnerable citizens.

References

- Gil, L. (2007). Bridging the transition gap from high school to college. Preparing students with disabilities for a successful postsecondary experience. *Teaching Exceptional Children*, 40(2), 12-15. Retrieved from ERIC database.
- Individuals with Disabilities Education Act, 20 U.S.C. §1416 et seq. (2004).
- Kellems, R., & Morningstar, M. (2010). Tips for transition. *Council for Exceptional Children*, 43(2), 60-68.
- Kohler, P. D. (1996). *Taxonomy for transition programming: Linking research to practice*. Retrieved March 20, 2012, from University of Illinois, Transition Research Institute website <http://vms.cc.wmich.edu/~kohlerp/toc.html>
- Lindstrom, L., Paskey, J., Dickinson, J., Doren, B., Zane, C., & Johnson, P. (2007). Voices from the field: Recommended transition strategies for students and staff. *Journal for Vocational Special Needs Education*, 29(2), 4-15.
- National Council on Disability. (2011). *Technology's Impact on Employment and Opportunities for People with Disabilities*. Washington, DC: Author.
- Neubert, D. A., Moon, M. S., & Grigal, M. (2002). Post-secondary education and transition services for students ages 18-21 with significant disabilities. *Focus on Exceptional Children*, 34(8), 1-9.
- Norman, M., Mueller, P., Bourexis, P., Johnson, D., Timmons, J., Bremer, D., and Dugan, J. (2006). *A national study of transition policies and practices in state vocational rehabilitation agencies*. Retrieved July 28, 2012, from University of Minnesota, Institute of Community Integration website: <http://www.vrtransitionstudy.org/survey.html>
- Oertle, K., & Trach, J. (2007). Interagency collaboration: The importance of rehabilitation professionals' involvement in transition. *Journal of Rehabilitation*, 73(3), 36-44. Retrieved from EBSCO database.
- Test, D. W., Fowler, C. H., White, J., Richter, S., & Walker, A. (2009). Evidence-based secondary transition practices for enhancing school completion. *Exceptionality*, 17, 16-29. Doi:10.1080/09362830802590144
- Williams-Diehm, K. L., & Lynch, P. S. (2007). Student knowledge and perceptions of individual transition planning and its process. *The Journal for Vocational Special Needs Education*, 29(3), 13-21.

About the Author

Vickie Miller-Warren, Ed.D currently works as a public school special education program specialist in North Carolina. Her research interests include secondary and postsecondary transition for students with disabilities.

Gender Differences in Emotional or Behavioral Problems in Elementary School Students

Amanda Malfitano

Abstract

The purpose of this study was to look at teachers' perceptions of challenging behaviors in the classroom, including students who had emotional or behavioral disorders and students who were at-risk for developing these problems. In the format of the survey, teachers were asked to consider the behaviors of their students in respect to gender. For male externalized behaviors, the strongest support was for students who lose their tempers during the school day. Regarding internalized behaviors, a majority of participants believed that both males and females seem to be withdrawn during lessons and activities. Teachers were asked to reflect on the screening and identification process as well as on ways to accommodate students. Based on the participants' responses, there was support for reexamining how students were identified, revealing the necessity for gender-based procedures. The survey also suggested that there was a need for gender-based considerations for working with students.

Gender Differences in Emotional or Behavioral Problems in Elementary School Students

One of the most compelling issues in special education today is the number of identified males and females who receive special education. It is almost common knowledge, as noted in much education literature, that there are higher numbers of males identified in comparison to females. One of the disability types or categories that receive the most attention in regard to this dilemma is the category of emotional or behavioral disorders, in which the population of males with emotional or behavioral problems outnumbers females (Taylor, Smiley, & Richards, 2009). On the surface, this appears feasible, that perhaps there is a genetic link that could cause such a pattern in the ratio of males to females. However, the value of this data becomes more important as one considers the factors that could contribute to these numbers. Most interestingly, research supports the notion that males tend to have externalized disorders, including antisocial habits and aggressive tendencies, whereas females typically exhibit disorders that are internalized, such as being anxious or depressed (Romano, Tremblay, Vitaro, Zoccolillo, & Pagnani, 2001; Sachs-Ericsson & Ciarlo, 2000). These implications may seem logical, considering what is known about the nature of males and females. If male students tend to exhibit more externalized behaviors than female students, then perhaps these behaviors are more visible in the classroom (Taylor et al., 2009).

The rationale of this study was to inform a larger question: are there gender differences in the way teachers perceive behavior in students who have emotional or behavioral problems or who are at-risk for developing these problems? The purpose of the research was to investigate whether teachers perceived specific classroom behaviors that they found to be more common in males than females, or vice versa. It was important to consider the basis for this perception, which has influenced the need for further research in this category.

Taking into account the ratio of males to females with emotional or behavioral disorders and the types of externalized and internalized behavior problems, it was necessary to examine or determine the identification and support provided these students, with respect to gender. It was also imperative to consider screening procedures used to identify students with emotional or behavioral disorders. Additionally, the overrepresentation, underrepresentation, and misrepresentation of certain students with emotional or behavioral problems or students exhibiting at-risk behaviors were important aspects or variables to consider. It was also valuable to study the behaviors of these students and the types of supports and strategies used, with respect to gender.

In this study, the researcher used a questionnaire, in which special education teachers, general education teachers and other certified professionals in an elementary school setting were surveyed about their perceptions of the atypical or aberrant behaviors of their students. The survey included four parts, the first of which asked for general teacher information, such as gender and years teaching. The second part required respondents to consider typical challenging and disruptive classroom behaviors of male and female students. The third part reflected the screening and identification processes for emotional or behavioral problems. Lastly, the fourth part identified considerations for addressing male and female student behaviors. The following literature review provides a historical basis for the dilemma, establishes the need for the current study and explains the typical types of behaviors, screening and identification procedures used in establishing the presence of emotional or behavioral disorders, the demographics of students with emotional or behavioral problems, and the considerations that should be taken into account when working with male and female students who exhibit behavioral disorders.

Externalizing and Internalizing Behaviors

When discussing externalizing behaviors and internalizing behaviors, it is important to define the concepts as they appear in literature. Externalizing behaviors can be described as including “antisocial behavior, fighting, and high activity levels” (Young, Sabbah, Young, Reiser, & Richardson, 2010, p. 226). In contrast, internalizing behaviors contain “anxiety, shyness, withdrawal, hypersensitivity, and physical complaints” (Young et al., 2010, p. 226). Another example suggests that internalizing disorders can include anxiety and depressive disorders, while externalizing disorders can include Conduct Disorder (CD), Oppositional Defiant Disorder (ODD) and Attention-Deficit Hyperactivity Disorder (ADHD) (Romano et al., 2001). According to a different study, students with emotional disturbance are described in a similar manner: internalizing behavior may mean that a student is “shy, anxious, depressed and withdrawn” (Rice & Yen, 2010, p. 601). Students with externalized behavior may be “noncompliant, defiant, coercive, and aggressive” (Rice & Yen, 2010, p. 601).

Screening Procedures and Identification

While considering the factors that contribute to identifying the need for special education, the screening procedure is immensely important and can reveal significant data about the process itself. Before students are identified as having disabilities, they usually qualify based on certain screening procedures. As recently as 2010, there have been reservations about the screening process in schools. In fact, the different measures used to screen adolescents for emotional or behavioral problems are still controversial, as these processes are still being assessed (Young et al., 2010). Researchers are still evaluating the validity of screening instruments for adolescents

(Caldarella, Young, Richardson, Young, & Young, 2008). Despite the controversies about the screening processes, there is not much information about how screening affects males and females respectively. However, there is one piece of evidence that provides interesting insight into the high number of men who are considered at-risk for emotional or behavioral problems or issues. Using a Systematic Screening for Behavior Disorders (SSBD), within a sample of 15,932 participants, “The average ratio (across the 3 years) of males to females nominated was [found to be] approximately 5:1 for externalizing behaviors, 2:1 for internalizing behaviors, and 3:1 for total students nominated” (Young et.al, 2010, p. 230). At a glance, these numbers may seem to indicate strong support for the notion that there are a high number of males who are at-risk compared to females; however, the authors of the study propose quite the opposite. The authors suggest that these numbers contribute to the dilemma about the overrepresentation of males. In one respect, teachers may notice these types of behaviors more frequently. It is also possible that the behaviors seen in a school setting are limited to the scope of a child’s behavioral problems (Young et al., 2010). Regardless, research supports the presence of gender disproportionality for males with serious emotional disturbance, which is a national concern (Coutinho & Oswald, 2005).

At the second level of positive behavior support, it is estimated that 10% to 15% of students in one school setting may be in danger of developing substantial problems that can be emotional, behavioral, and/or academic (Walker, Cheney, Stage, & Blum, 2005). Cumulative prevalence of students with emotional or behavioral disorders reveals additional information about the difficulties in identifying students properly. Certain factors, such as under-identification, misidentification and underservice, seem to influence which children are eligible for services (Forness, Freeman, Paparella, Kauffman, & Walker, 2012). Specifically, gender is a factor for females who are often considered to be under-identified, especially when taking into consideration the much greater number of males who are identified (Forness et al., 2012). Further, general education teachers and administrators may not recognize the true problems behind home behaviors. For instance, a student who has externalized behaviors may be recommended to improve his discipline, when in reality the student suffers from ADHD (Walter, Gouze, & Lim, 2006). Quite similarly, depression or anxiety may be misidentified as difficulty with learning (Forness et al., 2012).

Demographics of Males and Females with Emotional or Behavioral Problems

Emotional or behavioral problems reflect “gender-specific disorders” (Sachs-Ericsson & Ciarlo, 2000, p. 622). Females tend to have a great incidence of disorders that are rooted in anxiety and depression, whereas males tend to have antisocial behavior and abuse substances more readily (Sachs-Ericsson & Ciarlo, 2000). The incidence of internalized problems or disorders is very complex in respect to both genders, but research supports the notion that females are considered to be more susceptible to developing internalized disorders if they do not perceive themselves as being attractive amongst their peers (Hoftmann, Powhshta, & White, 2004).

It is extremely important to note that the demographics of gender and behavior are not limited to culture. A Dutch study that sampled adolescent twins and their non-twin siblings from the ages of 12 to 20 found age and sex to be important when taking into account emotional or behavioral problems. The rate of females with internalized problems was found to be greater, especially for certain areas within internalized symptoms: anxiety/depressed, withdrawn/depressed and somatic

complaints. Quite differently, males receive high scores for externalized behavior, especially in the area of breaking rules (Bartels, van de Aa, van Beijsterveldt, Middeldorp, & Boomsma, 2011). Despite the age of the Dutch adolescents mentioned, there are similarities seen in the international demographics of preschool children, based on parent reports from 24 societies. Compelling data reveals the gender of preschoolers with externalized and internalized problems. Internalizing and externalizing, along with additional scales used in the study, reveal more variation within a country than between countries. In relation to externalized behaviors, females and children who are older had lower scores than males and children who are younger (Rescorla et al., 2011).

When looking at the demographics and numbers of males and females identified with specific emotional or behavioral problems, the question of genetic influence is important to consider. Compelling information suggests that children's behavior may be influenced by a mother who has a history of depression. A recent study found support that a mother's history of depression can influence the proportion of internalized and externalized problems in males and females, showing that no one gender has a greater chance of developing either type of problem. There has been data supporting the idea that a mother's history of depression may reverse the typical stereotype of male and female behaviors and that a greater proportion of males externalize their problem behaviors (Watson, Potts, Hardcastle, Forehand, & Compas, 2012).

Considerations for Females with Emotional or Behavioral Problems

Despite differences in externalized and internalized disorders, there are more males than females who are identified with emotional disturbance and learning disabilities (Cullinan, Osborne, & Epstein, 2004). In certain instances, the larger number of males who are classified and receiving services in special education may imply that females are hidden because they are not as prevalent in the numbers of special education students (Osler & Vincent, 2003). Based on these numbers, it appears as though there is a need to look at behaviors as they typify in women. Research based on physiological and environmental components indicates that females may be under-identified for emotional disturbance and that there is not much information in the field that explains developmental differences that may occur in students with emotional disturbance (Callahan, 1994). Research suggests that females with serious emotional disturbance did not meet the criteria in public schools, but their behaviors were so critical that they attended private psychiatric hospitals for assistance (Caseau & Lackasson, 1994).

Unfortunately, the needs of females with emotional or behavioral disabilities can only be located in six publications that span from 1997 to 2006 (Rice, Merves, & Srsic, 2008). The acknowledgement of these problems is not limited to one specific culture, as indicated by a study that interviewed girls living in England who are considered to have struggles that are categorized as behavioral, emotional and social (Clarke, Boorman, & Nind, 2011). According to the research, girls are given a voice by allowing them to speak their minds in a diary room, which records their behaviors and thoughts (Clarke et al., 2011, p. 769). The study underscores the importance of giving females a chance to speak out instead of allowing other professionals to be more vocal about their behaviors (Clarke et al., 2011).

In exploring the differences between the genders, there is a definite need to improve the diagnoses for females, while providing proper support for these students based on their unique

needs. In light of the limited information about females with emotional or behavioral disabilities, research done in the format of semi-structured interviews with professionals provides interesting examples about instruction based on gender (Rice et al., 2008). The study suggests the following characteristics are more typical of girls with emotional or behavioral disabilities: having struggles that are not as noticeable but are more aggressive when expressed, being removed from others, and behaving much more aggressively when physical and not forming as many relationships with others (Rice et al., 2008). However, despite the unique characteristics appearing in females, research supports the notion that when gender is controlled, there is no direct correlation between gender and whether symptoms are externalized; neither females nor males have a greater risk of developing externalized symptoms if both genders are equally communicative. Although gender roles and internalized symptoms can be controlled, females continue to be more at-risk for having internalized disorders (Hoffman et al., 2004).

Considerations for Males with Emotional or Behavioral Problems

The Individuals with Disabilities Education Act (IDEA, 2004) definition of emotional or behavioral disorders is rather ambiguous in its usage of terms, such as the gravity of the behaviors and the length of time that they are present in a student, which makes the classification of students with emotional or behavioral disorders quite subjective (Serpell, Hayling, Stevenson, & Kern, 2009). The vagueness in the definition of emotional disturbance can be identified when examining the terminology used in the federal definition:

Emotional disturbance means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance:

- (A) An inability to learn that cannot be explained by intellectual, sensory, or health factors.*
- (B) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.*
- (C) Inappropriate types of behavior or feelings under normal circumstances.*
- (D) A general pervasive mood of unhappiness or depression.*
- (E) A tendency to develop physical symptoms or fears associated with personal or school problems (IDEA, 2004).*

One must wonder if the ambiguity of the definition itself can affect the rate of students classified, showing an overrepresentation in males or in certain cases perhaps an under-identification in males. This definition is pivotal in looking at the numbers of males and females identified or considered to be at-risk for emotional or behavioral problems.

Emotional disturbance in males, especially in serious cases, has a relation to social conflict, including in the development of aggressive tendencies, interference and additional issues that may result in conflict with others (Sabornie, Cullinan, & Epstein, 1993). However, more recently, there has been some dispute about the methods of identifying students with behavior disorders, and whether there is a need to take gender into consideration in determining if students should receive supports and services. In a study that examines a birth cohort of just under 1,000 New Zealand-born persons, there was little data supporting developmental differences in respect

to gender with students who have CD, ODD and ADHD (Fergusson, Boden, & Horwood, 2010). These three disorders certainly connect to aspects of social conflict.

In terms of culture and race, there is compelling research about the behaviors of nonwhite and white male students with emotional or behavioral disorders. Research supports the belief that nonwhite males with emotional disturbance experience more social conflict than white males with emotional disturbance (Achenbach & Edelbrock, 1986). In an effort to reform aspects of education, research supports the need to take into consideration culture when identifying African-American adolescent males with emotional or behavioral disorders. Based on additional research, cultural considerations should be taken into account for types of interventions, assessments and placement of students. Specific recommendations that can improve the outcome for African-American male students include strengthening relations between teachers and students (especially when there are cultural differences), creating assessments that respect culture, collaborating with students' families and placing an emphasis on mental health across the field of education (Serpell et al., 2009).

The emphasis on mental health is not limited to African-American males; it could be seen as an important intervention used for both males and females. In a study that implements an Intensive Mental Health Program (IMHP) for 50 students (42 males and 8 females) who experience serious emotional disturbance, 84% of the students in the study benefit from the intervention (Vernberg, Jacobs, Nyre, Puddy, & Roberts, 2004). Although this study includes both males and females, the proportion of males to females is much higher, which is why it is imperative to consider how male students may benefit from these types of interventions. Certain aspects of the IMHP include keeping children at their respective homes and schools, using evidence-based interventions, teaching cognitive and behavioral skills, helping students make connections across various settings and helping students learn to generalize skills (Vernberg et al., 2004).

Study Rationale

All five categories explored in this section provide a basis for this study. At least one other study has discussed behavior and the types of internalizing and externalizing symptoms, noting that internalizing behavior includes anxiety and withdrawal, while externalizing behavior includes defiance and aggression (Rice & Yen, 2010). When crafting this study, an intention was to gather more information about classroom behaviors in asking teachers about their perceptions of male and female student behaviors. Equally important in this study was the need to consider the screening and identification procedures used in schools today. In fact, research supports the notion that screening instruments result in an over-identification of males with emotional or behavioral problems. These instruments are also limited to the school setting, not taking into account a child's behaviors in other areas outside of school (Young et al., 2010). In this study, asking teachers about their perceptions of over-identification and under-identification based on gender provided additional points of view regarding this dilemma. Other studies have focused on age and sex in relation to types of behaviors, noting gender differences in certain areas related to internalizing and externalizing problems (Bartels et al., 2011). In light of these dilemmas in education, the considerations for students based on gender also became pivotal to examine. Research suggests that females with behavioral, emotional or social struggles may benefit from speaking about their feelings (Clarke et al., 2011). On the other hand, there is an emphasis on culture and the need to accommodate African-American males with emotional or behavioral

disorders (Serpell et al., 2009). In the next section, information about the method used to conduct the study is explained.

Method

Participants

The respondents of this study were randomly selected from an elementary school in a culturally and economically diverse area. In this school, students come from various homes where many parents do not have the free time or finances to be as involved in their students' lives as they might like to be. The school is known to have a high population of students who are either at-risk for developing emotional or behavioral problems or who have emotional or behavioral disorders. On average, in kindergarten through grade three, there are four to five students per classroom who are at-risk for developing emotional or behavioral problems. In grades four through six, the number of at-risk students decreases to two per classroom, but these select students often exhibit more aggressive behaviors as they get older. With the knowledge that most teachers service students who are at-risk for developing emotional or behavioral problems or who are diagnosed with emotional or behavioral disorders, the population of teachers became an important consideration for collecting data.

At the conclusion of the survey period, more specific information about the participants' background was revealed; this was the content of the first part of the survey. For item one, regarding certifications that the teachers obtained, 28.6% of the respondents were certified in general education, 14.3% were certified in special education, 42.9% were certified in general and special education and 14.3% had certifications that were not listed. For item two, the certifications in which the participants were employed at the time of the survey, revealed that 28.6% were general education teachers, 57.1% were special education teachers and 14.3% were teachers in other certification domains. The years of teaching experience, which was item three, indicated that the teachers had between six and 20 years of teaching experience. Gender of the respondents, item four, indicated that 100% of the participants were female. Item number five asked if teachers had experience working with students who had emotional or behavioral problems, to which 85.7% of the participants responded yes and 14.3% responded no. Lastly, item six (which was only for the teachers who responded yes to the previous item) recorded the years or months that respondents had experience working with students who had emotional or behavioral problems. Certain participants had several years of experience working with this population, ranging from 5 to 20 years. Only one participant had no more than two months of experience working with students who had emotional or behavioral problems.

Procedures

In conducting this study, a survey was determined to be the most appropriate way to assess teachers' perceptions of behavior. The survey went through many revisions and at one point was only going to be used for special education teachers; however, it was expanded to be appropriate for all teachers who service students. The topic of the survey was expanded to include challenging student behaviors in the classroom. In the final revision of the survey, the language was revised and several sections were established (see Appendix A, p. 32). The language of the survey, specifically for each item, was crafted in a very specific way so that teachers were not asked to be diagnosticians, but were instead asked to give their input about the types of challenging behaviors that they saw in the classroom.

In developing the sections, certain items were crafted based on the logic and experience of the researcher; however, there were several items based on research. The first section asked for teacher information, such as teacher certification and years of experience working with students who had emotional or behavioral problems. The second, third and fourth parts of the survey required teachers to rate their agreement or disagreement with each item. There were five different responses to select: strongly agree, agree, disagree, strongly disagree or unsure. The second section of the survey identified types of challenging behaviors. The first and second groups included externalized symptoms for males and females. The third and fourth groups contained items for internalized symptoms for males and females. Certain types of items used for externalized symptoms included breaking class rules, arguing with the teacher and being physically aggressive. The externalizing behaviors included in items 11, 12, 17 and 18 were based on the research of Rice and Yen (2010). Items for internalized symptoms included having anxiety, worrying when completing school assignments and appearing fatigued. Items 19, 22, 23, 25, 28 and 29 were internalized symptoms based on the research of both Rice and Yen (2010) and Young, Sabbah, Young, Reiser, and Richardson (2010). The third section took into consideration the screening procedures and types of identification, such as overrepresentation and underrepresentation of males and females with emotional or behavioral problems. Within this section, items 31, 32 and 37 were based on the research of Young et al. (2010). Items 33 through 36 were based on the work of Forness, Freeman, Paparella, Kauffman, and Walker (2012). Lastly, the fourth section included considerations for students, such as strategies used for females and males with emotional or behavioral problems. Most of the items in this section were based on the logic and experience of the researcher, specifically items 38 through 40. Item 41, a strategy for working with female students, was based on the research of Clarke, Boorman, and Nind (2011).

After the survey was constructed, the researcher wanted to ensure that the survey was both reliable and valid. In order to test for reliability, three people completed the survey once, and on the very next day, they were asked to complete it a second time – without looking at their answers from the previous day. For each participant, the survey taken the first day was compared to the survey taken on the second day, looking at the differences between both versions. Out of the three people who participated, there was a 4.9% difference, a 7.31% difference and a 21.95% difference, in respect to each of the three participants. Although the last difference was rather large, the survey met the reliability requirements based on the first two results. The research also tested for validity, where an expert reviewed the survey to assess the face validity and found that the survey met this requirement.

The survey was placed online, at Survey Monkey, which was determined to be a confidential and anonymous way to provide the survey to participants. At Survey Monkey's website, a hyperlink to the survey was created. A disseminator in the elementary school agreed to send the survey off of her email server to the randomly identified participants in the school, ensuring that the researcher would have no knowledge of the participants' identities. In the email sent to the participants, a brief message about the purpose of the survey was provided. Participants were notified that their participation was voluntary and that their responses were confidential, as Survey Monkey does not report IP addresses. Once the disseminator sent the survey to the randomly identified participants, they had one week and two days to complete it.

Data Collection and Analysis

Survey Monkey collected the data online, allowing the participants to complete the survey in any location where they felt comfortable. The survey was open for about one week, starting on a Friday and ending on a Sunday. After this point, the researcher closed the survey. The website provided aggregated results, reporting the raw scores and converting them into percentages. Based on the results, the researcher was able to look at the items and analyze the data by using the provided percentages. In the section that follows, the results of the survey are reported and described, based on the three significant sections of the survey.

Results

Challenging Student Behaviors

The first part of the survey asked for teacher information. All of the respondents were females and many of the teachers had several years of experience working with students who had emotional or behavioral problems. In total, there were seven respondents who completed the entire survey. These participants reported their level of agreement or disagreement relative to each statement; specifically, they reported their agreement in relation to specific male and female students in their classes. The second section of the survey focused on challenging behaviors in the classroom. Section two was broken up into four areas: males with externalized symptoms, females with externalized symptoms, males with internalized symptoms and females with internalized symptoms. For item seven, regarding the statement that male students break class rules, 71.5% of participants strongly agreed or agreed, 14.3% strongly disagreed and 14.3% were unsure. Some male students argue with the teacher, item eight, indicated that 71.5% of the respondents strongly agreed or agreed, 14.3% strongly disagreed and 14.3% were unsure. Item nine is represented below in Table 1, regarding the statement that some male students lose their tempers during the school day. For this item, 83.3% of the participants strongly agreed or agreed, while 16.7% strongly disagreed. Regarding item 10, some male students annoy classmates, 71.5% of the respondents strongly agreed or agreed, 14.3% disagreed and 14.3% were unsure. Next, in item 11, which stated that some male students are verbally aggressive, 57.2% of the participants strongly agreed or agreed, 28.6% disagreed and 14.3% were unsure. Some male students are physically aggressive, item 12, showed that 42.9% of the respondents strongly agreed or agreed, 42.9% strongly disagreed or disagreed and 14.3% were unsure.

Table 1. Item 9: Some of my male students lose their tempers during the school day.				
Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
33.3%	50.0%	0.0%	16.7%	0.0%

Item 13 began with the female externalized symptoms, starting with the statement that some female students break class rules, to which 71.5% of the respondents strongly agreed or agreed, 14.3% disagreed and 14.3% were unsure. In relation to item 14, the statement that some female students argue with teachers, 71.5% of the participants strongly agreed or agreed, 14.3% disagreed and 14.3% were unsure. Regarding item 15, some female students lose their tempers during the school day, 71.4% of the respondents strongly agreed or agreed, while 28.6% disagreed. In item 16, some female students annoy classmates, 57.2% of the participants strongly agreed or agreed, whereas 42.9% disagreed. Some female students are verbally aggressive, item 17, showed that 60% of the respondents strongly agreed or agreed, meanwhile 40% disagreed.

Item 18, some female students are physically aggressive, resulted in 71.4% of the participants strongly agreeing or agreeing; however, 28.6% disagreed.

Internalized symptoms for males began with item 19 and ended with item 24. For item 19, some male students seem to be anxious during daily school routines, 42.9% of the respondents strongly agreed or agreed, 28.6% disagreed and 28.6% were unsure. In relation to item 20, some male students seem to worry when asked to complete school assignments, 33.3% of participants agreed, while 66.7% disagreed or strongly disagreed. Some male students seem to be fatigued during the school day, item 21, revealed that 57.2% of the respondents strongly agreed or agreed, whereas 42.9% disagreed or strongly disagreed. Regarding item 22, some male students seem to be withdrawn during lessons and activities, 83.3% of the participants strongly agreed or agreed; however, 16.7% disagreed. The next statement, item 23, some male students seem to be shy when interacting with classmates, showed that 14.3% of the respondents agreed, meanwhile 85.7% disagreed or strongly disagreed. The last item for males was item 24: some male students seem to be sensitive to teacher recommendation. For item 24, 57.2% of the participants strongly agreed or agreed, in contrast with the 42.9% who disagreed or strongly disagreed.

The first statement for female students, item 25, was for some students who seem to be anxious during daily school routines, revealing that 57.2% of the respondents strongly agreed or agreed, 14.3% disagreed and 28.6% were unsure. Item 26, some female students seem to worry when asked to complete school assignments, resulted in 71.4% of the participants strongly agreeing or agreeing, while 28.6% disagreed or strongly disagreed. Some female students seem to be fatigued during the school day, item 27, revealed that 28.6% of the respondents agreed and 71.4% disagreed. Item 28 is represented below in Table 2, concerning the statement that some female students seem to be withdrawn during lessons and activities. For item 28, 85.7% of the participants agreed, whereas 14.3% strongly disagreed. Regarding item 29, some female students seem to be shy when interacting with classmates, 71.4% of the respondents agreed; however, 28.6% disagreed. Item 30, which was the last item for female internalized symptoms, some female students seem to be sensitive to teacher recommendations, revealed that 71.4% of respondents agreed, while 28.6% disagreed.

Table 2. Item 28: Some of my female students seem to be withdrawn during lessons and activities.				
Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
0.0%	85.7%	0.0%	14.3%	0.0%

Section three, based on screening procedures and identification, was seven items long, from item 31 to item 37. In a similar manner to the previous section, these statements were crafted for select male and female students that the teachers had seen in their classrooms. For item 31, the statement that there seem to be more male students with emotional or behavioral problems, 71.4% of the participants strongly agreed or agreed, 14.3% disagreed and 14.3% were unsure. The statement for item 32, that there seem to be more female students with emotional or behavioral problems in participants' classes, revealed that 14.3% of respondents agreed, whereas 85.7% disagreed or strongly disagreed. In item 33, the statement that there seems to be an overrepresentation of male students with emotional or behavioral problems in respondents' classes, 57.2% strongly agreed or agreed, 28.6% disagreed and 14.3% were unsure. There seems to be an overrepresentation of female students with emotional or behavioral problems in

participants' classes, the statement for item 34, showed that 28.6% of respondents strongly agreed or agreed, while 71.5% disagreed or strongly disagreed. Item 35 can be found below in Table 3, which stated that there seems to be an underrepresentation of male students with emotional or behavioral problems in respondents' classes. For item 35, 100% of participants' disagreed or strongly disagreed. Regarding item 36, the statement that there seems to be an underrepresentation of female students with emotional or behavioral problems in respondents' classes, 14.3% of the participants agreed, 71.5% disagreed or strongly disagreed and 14.3% were unsure. The statement that male behaviors seem to be more noticeable than female behaviors in participants' classes, item 37, revealed that 71.5% of respondents strongly agreed or agreed, 14.3% strongly disagreed and 14.3% were unsure.

Table 3. Item 35: There seems to be an underrepresentation of male students with emotional or behavioral problems in my class.				
Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
0.0%	0.0%	28.6%	71.4%	0.0%

The remainder of the survey, items 38 to 41, marked the final section, which took into consideration participants' opinions of the ways in which they worked or could work with male and female students in their classes. Item 38, regarding how strongly participants believed in the need to study behaviors that appear more frequently in males, indicated that 71.4% of respondents agreed, 14.3% disagreed and 14.3% were unsure. In a similar manner, item 39 required participants to level the need for more research to study behaviors that appear more frequently in females, to which 71.4% respondents agreed, 14.3% disagreed and 14.3% were unsure. Item 40 is represented below in Table 4, regarding the statement that there are specific strategies, such as positive reinforcement, that can help males with emotional or behavioral problems. Item 40 revealed that 85.8% of participants strongly agreed or agreed, whereas 14.3% disagreed. Lastly, item 40, which is portrayed below in Table 5, stated that there are specific strategies, such as allowing students to speak about their feelings, which can help females with emotional or behavioral problems. Item 40 resulted in 85.8% of respondents strongly agreeing or agreeing, while 14.3% strongly disagreed. The next section, the conclusion, contains the discussions, limitations and recommendations for future research.

Table 4. Item 40: There are specific strategies, such as positive reinforcement, that can help males with emotional or behavioral problems.				
Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
42.9%	42.9%	14.3%	0.0%	0.0%

Table 5. Item 41: There are specific strategies, such as allowing students to speak about their feelings, that can help females with emotional or behavioral problems.				
Strongly Agree	Agree	Disagree	Strongly Disagree	Unsure
42.9%	42.9%	0.0%	14.3%	0.0%

For the second part of the survey, externalizing and internalizing symptoms, many of the results did not reveal much significant information. However, item nine, the statement that some male students lose their tempers during the school day, indicated that 83.3% of participants believed that this item was true of their students. The teachers' responses to item nine were significant in implying that some male students had trouble regulating their tempers in the classroom.

Item nine was valuable because it represented one of the externalized symptoms of ODD, as described in the *Diagnostic and statistical manual of mental disorders* (DSM-IV-TR) (American Psychiatric Association, 2000). Although the population of students taken into consideration for this survey may or may not have been classified, the link to ODD was crucial to mention, depending on the severity of these behaviors. In learning about antecedents and providing teachers with target behaviors, teachers could become better prepared to work with male students who display these behaviors, adopting specific strategies to regulate the male students' tempers.

Two of the items for internalizing symptoms for males and females revealed very compelling information. Items 22 and 28 were similar, as they were based on male and female withdrawal during lessons and activities. Both of these items supported both male and female students exhibiting these symptoms: 83.3% for males and 85.7% for females, regarding teachers who strongly agreed or agreed. This information was valuable because it implied that teachers should look at the whole student, rather than targeting only externalizing or internalizing symptoms specifically. These items also provided support for the notion that withdrawal may not be a gender-specific indicator. For this reason, a cause for withdrawal should be studied on an individual basis when working with a student who displays these types of behaviors, especially when taking into consideration students who come from economically and culturally diverse backgrounds.

The most valuable information from this study came from the third section of the survey, particularly items 32 and 35. These items were related in the sense that they questioned the screening and identification procedures used in schools. Item 32 indicated that 85.7% of participants disagreed or strongly disagreed that there seem to be more female students with emotional or behavioral problems in their classes. Very similarly, item 35 showed that 100% of respondents disagreed or strongly disagreed that there seems to be an underrepresentation of male students with emotional or behavioral problems in their classes. These items were related because they implied that there were more male than female students who displayed emotional or behavioral problems that were noticed in the classroom. Item 32 implied that female students were not a majority in participants' classes, while item 35 indicated that many males who had emotional or behavioral problems were identified, providing these students with the interventions that they needed to succeed. Both of these items were significant because they supported the need to reexamine the types of screening and identification procedures used in schools. However, this does not mean that females should outnumber males; rather, it implies that females should be given equal opportunity to be identified and provided with services. Similarly, it may be possible that male students are targeted more frequently because their behaviors are more noticeable.

The final section of the survey aimed to synthesize the content of the sections prior, taking into consideration how to work with specific male and female students. Item 40, which stated that positive reinforcement can help male students, revealed that 85.8% of respondents believed that this was a valuable tool. Similarly, 85.8% of respondents believed that allowing female students to talk about their feelings can be helpful. Such strong support for both gender-specific interventions was pivotal, implying gender did matter when selecting interventions. These items provided support for teachers not only examining the unique behaviors of the student, but also the gender and personality of the student before selecting what might be the most appropriate strategy. For instance, positive reinforcement could be very useful for certain male students, but perhaps a female student would benefit from a strategy that targeted her gender and type of behavior.

In examining the study, a limitation was the small number of respondents. The results would have been strengthened if more participants responded to the survey. Although the survey was sent to many teachers, several of them did not respond, as doing so was voluntary.

Recommendations

Based on the results of this study, there are several recommendations for future research in the field of education. Using teachers as a population for a survey about students with emotional or behavioral problems was and will continue to be very practical, as they were and are in constant contact with students. Another suggestion might be to survey special education teachers who work in culturally and economically diverse areas. In this way, the teachers could participate in a similar survey, intended to gather data about their perceptions of gender specific behaviors as well as successful strategies used in the classroom. In this way a greater number of schools could be included with similar demographics. Including more schools may also increase the number of respondents.

Another very important suggestion might be to further evaluate the types of screening and identification procedures. Additional research might look at the ways that females and males respond to the same types of instruments used to identify students. Similarly, if there are gender specific instruments used in certain locations, it might be helpful to test the validity of these instruments at large. In doing so, it is hoped that a clear and concise way of identifying students might develop, tightening the number of males identified and giving females a greater chance of receiving services.

A final suggestion for further research might be to look at additional gender-specific strategies that might be useful for students with emotional or behavioral problems. The research from this study did reveal that teachers believed in certain interventions that worked well with male and female students. Researching the strategies that exist and other possible options may provide teachers with more material that they can use when they work with students.

This study was valuable as a means of understanding gender differences through teachers' perceptions of challenging student behaviors. The study suggested student withdrawal may not be gender-specific and that the whole student should be considered, not just the behaviors. Additionally, the study provided support for the need to reexamine screening and identification

procedures in an effort to give females equal opportunity for identification. Lastly, the study suggested that gender and personality should be carefully considered when selecting interventions and strategies for working with students.

References

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- Achenbach, T. M., & Edelbrock, C. (1986). *Manual for the teacher's report form and teacher version of the child behavior profile*. Burlington, VT: University of Vermont.
- Bartels, M., van, d. A., van Beijsterveldt, Catherina E. M., Middeldorp, C. M., & Boomsma, D. I. (2011). Adolescent self-report of emotional and behavioral problems: Interactions of genetic factors with sex and age. *Journal of the Canadian Academy of Child & Adolescent Psychiatry*, 20(1), 35-52. Retrieved from <http://www.cacap-acpea.org>
- Caldarella, P., Young, E. L., Richardson, M. J., Young, B. J., & Young, K. R. (2008). Validation of the systematic screening for behavior disorders in middle and junior high school. *Journal of Emotional & Behavioral Disorders*, 16(2), 105-117. Retrieved from <http://www.proedinc.com/customer/content.aspx?redid=22>
- Callahan, K. (1994). Wherefore art thou, Juliet? Causes and implications of the male dominated sex ratio in programs. *Education & Treatment of Children (ETC)*, 17(3), 228. Retrieved from <http://www.educationandtreatmentofchildren.net/>
- Caseau, D. L., Lackasson, R. (1994). Special education services for girls with serious emotional disturbance: A case for gender bias? *Behavioral Disorders*, 20(1), 51-60. Retrieved from <http://www.ccbd.net/publication/behavioraldisorders>
- Clarke, G., Boorman, G., & Nind, M. (2011). 'If they don't listen I shout, and when I shout they listen': Hearing the voices of girls with behavioural, emotional and social difficulties. *British Educational Research Journal*, 37(5), 765-780. doi: 10.1080/01411926.2010.492850
- Coutinho, M. J., Oswald, D. P. (2005). State variation in gender disproportionality in special education: Findings and recommendations. *Remedial & Special Education*, 26(1), 7-15. doi:10.1177/07419325050260010201
- Cullinan, D., Osborne, S., & Epstein, M. H. (2004). Characteristics of emotional disturbance among female students. *Remedial & Special Education*, 25(5), 276-290. doi:10.1177/07419325040250050201
- Fergusson, D. M., Boden, J. M., & Horwood, L. J. (2010). Classification of behavior disorders in adolescence: Scaling methods, predictive validity, and gender differences. *Journal of Abnormal Psychology*, 119(4), 699-712. doi: 10.1037/a0018610
- Forness, S. R., Freeman, S. F. N., Paparella, T., Kauffman, J. M., & Walker, H. M. (2012). Special education implications of point and cumulative prevalence for children with emotional or behavioral disorders. *Journal of Emotional & Behavioral Disorders*, 20(1), 4-18. doi: 10.1177/1063426611401624
- Hoftmann, M. L., Powhshta, K. K., & White, K. J. (2004). An examination of gender differences in adolescent adjustment: The effect of competence on gender role differences in symptoms of psychopathology. *Sex Roles*, 50(11), 795-810. Retrieved from <http://www.springerlink.com/content/0360-0025/>
- Individuals With Disabilities Education Act, 20 U.S.C. § 1400 (2004).

- Osler, A. & Vincent, K. (2003) *Girls and exclusion: Rethinking the agenda*. London, England: Routledge Falmer.
- Rescorla, L. A., Achenbach, T. M., Ivanova, M. Y., Harder, V. S., Otten, L., Bilenberg, N., . . . Verhulst, F. C. (2011). International comparisons of behavioral and emotional problems in preschool children: Parents' reports from 24 societies. *Journal of Clinical Child and Adolescent Psychology*, 40(3), 456-467. doi:10.1080/15374416.2011.563472
- Rice, E. H., & Cherng-Jyh Yen. (2010). Examining gender and the academic achievement of students with emotional disturbance. *Education & Treatment of Children (ETC)*, 33(4), 601-621. Retrieved from <http://www.educationandtreatmentofchildren.net/>
- Rice, E. H., Merves, E., & Srsic, A. (2008). Perceptions of gender differences in the expression of emotional and behavioral disabilities. *Education & Treatment of Children (ETC)*, 31(4), 549-565. Retrieved from <http://www.educationandtreatmentofchildren.net/>
- Romano, E., Tremblay, R. E., & Vitaro, F. (2001). Prevalence of psychiatric diagnoses and the role of perceived impairment: Findings from an adolescent community sample. *Journal of Child Psychology & Psychiatry & Allied Disciplines*, 42(4), 451. doi:10.1111/1469-7610.00739
- Sabornie, E. J., Cullinan, D., & Epstein, M. H. (1993). Patterns and correlates of learning, behavior, and emotional problems of adolescents with and without serious emotional disturbance. *Journal of Child & Family Studies*, 2(2), 159-175. Retrieved from <http://www.springerlink.com/content/1062-1024/>
- Sachs-Ericsson, N., & Ciarlo, J. A. (2000). Gender, social roles, and mental health: An epidemiological perspective. *Sex Roles*, 43(9), 605-628. Retrieved from <http://www.springerlink.com/content/0360-0025/>
- Serpell, Z., Hayling, C. C., Stevenson, H., & Kern, L. (2009). Cultural considerations in the development of school-based interventions for African American adolescent boys with emotional and behavioral disorders. *Journal of Negro Education*, 78(3), 321-332. Retrieved from <http://www.journalnegroed.org>
- Taylor, R. L., Smiley, L. R. & Richards, S. B. (2009). *Exceptional students: Preparing teachers for the 21st century*. Boston: McGraw-Hill Higher Education.
- Vernberg, E. M., Jacobs, A. K., Nyre, J. E., Puddy, R. W., & Roberts, M. C. (2004). Innovative treatment for children with serious emotional disturbance: Preliminary outcomes for a school-based intensive mental health program. *Journal of Clinical Child & Adolescent Psychology*, 33(2), 359-365. doi:10.1207/s15374424jccp3302_17
- Walker, B., Cheney, D., Stage, S., Blum, C., & Horner, R. H. (2005). School wide screening and positive behavior supports: Identifying and supporting students at-risk for school failure. *Journal of Positive Behavior Interventions*, 7(4), 194-204. doi:10.1177/10983007050070040101
- Walter, H. J., Gouze, K., & Lim, K. G. (2006). Teachers' beliefs about mental health needs in inner city elementary schools. *Journal of the American Academy of Child & Adolescent Psychiatry*, 45(1), 61-68. doi: 10.1097/01.chi.0000187243.17824.6c
- Watson, K., Potts, J., Hardcastle, E., Forehand, R., & Compas, B. (2012). Internalizing and externalizing symptoms in sons and daughters of mothers with a history of depression. *Journal of Child & Family Studies*, 21(4), 657-666. doi: 10.1007/s10826-011-9518-4
- Young, E. L., Sabbah, H. Y., Young, B. J., Reiser, M. L., & Richardson, M. J. (2010). Gender differences and similarities in a screening process for emotional and behavioral risks in

secondary schools. *Journal of Emotional & Behavioral Disorders*, 18(4), 225-235. doi: 10.1177/106342660933885

About the Author

Amanda Malfitano, MPS, graduated from Manhattanville College in May 2013. She is a New York State certified teacher in Childhood Education and Special Education for grades one through six. She currently teaches fourth grade at a school for special education students.

African American Parental Beliefs About Resiliency: A Delphi Study

**Vita Jones, Ph. D. Assistant Professor
California State University Fullerton**

**Kyle Higgins, Ph.D., Professor
University of Nevada Las Vegas**

**Randall Boone, Ph.D., Professor
University of Nevada Las Vegas**

**Susan P. Miller, Ph.D., Professor
University of Nevada Las Vegas**

**Nancy Sileo, Ed.D., Professor
University of Northern Colorado**

Abstract

This study involved a Delphi inquiry concerning the characteristics of resiliency specific to African American children/youth. The study was conducted with a large group of African American parents who were considered experts in resiliency because they had graduated from high school and had at least one child who had graduated from high school. Through a series of three Delphi surveys, the parents moved toward consensus concerning the most important characteristics of resiliency that contributed to their success and the success of their child(ren); as well as those that hindered their success and the success of their child(ren). Data were analyzed using descriptive statistics and qualitative analysis. The main characteristics of resiliency defined by the parents as contributing to or hindering their success or the success of their child(ren) included (a) spiritual/faith, (b) positive/negative personal traits, (c) family involvement/problems, (d) positive/negative educational supports, (e) inappropriate behaviors, and (f) resources.

African American Parental Beliefs About Resiliency: A Delphi Study

Resiliency, as a concept, has been discussed in anthropology, psychology, sociology, general education, and special education for over 30 years (Margalit, 2003; Murray, 2003; Waxman, Gray, & Padron, 2003). A common thread in this discussion is the ability to triumph over adversity. It appears that for each child/youth experiencing difficulties in adverse situations there are twice as many who flourish and become productive individuals within society (Werner & Smith 1992). Researchers have labeled children/youth who rise above negative situations (e.g., home, school, community) as resilient (Ogbu, 2004; Patterson, 2002; Sagor, 1996). A variety of personal characteristics have been associated with resiliency. For example, optimism, internal affirmation, internal locus of control, intrinsic motivation, strong relationships with peers and

adults, and the ability to remove oneself emotionally from unfavorable situations are considered to be traits of a resilient person (Ford, 1994; Kitano & Lewis, 2005; Sagor, 1996). Werner and Smith (1992) described the resilient child/youth as one who works well, plays well, loves well, and expects well.

A subgroup of students who are disproportionately affected by negative perceptions from society and who often find themselves in adverse situations are African American children and youth (Ogbu, 2004). These students encounter less fit in public schools, have a higher propensity for at-risk behavior, and experience less favorable academic and social outcomes (Connell, Spencer, & Aber, 1994). This lack of fit is exacerbated when the child/youth is labeled as having a learning disability (LD) (Margalit, 2003). Children/youth with LD tend to form less secure relationships with others, resulting in insecure relational patterns often correlated with social and emotional maladjustment (Keogh & Weisner, 1993). It may be that the LD identification is an additional risk factor for these students as they move through school and beyond the boundaries of school (Morrison & Cosden, 1997).

Resiliency Defined

Researchers continue to search for the variables that contribute to the development of resiliency (Patterson, 2002). In education, resiliency is defined primarily in terms of outcomes. That is to say, educational researchers define resiliency as the increased probability of academic and social accomplishments in spite of setbacks (Brown, 2001; Milstein & Henry, 2000).

In this study, a resilient person was defined as someone who embodies the characteristics of resiliency and draws on his or her self-worth to be a personal advocate (Harvey, 2007). A resilient child/youth was defined as one engaged in the school setting in spite of complicated and adverse experiences and who ultimately graduates from high school (Martin & Marsh, 2006).

Characteristics of Resiliency

The specific characteristics of resiliency are globally defined as indicators of resilience (Miller & MacIntosh, 1999). The literature describes these as: (a) individual characteristics (e.g., the innate abilities that reside in an individual and remain centered during difficult times) (Condly, 2006), (b) relationship characteristics (e.g., a sense of connectedness and fit) (Booker, 2004), (c) community characteristics (e.g., the joining together of people with common values, beliefs, and interests) (Wang & Gordon, 1994), (d) cultural characteristics (e.g., knowing one's history and participating in a cultural tradition) (Ogbu, 2004), and (e) physical ecology characteristics (e.g., access to a healthy and safe environment) (International Resiliency Project, 2007).

However, these characteristics may be so global in nature as to lack specificity when discussing unique populations of children/youth (e.g., African Americans, students with LD) (Kitano & Lewis, 2005; Margalit, 2003). The heterogeneity of the population of students labeled as having LD, as well as societal and cultural values used to determine risk and protective factors for African American children/youth indicate that a discussion of resiliency characteristics must be specific in nature and take into consideration the disability as well as the cultural or ethnic group in which a child/youth functions.

Although extensive literature exists defining the characteristics of resiliency, in general terms, little exists in regards to African American students specifically (Kitano & Lewis, 2005). While social and academic outcomes are positive for African American students who exhibit resiliency (Patterson, 2002), it also indicates that African American students who lack resiliency often struggle with life's challenges and may be predisposed to negative outcomes in life (McCabe et al., 2007). For all of these students, resiliency is a multidimensional component to which situational (e.g., school, community), family (e.g., child-parent interaction), and cultural elements contribute (Parker, Cowens, Work, & Wyman, 1990).

Purpose of the Study

This study implemented a Delphi inquiry concerning the characteristics of resiliency with a large group of African American parents. The goal was to bring specificity to the discussion of resiliency as it relates to African American children/youth.

The Delphi method is comprised of a series of surveys developed around structured opinion gathering in which several rounds of data are collected from expert participants to create a consensus (Streveler, Olds, Miller, & Nelson, 2003). Parents, for this study, were considered *experts* in resiliency if they had graduated from high school and had at least one child who graduated from high school (Daire, LaMothe, & Fuller, 2007). This study was a three-round Delphi in which the parents completed surveys as they went through three iterations of deliberation based on previous responses. The goal was to allow African American parents to define resiliency specifically in terms of their own experience and the experiences of their children. To do this, five research questions were posed:

1. What roles do individual characteristics play in achieving resiliency in African American children/youth?
2. What roles do relationship characteristics play in achieving resiliency in African American children/youth?
3. What roles do community characteristics play in achieving resiliency in African American children/youth?
4. What roles do cultural characteristics play in achieving resiliency in African American children/youth?
5. What roles do physical ecology characteristics play in achieving resiliency in African American children/youth?

Method

The Delphi process was used to develop consensus among African American parents concerning the characteristics of resiliency contributing to their own success and the success of their child who graduated from high school. The Delphi survey focused on internal and external predictors of resiliency.

Participants

Parents

The participants in this study (n = 227) were African American parents living in a large southwestern city. The Delphi process requires that only persons with expertise in the area under

investigation participate (Linstone & Turoff, 2002). Experts were defined as parents: (a) who had graduated from high school, and (b) who had a least one child who had graduated from high school. Table 1 shows the demographic information for the participants.

In order to maintain anonymity of all participants, in each Round of the Delphi, parents received a demographic form to complete as the first page of the Delphi (e.g., Round One, Round Two, Round Three). If a parent had not participated in the previous round, they were directed to complete the demographic sheet first. If a parent had participated in the previous round, they were directed to the survey. The Delphi does not require that all participants remain constant throughout the process, it only requires that the participants meet the test of expertise (Barnette, Danielson, & Algozzine, 1978).

Data collectors

There were five data collectors, one at each site, to assist parents in completing the Delphi surveys and the demographic sheet. The data collectors were African American women who were active in the churches in which the data were collected. They were trained in a 2-hour session concerning the collection of information in the Delphi process. Each data collector received a script to read to the parents so that all data were collected in a systematic manner.

Setting

The pastors of five churches agreed to allow their churches to serve as data collection sites for the study. The congregations were predominantly African American and composed of a wide range of educational, vocational, and economic groups. African American churches were selected as the data collection sites because of the importance these institutions play within the community, serving as a social, historical, and cultural hub of the community (Lincoln & Mamiya, 1990; Payne, 1995). Data were collected on Wednesday evenings and Sunday afternoons.

Instrumentation

The Delphi method is a technique used to facilitate communication among groups of people who do not physically meet (Barnette, Danielson, & Algozzine, 1978). It allows participants to generate ideas and share special knowledge without having contact with each other (Nehiley, 2001). This study employed a three-round Delphi process, each round of the Delphi allowing the participants an opportunity to contribute information they felt was important. Each survey built upon responses from the previous survey, thus items were removed from the survey or came onto the survey based on participant responses over time.

Round one

The first round of the Delphi was open-ended regarding responses from the participants, with the focus on generating a large data pool of *characteristics* the African American parents believed: (a) contributed to or hindered their own personal success (i.e., graduation from high school) as well as (b) the characteristics that contributed to or hindered their child's success (i.e., graduation from high school). This first round generated unique responses from the participants that were then used in the second and third rounds. The independent responses collected in Round One served as the basis for further investigation and as the main source of data for qualitative analysis. Eight prompts focused the initial participant responses (see Table 2).

The responses to these eight prompts were organized into a comprehensive list of all responses. These unique items were extracted from the participant narratives as individual thought units much like determining t-units (Smith, Lee, & McDade, 2001) used in essay scoring. From this list of unique items, responses that were similar in meaning were combined into single aggregated responses. See Figure 1 as an example of how similar response items could be combined into one aggregated response.

The aggregated responses were assigned a numeric value equal to the number of unique response items from which the aggregated response was created (e.g., The aggregated response in Figure 1 would have a value of 3). A rank-ordered list was developed based on the value of each aggregated response. From the rank-ordered list, the top 10 items associated with each of the eight prompts (e.g., internal characteristics that contributed to your success; external characteristics that hindered your child's success) were determined.

Round two

In round two of the Delphi, participants were given a survey comprised of the Top 10 aggregated responses for each of the eight prompts (i.e., 80-items in total) that were developed from data collected in Round One of the Delphi. The number of unique responses from which each aggregated item on the survey was constructed was also included on the survey and explained to the participants. The participants then were asked to rate each item on the 5-item Likert instrument as: 1-did not impact my or my child's success, 2-had very little impact on my or my child's success, 3-had some impact on my or my child's success, 4-had considerable impact on my or my child's success, and 5-strongly impacted my or my child's success. Additionally, participants were directed to select the *top three most important* items listed for each of the eight prompts. Analysis included the construction of a *top-three* list of items for each of the eight prompts along with descriptive statistics for each. See Figure 2 for an example page of this survey.

Round three

The final data collection round in the Delphi process also utilized a survey with the same Likert scale. The survey items on this round of the Delphi were drawn from the top-three most important items list, which was developed as part of the data analysis process in Round Two. This instrument, then, consisted of 24 survey items, three from each of the eight prompt categories (see Figure 3).

Interscorer Agreement

Interscorer reliability was conducted for each round of the Delphi process. To develop aggregated responses from unique responses and to develop categories from aggregated responses, 25% of all responses were checked to ensure reliability and placement agreement. Interscorer agreement was determined by $[\text{agreements} / (\text{agreement} + \text{disagreements})] \times 100 =$ percent of agreement. Interscorer agreement was 96% on the unique-to-aggregated responses and 100% on aggregated responses-into-categories for both Round One and Round Three.

Qualitative Analysis

From round one of the Delphi, items from the aggregated response list were coded in order to identify thematic and categorical similarities among the responses. Using the five areas of characteristics outlined in the research questions (i.e., individual, relationship, community, cultural, and physical ecology) as top-level thematic units, domain analysis (Spradley, 1980) was then used to identify, code, and place the aggregated responses into a new set of categories. These categories expanded and collapsed to accommodate the data until all data were classified. Once the categorizing was complete, the categories were cross-referenced with the top-level themes to show relationships across: (a) the themes, which reflected the focus of the research questions, (b) the categories, which were developed directly from participant data, and (c) the individual aggregated responses. Aggregated response items were placed into finalized categories, which were combined into finalized themes. These themes and categories were also cross-referenced against the eight prompts from Round One (e.g., internal characteristics that contributed to your success; external characteristics that hindered your child's success).

Descriptive Quantitative Analysis

Aggregated response items

From the comprehensive list of all unique responses from all participants for each prompt, a shorter list of aggregated response items was created. Similar items from the list of unique responses were combined into aggregated responses items and those aggregated items were assigned a frequency value equal to the number of unique response items from which it was developed.

Surveys

Placement of each item within the survey did reflect its frequency value (i.e., number of unique responses comprising an aggregated response) as a ranking and its frequency value was provided on the survey. Means were calculated for each aggregated item on the initial survey. Response items with the highest mean scores (i.e., top ten) were the focus of further quantitative analysis. A mean score of 4.0 was selected as indicating consensus on this Delphi (McCallister, 1992).

Themes, categories, and response items

Based on the results of the qualitative analysis, the number of unique response items assigned to each category and corresponding theme was calculated. Aggregated responses were reported based on: (a) the percentage of participants who provided a unique response from which the aggregated items were developed, as well as (b) the actual number of unique responses from which the aggregated items were developed.

Top three

Participants, as part of Survey Two, identified the three most important items. The parents provided a list of their top-three response items from the survey in order of importance regarding resiliency. Frequency of the top-three items was calculated. The frequency reflected how many different times the item was selected by the participants as a top-three choice.

Results

A qualitative analysis of the data provided an understanding of the breadth of content in the responses, while a descriptive quantitative analysis provided a metric for determining and assigning importance to the content. This dual-coding process provided results that addressed the research questions on both scope and consequence.

Round One of the Delphi

The parents who completed the first survey in the Delphi provided a total of 3,216 unique responses for the eight original prompts given (see Table 2). These 3,216 unique responses were organized into a comprehensive list. Responses that were similar in meaning were combined into a single aggregated response (see Figure 1). This process was repeated three times resulting in a total of 281 aggregated responses.

For the *About Yourself* portion of Round One, there were 28 aggregated responses for the internal characteristics that contributed to success, 45 for internal characteristics that hindered success, 18 for external forces that contributed to success, and 55 for external forces that hindered success. For the *About Your Child* portion of Round One, there were 38 aggregated responses for the internal characteristics of the child that contributed to success, 37 for internal characteristics of the child that hindered success, 29 for external forces that contributed to the success of the child, and 31 for external forces that hindered the child's success.

From these 281 aggregated responses, a *top-ten* list was determined based on the frequency of unique responses that contributed to each of the aggregated responses for each of the eight prompts. Thus, for each prompt 10 aggregated responses were selected based on the highest frequency of unique responses.

The *top-ten* list for each of the eight prompts was reviewed and a process initiated through which the 80 resulting aggregated responses were placed into categories that were descriptive of the responses. This process resulted in the identification of 10 categories. The categories that were determined and the number of aggregated responses that fit into each of the categories included:

1. Educational traits, with 6 response items.
2. Good environment, with 3 response items.
3. Family involvement/problems, with 9 response items.
4. Positive educational supports, with 7 response items.
5. Racism, with 3 response items.
6. Lack of resources, with 6 responses items.
7. Positive and negative personal traits, with 35 response items.
8. Spiritual/faith, with 4 response items.
9. Extra-curricular, with 3 response items.
10. Inappropriate behaviors, with 4 response items.

These categories were then cross-referenced with each of the eight prompts as well as with the themes (i.e., research question foci).

Round Two of the Delphi

In Round Two of the Delphi, the top-ten aggregated responses identified in Round One were organized around each of the original eight prompts. The participants were given a survey that provided them with information concerning the rank order of each response (i.e., 1-10) and the number of unique items from which the aggregated response was created from data obtained in Round One. Participants were asked to indicate their agreement with each aggregated response using a Likert-scale (1-disagree to 5-agree). Upon completion of the Likert-portion of the survey, the participants then selected the top-three most important items from the 10 aggregated items and listed them in a separate section of the survey. Thus, in Round Two of the Delphi, participants provided two sets of information, their rankings of the 80 aggregated items from Round One (i.e., 10 for each of the eight prompts) and their selection of the top-three items for each of the eight prompts.

Round Three of the Delphi

The final data collection round also utilized a survey instrument with the same Likert scale (1-disagree to 5-agree). The survey items on this instrument were drawn from the list of top-three most important items selected by participants as part of the data collection and analysis process in Round Two. This instrument, then, consisted of 24 survey items, three from each of the eight prompt headings. The response items were listed in rank order as the top three items in each of the eight categories. The mean scores from this final survey were used to reconfigure the final top-three lists, with the rank order by mean scores on the survey supplanting the rank order determined in Round Two.

A series of eight comprehensive response-table figures were created, providing a final look at the outcome of the Delphi consensus-building process (see Figures 4 through 11). Each figure represented the number one choice of the top-three response items. In addition to the quantitative data from Round One and Round Two, the response-table figures connect each of the number one aggregated response items to the qualitative analysis by indicating which of the 10 categories (e.g., faith, family, personal traits) the item was associated with; as well as the research question(s) that are best informed by the consensus outcome regarding the item.

Specifically the response tables include:

1. The prompt category from which the item was generated (e.g., internal characteristics that contributed to your success; external characteristics that hindered your child's success).
2. The aggregated response item (developed from survey one) itself.
3. The number of unique response items from which each aggregated item was developed along with a minimum of four verbatim samples of those unique responses.
4. The number of participants who provided a unique response from which the aggregated response item was constructed.
5. Its mean score and rank order from Survey Two.
6. Its rank in the top three items of importance list from Survey Two.
7. Its mean score from Survey Three.
8. Its final rank in its particular prompt category.
9. The overall qualitative category into which the item was placed.
10. The research question to which it most closely relates.

The final 24 items for each of the eight prompts were reviewed and the items were placed into the categories identified in Round One. As this process proceeded, it became clear that the 10 categories identified in Round One of the Delphi process had been reduced to six categories in Round Three. This provides an indication that the participants had reduced their focus down to six specific categories of resiliency. These categories then were related to the associated research themes (research question foci) (see Tables 3 and 4). The final six categories relating to resiliency as identified by the participants were related to all five of the research questions posed in the study.

Discussion

This study involved a three-round Delphi process with a large group of African American parents in order to create a consensus concerning resiliency specific to African American children/youth. The ultimate goal was to identify the characteristics of resiliency that parents agreed both contributed to and hindered their success and the success of their child(ren). Through the Delphi process, the parents defined and re-defined resiliency in terms of the African American experience. The consensus concerning resiliency revolved around the characteristics related to each of the five research questions (e.g., individual, relationship, community, cultural, and physical ecology).

Individual Characteristics (Question 1)

In Round One of the Delphi, *individual characteristics* were identified in all of the eight prompts. Specifically, the theme of *individual characteristics* was comprised of the categories of positive/negative personal traits, spiritual/faith, and inappropriate behaviors.

Round one of the Delphi

The appearance of *individual characteristics* in Round One of the Delphi in terms of overall category identification and frequency of responses indicated that for African American parents and their children *individual characteristics* (both positive and negative) play a major role in resiliency. Examples of responses for the parents ranged from *I was highly motivated* to *I experienced low self-esteem* and for their children from *My child has a positive attitude* to *My child procrastinates*.

Round two of the Delphi

As the Delphi became more refined, the spiritual/faith category appeared more and more often across prompts and themes. While public school educators cannot deal with spiritual/faith issues in the school setting, it is important for them to understand how deeply rooted this is in the African American culture (Lincoln, 1990; Payne, 1995).

The second portion of Round Two of the Delphi asked parents to identify the top-three items from the list of 10 aggregated items in each of the eight prompts. When the parents selected their top-three items, *My faith helped me succeed* was selected 38 times by the parents and became the top item in this category.

Round three of the Delphi

For the third round of the Delphi, the parents completed a Likert survey that contained the top three items for each of the eight prompts from Round Two. In this round, for the Your Child Internal Contributed prompt, all of the top three items were related to the positive/negative personal traits category and the spiritual/faith category, both considered *individual characteristics*. And for the Your Child External Contributed, all items were related to the family involvement/problems and positive educational supports categories, both considered *individual characteristics*. Continuing with the About Your Child portion of the Delphi, for the prompt Your Child Internal Hindered, all three items were from the positive/negative personal traits category; and for the Your Child External Hindered, the top three selections were from the family involvement/problems and inappropriate behaviors categories, all of which were considered *individual characteristics*.

In Round Three of the Delphi for the About Yourself top-three portion of the survey, the top three items for the internal-contributes prompt were related to the positive/negative personal traits category and the spiritual/faith category, both considered *individual characteristics*. For the About Yourself External Contributed prompt, two of the items were considered *individual characteristics* (family involvement/problems, educational traits). For the About Yourself Internal Hindered prompt, all three items were related to positive/negative personal traits or educational traits categories, both representative of *individual characteristics*. For the About Yourself External Hindered prompt, one item (family involvement/problems) was related to *individual characteristics*.

Summary

The parents reached consensus on the fact that the resiliency construct of *individual characteristics* both contributed to and hindered themselves and their children both internally and externally. The parents ultimately provided 20 out of 24 responses that were related to *individual characteristics*. While the responses varied over the identified categories (e.g., spiritual/faith, positive/negative personal traits), they provide a discussion starting point for parents and teachers concerning important *individual characteristics* related to resiliency for this population of children/youth.

Relationship Characteristics (Question 2)

The second question in this study focused on the roles that *relationship characteristics* play in achieving resiliency in African American children/youth. In Round One of the Delphi, *relationship characteristics* were identified in all of the eight prompts. Specifically, the theme of *relationship characteristics* was comprised of the categories spiritual/faith, family involvement/problems, positive educational supports, extra-curricular, and inappropriate behaviors.

Round one of the Delphi

The appearance of *relationship characteristics* in Round One of the Delphi in terms of overall category identification and frequency of responses indicated that for African American parents and their children *relationship characteristics* (both positive and negative) play a major role in resiliency. Examples of responses for the parents ranged from *Family support contributed to my success* to *My choice of friends was not good* and for their children from *My child received lots*

of encouragement from family to My child spent too much time involved in social/recreational activities. This high frequency may indicate one area on which educators and parents should focus as they work with African American children/youth to develop the forming of positive relationships that can have an impact on school success, community success, and social/emotional success.

Round two of the Delphi

The mean scores from the Likert portion of Round Two indicated that some of the aggregated responses had higher levels-of-agreement than expected from the frequency count conducted in Round One. For example, for the About Yourself External Contributed prompt, *My belief in God* had a frequency count of 64 responses from Round One of the Delphi and a mean score from the Likert scale in Round Two of 4.53. Conversely, *I received lots of support from my family*, had a frequency count of 111 from Round One and a mean score of 3.82 from Round Two. Thus, the two items exchanged positions as items one and two. This same pattern occurred across the eight prompts for the parents and children. Participants were beginning to refine their responses and move toward closer toward consensus in this round of the Delphi.

In the second part of Round Two of the Delphi, when the participants selected their top-three items, *I received lots of support from my family* was selected 26 times by the participants and became the top item in this category, *I had good friends* was selected by 16 participants, and *Teachers or other mentors helped me achieve* was selected by 13 participants. Thus, the participants went through several ponderings before coming to consensus in Round Two on *I received lots of support from my family* as the top resilient *relationship characteristic* for Yourself Internal Contributed. Had data collection stopped with Round One, the data would have reflected *I received lots of support from my family* as being the top item for Yourself External Contributed. With the selection of the top-three items, participants further reconsidered their thinking and went back to their original choice of *I received lots of support from my family*.

Round three of the Delphi

For *relationship characteristics* in this round, the focus was on the external prompts. Parents indicated that for themselves as well as for their child, *relationship characteristics* were in the external contributed and external hindered prompts. The categories represented were family involvement/problems, positive educational supports, and inappropriate behaviors.

In Round Three for the About Yourself top-three portion of the survey, the top three items related to *relationship characteristics* again revolved around the external contributed and external hindered prompts for both the parents and children. For the About Yourself portion, the external contributed responses were related to the categories of family involvement/problems and positive educational supports and the external hindered responses focused on family involvement/problems. For the About Your Child portion, the external contributed responses focused on the categories of family involvement/problems and positive educational supports and the external hindered responses were related to the categories of family involvement/problems and inappropriate behaviors.

Summary

The theme of *relationship characteristics* appears to be related to resiliency for the African American parents and their children who participated in this study. By Round Three of the Delphi, the parents had reached consensus that *relationship characteristics* of resiliency reside externally and can either contribute to or hinder one's success. The aggregated responses from these parents provide food for thought for educators and parents as they work to instill resiliency in African American children and youth. The parents provided 9 out of 24 responses related to *relationship characteristics*.

The parents repeatedly cited family involvement, positive educational support, peer pressure, friendships, and teachers/mentors as contributing to resiliency. While these responses may not be new to educators, they do provide support for a renewed effort in these areas when working with African American children/youth.

Community Characteristics (Question 3)

The third question in this study focused on the roles that *community characteristics* play in achieving resiliency in African American children/youth. In Round One, *community characteristics* were identified in all of the eight prompts. Specifically, the theme of *community characteristics* was comprised of the categories of spiritual/faith, lack of resources, good environment, positive educational supports, and extra-curricular.

Round one of the Delphi

The appearance of *community characteristics* in Round One of the Delphi in terms of overall category identification and frequency of responses indicated that for African American parents and their children, *community characteristics* (both positive and negative) play a major role in resiliency. Examples of responses for the parents ranged from *My community influenced my success* to *I lacked resources to support my success* and for their children from *My child received spiritual insight from family, church, and community* to *A negative environment hindered my child*. The participants in this study indicated that *community characteristics* have an impact on resiliency and as such it is prudent that educators become aware of the various characteristics of a community that impact the development of resiliency by the children/youth who live in a community.

Round two of the Delphi

It is interesting to note that as the Delphi became more refined, the theme of *community characteristics* appeared with less frequency. In fact, *community characteristics*, while appearing across the eight prompts, appeared with less frequency than did *individual characteristics* and *relationship characteristics*.

When parents were asked to identify their top three items in this category, fewer community items appeared, although two items became prominent as parents refined their thoughts (i.e., *My child was overly influenced by peer pressure* and *A negative environment influenced by child*).

Round three of the Delphi

In this round of the Delphi, resiliency as defined by the theme *community characteristics* was represented in the About Yourself prompts for internal contributed and external hindered and for

About Your Child for internal contributed, external contributed and external hindered. The items revolved around the categories of spiritual/faith, lack of resources, positive educational supports, and inappropriate behaviors. The resiliency theme of *community characteristics* was represented in only six out of the final 24 aggregated responses in the third round.

Summary

While the African American parents in this study did include *community characteristics* as a contributing factor to resiliency, the connection was weaker than was made for *individual* and *relationship characteristics*. This may have been due to the fact that these parents did not share a community in which they lived, but rather shared a church community.

Cultural Characteristics (Question 4)

The fourth question in this study focused on the roles that *cultural characteristics* play in achieving resiliency in African American children/youth. In Round One of the Delphi, *cultural characteristics* were identified in five of the prompts (i.e., About Yourself, internal/external contributed and About Your Child, internal contributed/hindered, external contributed). Specifically, the theme of *cultural characteristics* was comprised of the categories of positive/negative personal traits, spiritual/faith, and inappropriate behaviors (for the children).

Round one of the Delphi

The appearance of *cultural characteristics* in Round One of the Delphi in terms of overall category identification and frequency of responses indicated that for African American parents and their children *cultural characteristics* (both positive and negative) were identified in terms of religious experience and inappropriate behaviors (but only in regard to the children). Examples of responses for the participants ranged from *My faith helped me to succeed* to *My belief in God* and for their children from *My child is successful due to spiritual beliefs* to *My child is influenced by peer pressure*. The frequency of appearance of aggregated responses placed into categories associated with the theme of *cultural characteristics* was lower than the previous three themes. Overall, for this group of African American parents, the only cultural categories that emerged were spiritual/faith and inappropriate behaviors for the children. Educators must consider that peer pressure can become a negative *cultural characteristic* for certain populations of youth and the negative impact on resiliency needs counter measures in the environments of school, community, and home.

Round two of the Delphi

Other than the spiritual/faith category and inappropriate behaviors regarding the children (peer pressure), there were no responses that could be coded as cultural. The construct of culture and its contribution to the resiliency of African American children/youth warrants further investigation.

In the second part of Round Two of the Delphi when the parents selected their top-three items, *My faith helped me succeed* was selected 38 times by the parents and became the top item in this category replacing the previously selected items.

Round three of the Delphi

For the Third Round of the Delphi, the parents completed a Likert survey that contained the top three items for each of the eight prompts from Round Two. In this round, for the About Yourself portion only one prompt for internal contributed was related to *cultural characteristics*. This

was the aggregated response *My faith helped me succeed* associated with the category spiritual/faith. For the About Your Child portion, three prompts were associated with *cultural characteristics*, internal contributed (*Spiritual beliefs played a big part in my child's success*), external contributed (*My child received spiritual insight from family and/or the church community*), and external hindered (*My child was overly influenced by peer pressure*). These aggregated responses were associated with the categories of spiritual/faith and inappropriate behaviors that were associated with the *cultural characteristics* theme.

Summary

From the low number of responses that could be associated with *cultural characteristics*, it appears that, for the parents in this study, culture did not have a major impact on the definition of success/resiliency. While in the end, the parents reached consensus on the aggregated responses that were placed in categories associated with the *cultural characteristics* theme, the parents provided only four out of 24 responses associated with culture and primarily associated with culture in terms of the spiritual/faith category.

Physical Ecology (Question 5)

The fifth question in this study focused on the roles that *physical ecology characteristics* play in achieving resiliency in African American children/youth. In Round One of the Delphi, *physical ecology characteristics* were identified in five of the eight prompts (about yourself, external contributed/hindered and about your child, internal hindered and external contributed/hindered). Specifically, the theme of *physical ecology characteristics* was comprised of the categories of positive educational supports, good environment, lack of resources, racism, and extra-curricular.

Round one of the Delphi

The appearance of *physical ecology characteristics* in Round One in terms of overall category identification and frequency of responses indicated that for this group of participants, physical ecology had an impact, particularly for the external hindered prompt. However, for Round One, *physical ecology characteristics* were only represented in five of the eight prompts at a relatively low frequency rate. One interesting finding was that racism, as a category, was only identified for the external hindered prompt (yourself and child) and was placed in the physical ecology theme in this study. While racism became a category and represented a frequency of 32 responses, it did not represent a majority of the unique responses nor did it receive a high rate of frequency in Round One of the Delphi.

Round two of the Delphi

Based on mean scores and frequency of responses, it appears that for *physical ecology characteristics* participants remained the most consistent in their responding. There was little movement in the items.

The second portion of Round Two of the Delphi asked parents to identify the top-three items from the list of 10 aggregated items in each of the eight prompts. For About Yourself, participants selected no items related to *physical ecology characteristics* to move into the top three items. For About Your Child, participants selected *physical ecology characteristics* for the prompt items: (a) external contributed (*My child had a positive educational environment*) and (b) external hindered (*A negative environment influenced my child*). This indicated that *physical*

ecology characteristics appeared to have the weakest link to resiliency as identified by this group of parents.

Round three of the Delphi

For the third round, the parents completed a Likert survey that contained the top three items for each of the eight prompts from Round Two. In this round, the About Your Child External Contributed prompt provided one category (positive educational supports) related to *physical ecology characteristics*. Two prompts were related to About Yourself: (a) external contributed (positive educational supports) and (b) external hindered (lack of resources).

Summary

From the few unique items and aggregated responses ultimately related to the research theme of *physical ecology characteristics* provided by the African American parents in this study, it appears that the resiliency concept of *physical ecology characteristics* has little impact on resiliency for this group. The parents ultimately provided four out of 24 responses that were related to *physical ecology characteristics*.

Conclusions

By the final round of the Delphi, the parents had refined their responses from the original 281 aggregated responses to 24 aggregated responses and from ten response categories to six. The final round of the Delphi also indicated that the responses provided by the parents fell primarily into the research themes (questions) of *individual* and *relationship characteristics*. That is to say, that these two themes best defined resiliency for this large group of parents. There is less support from this study for the resiliency themes of *community, cultural, and physical ecology characteristics*. In short, seven conclusions maybe drawn from this study:

1. Resiliency can be defined for African American students using similar terms used to define resiliency for the general population of students (e.g., individual, relationship, community, cultural, physical ecology characteristics). However, the fine-tuning of these characteristics may differ from other groups (e.g., spiritual/faith, positive/negative personal traits, family involvement/problems, positive educational supports, and inappropriate behaviors).
2. There appears to be some reluctance on the part of African American parents to rate items that are negative (e.g., hindered success) concerning their or their child's success. This may be due to the fact that data were collected in a church or that parents do not want to contribute to negative stereotyping.
3. There are six categories of resiliency that emerged from this study that should be targeted when working with African American children/youth. These are spiritual/faith, positive/negative personal traits, family involvement/problems, positive educational supports, inappropriate behaviors, and lack of resources.
4. This study indicates that the link between community characteristics and resiliency needs further exploration and definition. It may be that community characteristics are situation specific and cannot be generalized across communities.
5. This study found that African American parents are active participants in building consensus concerning their children. The large participation sample indicates the

willingness of these parents to provide information, input, and ideas impacting their child's education.

6. This study found that the role of culture in resiliency is unclear for this population of African American parents and their children. It may be that culture outside of the spiritual/faith realm is not a primary factor for this group.
7. The relationship between physical ecology and resiliency was not revealed in this study. Parents provided few responses associated with physical ecology and it did not occur in a high enough frequency or with a high enough mean to draw any conclusions about its relationship to resiliency for this population.

Implications

Because students from diverse backgrounds comprise 33% of the public school enrollment (NCES, 2005), 13% of which are African American students, identification of the unique resiliency characteristics of this subgroup of students must occur to provide educators and parents evidence-based information. This study provides one step in this direction in that it provided African American parents with a vehicle through which they could provide information specific to their experiences and the experiences of their children.

References

- Barnette, J., Danielson, L., & Algozzine, R. (1978). Delphi methodology: An empirical investigation. *Educational Research Quarterly*, 3(1), 66-73.
- Booker, K.C. (2004). Exploring school belonging and academic achievement in African American adolescents. *Curriculum and Teaching Dialogue*, 6, 131-143.
- Brown, J.H. (2001). Systemic reform concerning resilience in education. *TechTrends*, 45(4), 47-54.
- Condly, S.J. (2006). A review of literature with implications for education. *Resilience in Children*, 41, 211-236.
- Connell, J.P., Spencer, M.B., & Aber, J.L. (1994). Educational risk and resilience in African American youth: Context, self, action, and outcomes in school. *Child Development*, 65, 493-506.
- Daire, A.P., LaMothe, S., & Fuller, D.P. (2007). Differences between Black/African Americans and White college students regarding influences on high school completion, college attendance, and career choice. *Brief Report*, 55, 275-279.
- Ford, D.Y. (1994). Nurturing resilience in gifted black youth. *Roeper Review*, 17, 80-85.
- Harvey, V.S. (2007). Raising resiliency school wide. *The Education Digest*, 72(7), 9-33.
- International Resilience Project. Task Force on developing strategies to negotiate resilience. (n.d.). Retrieved October 12, 2007 from <http://www.resilienceproject.org/index.cfm>
- Keogh, B., & Weisner, T.S. (1993). An ecocultural perspective on risk and protective factors in children's development: Implications for learning disabilities. *Learning Disabilities Research and Practice*, 8, 3-10.

- Kitano, M.K., & Lewis, R.B. (2005). Resilience and coping: Implications for children and youth at risk. *Roper Review*, 27, 200-205.
- Lincoln, C.E. (1990). *The Black church in the African American experience*. Durham, NC: Duke University Press.
- Linstone, H.A., & Turoff, M. (2002). *The Delphi method: Techniques and applications*. Retrieved April 10, 2008, from New Jersey Institute of Technology Web site: <http://is.njit.edu/pubs/delphibook/delphibook.pdf>
- Margalit, M. (2003). Resilience among individuals with learning disabilities: Proximal and distal influences, *Learning Disabilities Research & Practice*, 18, 82-86.
- Martin, A.J., & Marsh, H. (2006). Academic resilience and its psychological and educational correlates: A construct validity approach. *Psychology in the Schools*, 43, 267-281.
- Miller, D. B., & MacIntosh, R. (1999). Promoting resilience in urban African American adolescents: Racial socialization and identity. *Social Work Research*, 2, 159-170.
- Milstein, M.M., & Henry, D.A. (2000). *Spreading resiliency: Making it happen for schools and communities*. Thousand Oaks, CA: Corwin Press.
- McCabe, S.E., Morales, M., Cranford, J.A. Delva, J., McPherson, M.D. & Boyd, C.J. (2007). Race/ethnicity and gender differences in drug use and abuse among college students. *Journal of Ethnicity in Substance Abuse*, 6, 75-95.
- McCallister, A.D. (1992). *Determining characteristics of the forest industry in the 21st century: A Delphi study with implications for agriculture education programs*. Unpublished doctoral dissertation, University of Georgia, Athens, G.A.
- Morrison, G.M., & Cosden, M.A. (1997). Risk, resilience and adjustment of individuals with learning disabilities. *Learning Disabilities Quarterly*, 20, 43-60.
- Murray, C. (2003). Risk factors, vulnerability, and resilience: A framework for understanding and supporting the adult transitions of youth with high-incidence disabilities, *Remedial and Special Education*, 24, 16-26.
- National Center for Education Statistics. (2005) [Percentage of 16-24 year olds who were high school status dropouts, by race/ethnicity: 1989-2005. (NCES). Retrieved September 15, 2007, from <http://nces.ed.gov/pubs2007>
- Nehiley, J. (2001). *How to conduct a Delphi study*. Abstract retrieved April 29, 2008, from <http://extmarket.ufl.edu/FOCUS.html>
- Ogbu, J.U. (2004). Collective identity and the burden of "Acting White" in black history, community and education. *The Urban Review*, 36(1), 1-35.
- Parker, G.R., Cowens, E.L., Work, W.C., & Wyman, P.A. (1990). Test correlates of stress resilience among urban school children. *Journal of Primary Prevention*, 11(1), 19-35.
- Patterson, J.M. (2002). Understanding family resilience. *Journal of Clinical Psychology*, 58, 233-246.
- Payne, W.J. (1995). *Directory of African American religious bodies: A compendium by the Howard University School of Divinity*. Washington, DC; Howard University Press.
- Sagor, R. (1996). Building resiliency in students. *Educational Leadership*. 54, 38-43.
- Smith, T.T., Lee, E., & McDade, H.L., (2001). An investigation of T-units in African American English-speaking fourth-grade children. *Communication Disorders Quarterly* 22, 148-157.

- Spradley, J.P. (1980). *Participant Observation*. Independence: KY, Thomas Learning, Inc.
- Streveler, R.A., Olds, B.M., Miller, R.L., & Nelson, M.A. (2003). Using a Delphi study to identify the most difficult concepts for students to master in thermal and transport science. *Proceedings of the 2003 American Society for Engineering Annual Conferences & Exposition, Golden, CO, 1-9*.
- Wang, M.C., & Gordon, E. W. (1994). *Educational resilience in inner-city America: Challenges and prospects*. Hillsdale, NJ.: Lawrence Erlbaum Associates, Inc.
- Waxman, H.C., Gray, J.P., & Padron, Y.N. (2003). *Review of research on educational resilience* (Research Report No. 11). Santa Cruz, University of California: The Center for Research on Education, Diversity and Excellence.
- Werner, E.E., & Smith, R.S. (1992) *Overcoming the odds: High risk children from birth to adulthood*. New York: Cornell University Press.

About the Authors

Vita L. Jones, Ph.D. is an Early Childhood Assistant Professor for the Special Education department of California State University, Fullerton. She has been in the field of special education since the 1980s as a paraprofessional, a classroom teacher, a teacher mentor and a professor. Her research agenda includes early childhood issues and trends, and issues of diversity in the 21st century. Dr. Jones's also focuses on the characteristics of resiliency that contribute to student success.

Kyle Higgins, Ph.D. is a professor in the Department of Educational and Clinical Studies at UNLV. Her research interests include educational interventions for students from diverse populations, technology applications, and the development of resiliency in children and youth.

Randall Boone, Ph.D. is Chair of the Department of Teaching and Learning at UNLV. His research interests include the collection and analysis of large data sets, instructional design, and instructional technology.

Susan Miller, Ph.D. is an Emerita Professor of Special Education in the Department of Educational and Clinical Studies at the University of Nevada Las Vegas. She devoted 35 years to the field of education in various teaching positions and conducted research in math strategies for students with disabilities.

Nancy Sileo, Ed.D. is a Professor of Early Childhood Special Education / Early Childhood Education and has been in the field of education for over 20 years. She earned her Ed.D. from the University of Northern Colorado (UNC) in 1998 and is currently Assistant Dean for the College of Education and Behavioral Sciences at UNC.

Figure 1. An Example of the Process for Creating Aggregated Response Items

Unique Response Items from Narrative with Similar Meanings
1. My grandmother always read me a bedtime story. 2. We used to always read fairy tale stories from the <i>Book of Knowledge</i>. 3. I had heard all the children's stories before I started to school because my mother read them to us.
A Single Aggregated Response Item
Reading aloud was a common occurrence during childhood. (Value = 3)

Figure 2. Sample Page From Round Two of the Delphi

Page 4

About Your Child:

Internal characteristics that contributed to his or her success

Top Ten Items	Number of times someone said it	What the participants said in the first survey.	Disagree-----Agree ←====→ Circle Your Choice
1.	39	My child would strive hard for what he/she wants to achieve.	1 2 3 4 5
2.	30	My child was full of determination .	1 2 3 4 5
3.	27	Family involvement played a big part in my child's success.	1 2 3 4 5
4.	24	Spiritual beliefs played a big part in my child's success.	1 2 3 4 5
5.	22	Persistence was an important characteristic in my child.	1 2 3 4 5
6.	16	My child was highly motivated .	1 2 3 4 5
7.	13	My child was very intelligent .	1 2 3 4 5
8.	12	My child had a positive attitude .	1 2 3 4 5
9.	10	My child was successful due to good study skills .	1 2 3 4 5
10.	8	Loyalty was a top characteristic related to my child's success.	1 2 3 4 5

(1) Select the top three items YOU think are most important from the 10 statements above.

(2) List them in order of importance below.

(3) Write the reason why each item is so important.

	Item number	Your reason goes below
A		
B		
C		

Figure 3. Sample Page From Round Three of the Delphi

4

About Your Child:

Top Three Items	What the participants said in the second survey	Disagree—Agree ←== ==→ Circle Your Choice
Internal characteristics that <u>contributed</u> to his or her success		
1.	Family involvement played a big part in my child's success.	1 2 3 4 5
2.	Spiritual beliefs played a big part in my child's success.	1 2 3 4 5
3.	My child had a positive attitude .	1 2 3 4 5
External characteristics that <u>contributed</u> to his or her success		
1.	My child received lots of encouragement from family.	1 2 3 4 5
2.	My child received spiritual insight from family and/or the church community.	1 2 3 4 5
3.	My child had positive educational support.	1 2 3 4 5
Internal characteristics that <u>hindered</u> to his or her success		
1.	My child was overly influenced by peer pressure .	1 2 3 4 5
2.	My child had a low level of self-esteem .	1 2 3 4 5
3.	My child could not seem to focus on important things.	1 2 3 4 5
External characteristics that <u>hindered</u> to his or her success		
1.	My child experienced adverse family problems .	1 2 3 4 5
2.	My child suffered from low self-esteem .	1 2 3 4 5
3.	A negative environment influenced my child.	1 2 3 4 5

Spiritual beliefs played a big part in my child's success.					
1.	Number of Unique Responses: 24	2.	Persons Who Said It: # 24	17.65%	
3.	Mean from Survey 2: 4.30	4.	Rank Order from Survey 2: 4		
5.	Rank from Top 3 Importance: 1	6.	Mean from Survey 3: 4.65		
7.	Final Rank for Your Child, Internal, Contributed: 1				
8.	Qualitative Category: Spiritual/Faith	9.	Research Question Informed: 1,2,3,4		
Examples from Unique Response Items: 1. Godly teaching 2. Prayer 3. Attending church 4. Applying faith					

Figure 4. *Your Child – Internal – Contributed: Number 1 Most Important*

My child received lots of encouragement from family.					
1.	Number of Unique Responses: 113	2.	Persons Who Said It: # 113	83.09%	
3.	Mean from Survey 2: 4.59	4.	Rank Order from Survey 2: 1		
5.	Rank from Top 3 Importance: 1	6.	Mean from Survey 3: 4.61		
7.	Final Rank for Your Child, External, Contributed: 1				
8.	Qualitative Category: Family Involvement/Problems	9.	Research Question Informed: 1,2		
Examples from Unique Response Items: 1. Nurturing from family 2. Maintained high expectations for my child 3. Child knew that I cared 4. Extended family and grandparents supported my child					

Figure 5. *Your Child – External – Contributed: Number 1 Most Important*

My child could not seem to focus on important things.					
1.	Number of Unique Responses: 13	2.	Persons Who Said It: # 13	9.56%	
3.	Mean from Survey 2: 2.18	4.	Rank Order from Survey 2: 3		
5.	Rank from Top 3 Importance: 2	6.	Mean from Survey 3: 2.65		
7.	Final Rank for Your Child, Internal, Hindered: 1				
8.	Qualitative Category: Positive or Negative Personal Traits	9.	Research Question Informed: 1,2		
Examples from Unique Response Items: 1. My child struggled to focus in school 2. My child experienced a lack of motivation in school 3. My child was easily frustrated in school 4. My child had difficulty maintaining focus					

Figure 6. *Your Child – Internal – Hindered: Number 1 Most Important*

My child experienced adverse family problems.					
1.	Number of Unique Responses: 33	2.	Persons Who Said It: # 33	24.26%	
3.	Mean from Survey 2: 2.23	4.	Rank Order from Survey 2: 2		
5.	Rank from Top 3 Importance: 1	6.	Mean from Survey 3: 2.44		
7.	Final Rank for Your Child, External, Hindered: 1				
8.	Qualitative Category: Family Involvement/Problems	9.	Research Question Informed: 1,2		
Examples from Unique Response Items: 1. No father figure 2. Divorce 3. Rape/Pregnancy 4. Mother's substance abuse					

Figure 7. *Your Child – External – Hindered: Number 1 Most Important*

My faith helped me succeed.					
1.	Number of Unique Responses: 49	2.	Persons Who Said It: # 49	36.03%	
3.	Mean from Survey 2: 4.43	4.	Rank Order from Survey 2: 3		
5.	Rank from Top 3 Importance: 1	6.	Mean from Survey 3: 4.59		
7.	Final Rank for Yourself, Internal, Contributed: 1				
8.	Qualitative Category: Spiritual/Faith	9.	Research Question Informed: 1,2,3,4		
Examples from Unique Response Items: 1. Having a relationship with the Lord 2. Faith in God 3. Belief in God to guide me 4. Inspired by God to keep pushing					

Figure 8. Yourself – Internal – Contributed: Number 1 Most Important

I received lots of support from my family.					
1.	Number of Unique Responses: 101	2.	Persons Who Said It: # 111	81,62%	
3.	Mean from Survey 2: 3.82	4.	Rank Order from Survey 2: 1		
5.	Rank from Top 3 Importance: 1	6.	Mean from Survey 3: 4.23		
7.	Final Rank for Your Child, External, Contributed: 1				
8.	Qualitative Category: Family Involvement/Problems	9.	Research Question Informed: 1,2		
Examples from Unique Response Items: 1. Mother made sure I did well 2. Love and support from parents 3. Extended family 4. High expectations from family					

Figure 9. Yourself – External – Contributed: Number 1 Most Important

I was fearful in my quest for education.					
1.	Number of Unique Responses: 20	2.	Persons Who Said It: # 20	14.71%	
3.	Mean from Survey 2: 2.22	4.	Rank Order from Survey 2: 2		
5.	Rank from Top 3 Importance: 1	6.	Mean from Survey 3: 2.69		
7.	Final Rank for Yourself, Internal, Hindered: 1				
8.	Qualitative Category: Positive or Negative Personal Traits	9.	Research Question Informed: 1,2		
Examples from Unique Response Items: 1. Fear of failure 2. Failure to follow through 3. Fear of success 4. Scared of change					

Figure 10. Yourself – Internal – Hindered: Number 1 Most Important

A lack of finances hindered my ability to succeed.					
1.	Number of Unique Responses: 39	2.	Persons Who Said It: # 39	28.68%	
3.	Mean from Survey 2: 3.20	4.	Rank Order from Survey 2: 1		
5.	Rank from Top 3 Importance: 1	6.	Mean from Survey 3: 2.67		
7.	Final Rank for Yourself, External, Hindered: 1				
8.	Qualitative Category: Lack of Resources	9.	Research Question Informed: 2,3,5		
Examples from Unique Response Items: 1. Financial issues 2. Finances 3. Lack of money 4. Lack of funds					

Figure 11. Yourself – External – Hindered: Number 1 Most Important

Table 1
Participant Demographic Information by Church

Characteristics	A (n=61)	B (n=47)	C (n=43)	D (n=36)	E (n=40)
Gender					
Male	10	13	4	6	7
Female	51	34	39	30	33
Total	61	47	43	36	40
Ethnic-Background					
Hispanic American	0	0	0	0	0
American Indian	0	1	0	0	0
Asian American	0	0	0	0	0
African American	61	45	43	36	40
European American	0	0	0	0	0
Other	0	1	0	0	0
Total	61	47	43	36	40
Marital Status					
Married	37	27	14	21	15
Widowed	3	7	0	1	8
Divorced	11	9	17	10	6
Separated	6	1	4	4	3

(table continues)

Characteristics	A (n=61)	B (n=47)	C (n=43)	D (n=36)	E (n=40)
Never Married	4	2	6	0	6
Living w/Partner	0	1	2	0	2
Educational Background					
High school graduate or GED	17	14	5	7	7
Post-secondary but no degree	29	11	19	14	24
Associate or Bachelors degree	12	20	14	15	7
Graduate degree	3	2	5	0	2
Number of children who graduated from high school					
Male	72	56	46	43	34
Female	66	43	59	39	40
Total	138	99	105	82	74
Children in Special Education	9	9	3	2	7

Table 2

*Prompts For Round One of the Delphi**About Yourself*

1. **About Yourself Internal Contributed:** Please list three *internal characteristics* of yourself that have contributed to your success.
2. **About Yourself Internal Hindered:** Please list three *internal characteristics* of yourself that have hindered your success.
3. **About Yourself External Contributed:** Please list three *external forces* that have contributed to your success.
4. **About Yourself External Hindered:** Please list three *external forces* that have hindered your success.

About Your Child

1. **About Your Child Internal Contributed:** Please list three *internal characteristics* of your child who graduated from high school that have contributed to his or her success.
2. **About Your Child Internal Hindered:** Please list three *internal characteristics* of your child who graduated from high school that have hindered his or her success.
3. **About Your Child External Contributed:** Please list three *external forces* of your child who graduated from high school that have contributed to his or her success.
4. **About Your Child External Hindered:** Please list three *external forces* of your child who graduated from high school that have hindered his or her success.

Table 3

About Yourself Final Categories and Themes

Prompt	Category	Associated Research Theme (Question)
Internal Contributed	Spiritual/Faith	Individual Characteristics
	Positive/Negative Personal Traits	Relationship Characteristics
		Community Characteristics
		Cultural Characteristics
Internal Hindered	Positive/Negative Personal Traits	Individual Characteristics
External Contributed	Family Involvement/Problems	Individual Characteristics
	Positive Educational Supports	Relationship Characteristics

		Physical Ecology Characteristics
External Hindered	Family Involvement/Problems	Individual Characteristics
	Lack of Resources	Relationship Characteristics
		Community Characteristics
		Physical Ecology Characteristics

Table 4

About Your Child Final Categories and Themes

Prompt	Category	Associated Research Theme (Question)
Internal Contributed	Spiritual/Faith	Individual Characteristics
	Positive/Negative Personal Traits	Relationship Characteristics
		Community Characteristics
		Cultural Characteristics
Internal Hindered	Positive/Negative Personal Traits	Individual Characteristics
External Contributed	Family Involvement/Problems	Individual Characteristics
	Spiritual/Faith	Relationship Characteristics
	Positive Educational Supports	Cultural Characteristics
		Community Characteristics
		Physical Ecology Characteristics
External Hindered	Family Involvement/Problems	Individual Characteristics

Inappropriate Behaviors	Relationship Characteristics
	Community Characteristics
	Cultural Characteristics

Intentionally Left Blank

Blending Common Core Standards and Functional Skills in Thematic Units for Students with Significant Intellectual Disabilities

**Karena Cooper-Duffy
Western Carolina University**

**Glenda Hyer
Western Carolina University**

Abstract

Many teachers who educate students with significant intellectual disabilities struggle with the requirements for teaching academics linked to the Extended Common Core State Standards (ECCSS, 2010) while also balancing the need to teach functional skills. This article provides a practical way of creating thematic units that focuses on functional skill topics to teach both academics linked to the ECCSS (2010) and functional skills in small groups. A detailed description on how to collaborate with all stakeholders to create a thematic unit about a functional skill topic to teach both academics and functional skills are provided. The article also includes examples of: (a) a lesson plan, (b) vocabulary words, (c) task analysis of a functional skill, (c) systematic instruction plan, and (d) data collection sheets.

Blending Common Core Standards and Functional Skills in Thematic Units for Students with Significant Intellectual Disabilities

My name is Amanda Gandy and I am a special education teacher at Sims Elementary School. I teach students who are in kindergarten through second grade all in a self-contained classroom. The students have severe intellectual disabilities, autism, multiple disabilities, and physical as well as sensory disabilities. Students in these categories have limitations in both intellectual functioning and adaptive behavior, and the disability originate before 18 (AAIDD Ad Hoc Committee on Terminology and Classification, 2010). The students have inclusive opportunities in general education during art, music, recess, and lunch for about 25% of the day.

I have been teaching in the field of special education for ten years. Over the last five years, the administration placed greater emphasis on teaching students with the most significant intellectual disabilities academics linked to the Extended Common Core State Standards (ECCSS, 2010). Therefore, I need to teach the kindergarten through second grade content from ECCSS (2010) so the students will have building blocks needed to master the third grade content next year and pass the alternate assessment.

To complicate matters, I struggle with the issue of teaching academic content because my students desperately need intensive daily instruction on skills such as: (a) eating, (b) dressing, (c) tooth brushing, (d) toileting, and (c) hand washing. After teaching these skills, there is little time left in the day to teach academics, especially academics from the ECCSS (2010). Furthermore,

families of the children stress teaching functional skills and require these skills be placed in the IEP. How can I possibly teach both the academics from the ECCSS (2010) and the critical functional skills each day? How can I justify time needed to teach complex academic skills to my students, and not teach the functional skills that my students need? I know from research literature that systematic instruction strategies are most effective with teaching personal care skills (Westling & Fox, 2009) and functional academics such as: (a) reading sight words, (b) money skills, (c) telling time, (d) number recognition, and (e) measurement (Browder & Spooner, 2011). The problem is these skills are normally taught in isolation as discrete skills or chained skills taught in daily context. Over the summer, I will consult the research literature and experts in the field to create a plan to address these problems. I will show how I addressed these issues at the end of the article.

Concerns from the Researchers

Although evidence based practices are slowly emerging to teach the ECCSS (2010) to students, there are still numerous questions about what strategies should be used to teach the complex and abstract academic skills that are on the ECCSS (2010). Like Mrs. Gandy the researchers in the field are struggling with the same questions. The strongest example of the conflict in the field comes from researchers Ayres, Lowery, Douglas and Sievers (2011), and Courtade, Spooner, Browder, and Jimenez (2012). Ayres, et al. (2011) emphasize the need to maintain a functional curriculum approach as the priority when developing curricula for students with severe disabilities so they will develop independence in current and future environments. Courtade, et al. (2012) emphasize that a standards-based curriculum provides students with severe disabilities a full educational opportunity and does not preclude instruction that is personally relevant. Evidence from the leading researchers in the field will be compiled in the following section to show teachers how to use thematic units and evidence based practices to teach both ECCSS (2010) and functional skills.

Thematic Model

The following thematic, seven step, blended model can be used to teach students with significant intellectual disabilities both ECCSS (2010) and functional skills. The thematic unit can be adapted for academic instruction, so that all students can participate. Below is a list of the seven steps, with an in-depth description to follow:

1. Develop an age-appropriate thematic unit based on a functional skill.
2. Identify academic and functional skills to teach in the unit.
3. Collaboratively write the unit with four lesson plans.
4. Select key concepts and vocabulary for the unit.
5. Collect and adapt materials to ensure accessibility for all students.
6. Select evidence based practices to teach skills.
7. Collect and evaluate data on skill acquisition.

Step One

Select an age appropriate theme based on a functional skill and use thematic units to teach the lessons (Cooper-Duffy, Szedja, & Hyer, 2010; Smith, Demarco & Worley, 2009). Thematic units

are defined as effective instruction organized around a central topic, idea, or theme that uses related activities and experiments to provide in-depth learning experience (Gardner, Wissick, Schweder, & Carter, 2003). Smith, et al., (2009) state that a basic theme is selected and all other subjects are connected to that theme. This approach enhances student understanding by creating opportunities for skill synthesis, generalization, ongoing practice, and increased attention to cues (Cooper-Duffy, et al., 2010). Students can attend to and make connections to key concepts instead of trying to retain isolated pieces of information for simple factual recall (Smith, et al., 2009). A variety of topics regarding personal care or functional skills can be selected. The thematic unit can include such topics as: (a) eating, (b) hand washing, (c) dressing, (d) tooth brushing, (e) first aid, (f) cooking, (g) domestic skills, (h) purchasing, (i) employment, (j) bus riding, and (k) communication (Ford, Schnorr, Meyer, Davern, Black & Dempsey, 1989; Giangreco, Cloninger, & Iverson, 1998; Wehman & Kregel, 1997). Selected topics for the unit should be appropriate for the age and interest of the student. Once the theme is selected, appropriate skills from the ECCSS (2010) can be incorporated into the unit.

Step Two

Identify possible academic and functional skills that can be taught in the unit. These skills should be listed and inserted in the lesson plans as instructional objectives. The special education teacher will have a list of the IEP goals that match the functional and academic skills student need to learn that relate to the skills taught in the thematic unit. The special education teacher will also have a list of the interests, strengths, needs and adaptations for the students. These items are helpful in planning instruction for students participating in the unit.

The general education teacher can then select objectives based on ECCSS (2010) that relate to the lessons in the unit. Examples of objectives from ECCSS (2010) may include: (a) identify key details in a familiar story, (b) answer questions about key details in a familiar story, or (c) identify the print as part of the book to be read. All these objectives can be used to teach language arts regardless of the content in the theme. Some math objectives may include: (a) number of objects in one group is more, less, or equal to the number of objects in another group, (b) count to answer how many objects, or (c) counting from 1-10. These math objectives can be taught regardless of the functional skill taught in the thematic unit. All goals can be embedded into the lesson plans at the appropriate locations in the lesson to ensure opportunities for practice.

Step Three

With the aid of the general education teacher, librarian and related services, the special education teacher should write the thematic unit with at least four lesson plans in the unit. To provide students with repetition and practice, one lesson plan would be taught daily for a week (see Figure 1). The lesson plans should contain: (a) objectives, (b) materials, (c) motivators, (d) attention getters, (e) introductory statement, (f) guided practice instructional sequence, (g) independent practice opportunities, (h) closure statement, and (i) assessments (Smith et al., 2009). The activities in the lesson should enable the students to explore the unit theme and provide practice on the IEP goals (Cooper-Duffy, et al., 2010). Examples of activities can be pointing to vocabulary words to answer a comprehension question, using eye gaze to follow along with the story, selecting a question mark on a card to complete a sentence, grabbing a tooth brush to start the sequence of tooth brushing or using a voice output device to read the repeated line of a book.

All lesson plans can include a list of materials needed to teach the lessons. All lessons can include a book that provides information about the theme to the students. Many educators recognize that it is possible to locate a book about almost any topic. The topic of personal care is no different. Teachers are beginning to teach emergent literacy, science, math, and writing skills while also teaching functional skills. Teachers can identify books and create thematic units teaching these self-care skills while also meeting IEP goals for students.

Step Four

Select key vocabulary and key concepts that students should learn during the unit (Smith et al., 2009). The number of key vocabulary words/pictures will vary according to the individual needs of each student. When teaching vocabulary for functional skills, words can include nouns or objects the student will need to use to complete the functional task (see Figure 2). The vocabulary words and key concepts should be in the stories. The words selected should also be words the student can use to communicate their functional needs. Once vocabulary words are identified, systematic instruction using time delay should be used to teach the words to the students within the context of the lessons. Peers can also point to the words and help students learn the words through incidental learning opportunities. Teaching the words in the context of the lessons and the context of the functional routine can help the students understand the meaning of the words and apply the concepts of the functional skills to daily living. Smith et al, (2009) recommends vocabulary words should be selected for the following reasons: (a) the word is important to the overall understanding of the literature or theme, (b) the word is present in the literature and teaching it in content will increase the likelihood that it will be learned, (c) there is a need to increase the understanding of certain types of words, (d) student have a right to know all kinds of words, and (e) the word will increase a student's conversational skills and make it possible to communicate with others. Once the vocabulary list is generated the teacher adapts the presentation of the vocabulary for each student and teaches the words with constant time delay.

Browder, Ahlgrim-Delzell, Courtade-Little and Snell (2006) describe and illustrate how instruction can be differentiated for students at a presymbolic, early (concrete) symbolic, and expanded (abstract) symbolic level. Browder, Spooner, Wakeman, Trela, & Baker., (2006) developed a procedure known as "*Work it Across*", this procedure starts with a standard from the ECCSS (2010) and then shows how each level of student could participate in learning that skills using their level of communication. Some students at the presymbolic communication level will need the objects to learn the words and the meaning of the word. The object with text on it is needed to teach the student the word. Students at this level will be learning symbol use or the meaning of pictures (Browder, & Spooner, 2011). Other students at the early (concrete) symbolic level of communication level will need symbols or pictures that illustrate the word and the word under the picture (Browder, & Spooner, 2011). Finally students at the abstract symbolic level of communication already recognize symbols, mastered some sight words, numbers and other symbols and will need just the words in print (Browder, & Spooner, 2011).

Step Five

Create materials that will enable students to access academic and functional skill content. Some students will need adaption for the books. The books can contain highlighted vocabulary words to help students attend to the key vocabulary. A piece of Velcro® can be placed on the edge of

each page of the book to help facilitate turning of the page. A repeated line (e.g. *When I **wash** my **hands** with **soap***) that includes a key vocabulary word can be placed on every other page of the book, so students can participate in reading along using a voice output device (e.g. Big Mac device programmed with the repeated line). Videos related to the books on how to complete the functional skills can be used to model and reinforce the story. Pictures of the functional skills should be placed in the environment as a visual reminder and offer quick review of the vocabulary (see Figure 3). Other types of adaptations include vocabulary sheets for sentence starters or fill-in-the-blank sentences used for writing activities. Adapted line graphs can be used for math lessons so students can graph daily progress.

Step Six

Evidence-based practices are used to best teach skills from the IEP and ECCSS (2010). When writing daily lesson plans, systematic instruction is needed to teach goals (Browder & Spooner, 2011). Hyer (2012) used constant time delay to teach emergent literacy skills and the system of least prompts to teach hand washing skills to students with significant intellectual disabilities. When teaching the emergent literacy skills the teacher can use constant time delay with age appropriate books and vocabulary sheets. Constant time delay is used for teaching discrete skills such as: (a) answering comprehension questions, (b) identifying vocabulary words, and (c) reading a repeated line. Constant time delay is conducted when the teacher presents an initial attention cue and points to a specific vocabulary word. The teacher immediately points to the vocabulary words, says the word and reinforces the student for responding correctly (zero delay). This sequence is repeated for all the words. Next, the teacher presents the initial cue and waits five seconds to see if the student could independently identify the correct vocabulary words. Independent and correct responses are reinforced and errors are corrected with the initial zero delay prompting. Peer groups can be used to take turns reading the pages of the books and the students read the repeated storyline.

Once the emergent literacy skills are taught, the teacher will instruct the student individually on the functional skill. When teaching a functional skill, the system of least prompts can be used to teach chain skills (Westling & Fox, 2009). The system of least prompts is a hierarchy of prompting that uses at least four levels of prompts (picture, gesture, specific verbal, nonspecific verbal partial physical or full physical prompts) to instruct the student on each step of the chained skill. Examples of chained skills can include: (a) tooth brushing, (b) hand washing, (c) dressing, (d) eating, (e) following picture recipe, (f) grocery shopping, (g) using an ATM, (h) interviewing with an employer or (i) using a cell phone to call 911. The teacher first writes the steps of the task analysis, and then plans the hierarchy of prompts that match the student's learning style. The teacher uses that series of prompts on each step until the student responds. Planning for systematic instruction should be done for the critical skills that need to be mastered by students during instruction on the theme.

Step Seven

Each of the skills taught during the unit can be evaluated for progress during the unit. IEP goals and goals from the ECCSS (2010) can be evaluated, and data can be collected at least three times a week. For each systematic instruction plan, an accompanying data sheet can be used to collect data (see Figure 4 & 5). Frequency count can be used to collect data on the number of vocabulary words mastered for each student, the number of questions answered correctly about

the story, the number of times the correct punctuation was selected, and the number of time the tooth paste was selected. A task analytic data sheet can be used to collect data on each step of the tooth brushing (see Figure 6), the number of steps the student performed correctly while graphing, the number sentences written correctly. Pretest, midterm and posttest data can also be collected on the number of vocabulary words mastered or the number of comprehension questions answered correctly. Paraprofessionals can also collect data on the number of words identified correctly before the unit, during the unit, once a week or after completion of the unit. It is important to practice with the paraprofessionals on how to collect accurate data. According to Cooper-Duffy, et al (2010) a checklist can assist the teacher and the paraprofessionals to remember the sequence of steps when teaching the lesson and which students to prompt at each step of the lesson. As the professionals are conducting the lesson, they can easily record the progress of the student on the checklist (Cooper-Duffy, et al., 2010). The professionals can enter a + (plus) for independent and correct responses the student made and a (-) minus for the responses the student did not make correctly (Cooper-Duffy, et al., 2010).

Application

After I consulted the research literature and collected current knowledge about teaching the ECCSS (2010) I felt ready to attack the problem of teaching both the functional and academic skills. I started the school year by creating a thematic unit for my students. Each month, I target specific skills for each student. In October, the school offered a promotion on dental hygiene and I took the opportunity to create a thematic unit on tooth brushing to go along with the school wide promotion.

I decided to collaborate with the general education teachers and related service specialists to create a thematic unit called “Lets Brush our Teeth!” Together they wrote lesson plans for four weeks. I asked the general education teacher questions about what skills were required for those grades, and how to teach the skills from the general curriculum. I also asked about strategies and tools that I could use to help teach the academic skills. The general education teachers offered ideas such as: (a) word walls, (b) graphic organizers, (c) writing sentences with punctuation, and (d) graphing for math. In addition, the general education teachers offered ideas about how to embed these skills into the thematic unit. I then asked the related service personnel who supported her students for suggestions on adaption of materials. The speech and language pathologist recommended some augmentative devices and picture word cards to help teach the vocabulary words. The occupational therapist recommended some devices and approaches to help with tooth brushing and with the writing activities.

After the group finished planning the thematic unit, I immediately went to the librarian and located the books I needed to teach the unit. I selected the following books: “*Brushing My Teeth!*” (D.K Publisher, 2007), and “*The Lion Who Wouldn't Brush his Teeth*” (Field, 1998). I was concerned about the age appropriateness of the books selected, so I created some books that included the steps to show how to brush your teeth. To include the books in the reading selection for the kindergarten through second grade level, I measured the grade level of each teacher created book using the Fry readability graph (Fry, 1977).

I asked my teacher assistant to locate several movies about how to brush your teeth, which would reinforce the information learned from the books. Once the students read a book about brushing their teeth, they immediately watched a movie about brushing teeth. The movie showed people completing the steps of brushing their teeth to further explain proper tooth brushing and hygiene. In addition, I used a large model of a mouth and toothbrush to demonstrate the steps of the tooth brushing task analysis and had the students take turns practicing while I prompted them with the system of least prompts.

I included the ECCSS (2010) skills related to the thematic unit. The ECCSS (2010) skills included both language arts and math. Using the thematic unit of tooth brushing, I worked on the K-2 Language Arts goals of (a) answer questions about key details in a familiar story, (b) identify the front cover of the book, and (c) match similar experiences of characters in familiar stories. I also incorporated the following ECCSS (2010) math goals into my thematic unit: (a) count forward using the 1-10 sequence, (b) understand the relationship between numbers and quantities (0-10); connect counting to cardinality, and (c) use data to answer questions about the total number of data points and whether there are more or less in one category than in another. Finally, I incorporated IEP goals into the thematic unit of tooth brushing which included (a) initiating communication about a need, (b) wiping the face, and (c) hand washing.

I knew that teaching the functional skill of brushing teeth would work best when the families were involved. I created packets for each family that included the list of books about tooth brushing and the dates when the family should read each book for homework. The packet also included directions on how to read the books to the students. The picture task analysis for teaching the steps of tooth brushing and directions were also in the packet. A chart and schedule for the family to record the results of each time the student brushed his or her teeth were added.

I always teach each unit with a letter of the alphabet. In this unit, I used the letter T for toothbrush. I made a vocabulary sheet for each student using the software program called, Boardmaker® and included several words that began with the letter T. The picture task analysis contained the directions of how to brush your teeth. The task analysis was posted in the classroom during thematic unit instruction and in the bathroom beside the sink. In addition, the task analysis was sent home for homework for each student. I planned to use the system of least prompts to teach the task analysis for tooth brushing with each student individually. Each student would receive one-to-one instruction in the bathroom on how to brush his or her teeth. All other instruction would take place in the classroom as a small group. The teacher assistants were instructed on how to prompt the students through the tooth brushing task analysis. Each adult selected two to three students to instruct on how to brush their teeth so all students had ample opportunity to practice.

I created individual data sheets for each student to record the results of tooth brushing instruction. Pretest and post test data were collected on the number of vocabulary words mastered for each student and the percentage of correct responses on the tooth brushing task analysis (Figure 7 & 8). Finally, I created writing activities that used graphic organizers, sentence starters, and the key vocabulary to create sentences with punctuation about tooth brushing. To address punctuation, I created picture cards of periods, question marks, and exclamation points for the students. Once a student selected a vocabulary word to add to the

sentence starter, they were also asked to select the correct punctuation card to complete the sentence. Some students were given the period and a blank card and asked to pick the period to end the sentence. Others were given a choice between a period, question mark or an exclamation point. The lesson was taught for one month using the lesson plans. Throughout the unit, I brainstormed ideas and problem solved with my team as issues arose. Overall, I was able to combine both academic skills linked to the ECCSS (2010) and functional skills in one thematic unit.

Conclusion

Teaching both academic and functional skills can be overwhelming for special education teachers. Using a thematic unit that combines both academic with functional skills instruction can be used to effectively teach students with significant intellectual disabilities. Special education teachers like Mrs. Gandy can teach emergent literacy skills, math skills and science skills linked to the ECCSS (2010) using thematic unit approach making learning successful and efficient. The process to create a thematic unit on functional skills has seven steps. Special education teachers develop an age-appropriate thematic unit based on a functional skill. The teachers then identify academic and functional skills to teach in the unit. Together the special education and general education teachers collaboratively write the unit with four lesson plans. The teachers will select key concepts and vocabulary for the unit. Once the unit is written and planned the teachers and specialists will collect and adapt materials to ensure accessibility for all students. The special education teacher will select evidence based practices to teach skills. Specific skills include constant time delay and the system of least prompts. Finally data can be collect and to evaluate the student skill acquisition on the IEP goals, and ECCSS (2010) to show progress.

References

- AAIDD Ad Hoc Committee on Terminology and Classification. (2010). *Intellectual disability: Definition, classification and systems of supports* (11th ed.). Washington, DC: American Association on Intellectual and Developmental Disabilities.
- Ayres, K.M., Lowery, K.A., Douglas, K.H., & Sievers, C. (2011). I can identify Saturn but I can't brush my teeth: What happens when the curricular focus for students with severe disabilities shifts. *Education and Training in Autism and Developmental Disabilities*, 46, 11-21.
- Browder, D.M., Ahlgrim-Delzell, L., Courtade-Little, G.R. and Snell, M. (2006). Access to the general curriculum. In M. Snell & F. Brown (Eds.), *Instruction of students with severe disabilities* (6th ed., pp. 489-525). Upper Saddle River, NJ: Merrill/Prentice-Hall.
- Browder, D., & Spooner, F. (2011). *Teaching students with moderate and severe disabilities*. New York, NY: Guilford Press.
- Browder, D.M., Spooner, F., Wakeman, S.Y., Trela, K., & Baker, J. (2006). Aligning instruction with academic content standards: Finding the link. *Research and Practice for Persons with Severe Disabilities*, 31, 309-321.
- Cooper-Duffy, K., Szedja, P. & Hyer, G. (2010). Teaching literacy to students with

- cognitive disabilities. *Teaching Exceptional Children*, 43(3), 30-39.
- Courtade, G., Spooner, F., Browder, D. M., & Jimenez, B. (2012). Seven reasons to promote standard based instruction for students with severe disabilities: A reply to Ayres, Lowery, Douglas & Sievers, (2011). *Education and Training in Autism and Developmental Disabilities*, 47, 3-13.
- Extended Common Core State Standards. (ECCSS, 2010). North Carolina Department of Education. Retrieved February 13, 2013 from <http://www.ncpublicschools.org/acre/standards/>
- D.K Publisher. (2007). *Brush my teeth!* New York, NY: D.K Publishers.
- Field, T. (1998). *The lion who wouldn't brush his teeth*. University of Michigan: Dental Publications
- Ford, A., Schnorr, R., Meyer, L., Davern, L., Black, J., & Dempsey, P. (1989). *The Syracuse Community-Referenced Curriculum Guide for Students with Moderate and Severe Disabilities*. Baltimore, MD: Brookes Publishing.
- Fry, E. (1977). Fry's readability graph: Clarification, validity and extension to level 17. *Journal of Reading*, 21, 242-252.
- Gardner, J. E., Wissick, C. A., Schweder, W., & Canter, L. S. (2003). Enhancing interdisciplinary instruction in general and special education. *Remedial & Special Education*, 24(3), 161-173.
- Giangreco, M., Cloninger, C., & Iverson, V. (1998). *Choosing Outcomes and Accommodations for Children (2nd Edition)*. Baltimore, MD: Brookes Publishing.
- Hyer, G. (2012) Functional story-based instruction about hand washing to teach emergent literacy and hand washing skills to three elementary students with significant intellectual disabilities. (Doctoral dissertation, Liberty University) retrieved from DigitalCommons (586).
- Smith, D., Demarco, J., & Worley, M. (2009). *Literacy beyond picture books: Teaching secondary students with moderate to severe disabilities*. Thousand Oaks, CA: Corwin.
- Westling, D. & Fox, L. (2009). *Teaching students with severe disabilities*. (4th ed.). Upper Saddle River, NJ: Merrill/Prentice Hall
- Wheman, P. & Kregel, J. (1997). *Functional Curriculum for Elementary, Middle and Secondary Age Students with Special Needs*. Austin, TX: Pro-Ed

Figure 1

Example Lesson Plan of Lets Brush Our Teeth!

Teacher Mrs. Gandy Grade(s) K -2 Subject: Reading, Writing and Math
Date(s) 10/06/2012 General Objective Tooth brushing, reading, sentence writing,
graphing and counting

PREPRATION PLANNING
<u>Behavior Objectives:</u> Understanding simple symbol written directions. Putting data on a graph and counting. Learning vocabulary with picture/text. Participation in writing behavior by completing a sentence strip with a picture vocabulary card and adding punctuation. Awareness of story being read. Learning to brush teeth. Learning the steps of brushing teeth. <u>Student Material</u> Picture /word vocabulary sheet Books about tooth brushing Big Mac switch Cheap talk 4 Model of Mouth and Toothbrush Movies <u>Motivators</u> Placing stickers on the graph for brushing teeth. Verbal praise during independent and correct emergent literacy lessons. Verbal praise for demonstrating steps of the task analysis.
IMPLEMENTATION PLANNING
<u>Focus and Review Including a Statement of Objective</u> Let's Brush Our Teeth! The teacher uses the model of the mouth and the toothbrush to introduce the lesson. This month we are going to learn how to brush our teeth. We are going to read stories about brushing our teeth, watch movies, and practice using the mouth and toothbrush. We are also going to earn stickers this month and put them on our graph. Put on music and sing brush, brush, brush our teeth song. <u>Teacher Input and Guided Practice Sequence</u> 1. Teacher will distribute vocabulary sheets and review vocabulary with zero time delay 2. Teacher will read one book about tooth brushing. (One story per week) 3. Teacher will show movie about tooth brushing 4. Teacher will use the model to review how to brush your teeth. 5. Class will break into groups and each child will be taken individually to the sink to practice brushing his or her teeth using the system of least prompts and the picture task analysis 6. The child will place a star sticker on the graph for brushing teeth. The class will count

the stickers

7. The teacher provides sentence starters, picture/text vocabulary cards and punctuation card to students.
8. The teacher will prompt students during small groups to complete sentence with vocabulary and correct punctuation.

Independent practice

Each student will be taken to the bathroom to practice brushing his or her teeth after morning group, breakfast and lunch. For homework, each student will practice brushing his or her teeth using the tooth brushing task analysis and system of least prompts. The family will take data on the independent and correct tooth brushing behavior of their child.

EVALUATION PLANNNING

Formative/ Progress

Frequency data on the number of vocabulary words each student correctly points to or verbalizes will be collected 3 times per week.

Percent accuracy data on the steps completed on the brushing teeth task analysis.

Frequency data on the number of stars the student places on the graph daily.

Frequency data on the number of sentences the student complete will be collected as products.

Summative/Mastery

The student will learn 50% of the picture/text vocabulary.

The student will learn to brush his or her teeth with 50% mastery.

The student will place a sticker on the graph to record 50% accuracy on independent tooth brushing behavior.

The student will participate in writing sentence with 50% accuracy.

Figure 2
Vocabulary Words for Thematic Unit

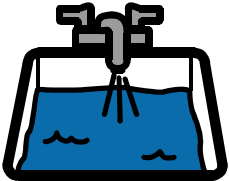
T	toothpaste 	toothbrush 
toothpaste cap 	water on 	brush 
sink 	teeth 	wipe mouth 

Figure 3

Task Analysis Text/Picture Cues

Go to the bathroom sink 
Pick up toothpaste 
Open cap of toothpaste 
Pick up toothbrush 
Turn on water 
Wet toothbrush 
Apply toothpaste to toothbrush 
Brush all parts of the teeth 
Spit the toothpaste 
Rinse toothbrush 
Close cap on toothpaste 
Turn off water 
Put toothpaste and toothbrush back in place 
Wipe Mouth 

Figure 4

Systematic Instruction for Vocabulary Words

SYSTEMATIC INSTRUCTION PLAN (SIP)	
Student: <u>Sandra</u>	Date Plan Started: <u>8/10/12</u>
Target skill <u>Tooth Brushing</u>	Routine: <u>Reading skills</u>
Specific Objective: <u>Sandra will show comprehension of new concepts by pointing to picture/text cards that represent that concept with 70% accuracy</u>	
Materials: <u>toothbrush, toothpaste, sink, picture vocabulary list.</u>	
Setting and Schedule for Instruction: <u>During reading class, after breakfast and lunch</u>	
Number of Trials: <u>Five trials at zero delay for three days, two warm up trials at zero delay and three trials at five-second delay for one day, five second delay only for one day.</u>	
Instructional Procedure	
PROMPTING	
Specific Prompt or prompts to Be Used (List in sequence):	
1. <u>Specific verbal and point</u>	
Type of Prompt System (Check which applies)	
☐ System of Least Prompts	
☒ Time Delay ☒ Constant OR ☐ Progressive	
☐ Most to Least intrusive prompts	
☐ Graduated guidance	
Fading Schedule for Time Delay: <u>five-second delay</u>	
FEEDBACK	
Correct Responses: <u>Great pointing to the word toothbrush.</u>	
Fading schedule for praise: <u>Only praise after every five items identified correctly</u>	
Error Correction: <u>No, that is sink not toothbrush. Point to the toothbrush. Return to zero delay practice sessions.</u>	
Generalization & Maintenance Plan: <u>Sandra will point to the toothbrush during teeth brushing after breakfast and lunch.</u>	

Figure 5

Systematic Instruction Plan for Tooth Brushing

SYSTEMATIC INSTRUCTION PLAN (SIP)

Student: Mat Date Plan Started: 8/10/12
Target skill: Tooth brushing Routine: Personal Care

Specific Objective Mat will brush his teeth with 90% for 3/3 sessions in the school bathroom.

Format

Materials: toothbrush, toothpaste, sink, paper towels, picture task analysis
Setting and Schedule for Instruction: After reading lesson, breakfast and lunch

Number of Trials: 6 trials per day

Instructional Procedure

PROMPTING

Specific Prompt or prompts to Be Used (List in sequence):

1. gesture/picture 2. nonspecific verbal 3. specific verbal 4. full physical

Type of Prompt System (Check which applies)

- ☒ System of Least Prompts
☐ Time Delay ☐ Constant or ☐ Progressive
☐ Most to Least intrusive prompts
☐ Graduated guidance

FEEDBACK

Correct Responses: Yeah, great brushing your teeth

Fading schedule for praise: Only offer reinforcement when he completes difficult steps.

Error Correction "No" and full physical correction.

Generalization & Maintenance Plan: Teach both at school and at home.

Figure 6*Data sheet For Tooth Brushing Task Analysis*

Standard Fill-in
Data Collection Graph Form

Behavior: <u>Toothbrushing</u>		Name: <u>Matt</u>		Mastery: 90% for 3/3 ses 90% for 3/3 sessions		
	100					
	90					
	80					
	70					
	Wipe mouth					
	Put toothpaste and toothbrush back in place	60				
	Close cap of toothpaste					
	Turn off water	50				
	Rinse brush					
	spit the toothpaste	40				
	Brush all parts of the teeth					
	Apply toothpaste to toothbrush	30				
	Wet toothbrush					
	Turn on water	20				
	Pick up toothbrush					
	Open cap of toothpaste	10				
	pick up toothpaste					
	go to the bathroom sink	0				

of Independent and Correct Responses

Previous X=

Previous Descision=

Date:**Trend****Mean**

Figure 7

Mastery of Vocabulary Words Students	Pretest Score	Posttest Score
Mary	33%	92%
Denny	33%	41%
Helen	8%	33%
Irby	8%	50%
Dean	75%	100%
Total Average	31%	63%

Figure 8

Percentage of steps of tooth brushing skill Student	Pretest Score (% of goal)	Posttest Score (% of goal)
Mary	60%	100%
Denny	10%	40%
Helen	0%	20%
Irby	N/A	N/A
Dean	100%	100%
Total Average	42.5%	65%

Intentionally Left Blank

Effects of Peer Tutoring and Academic Self-Monitoring on the Mathematics Vocabulary Performance of Secondary Students with Emotional or Behavioral Disorders

Brittany L. Hott
Texas A&M University- Commerce

Anya Evmenova
George Mason University

Frederick J. Brigham
George Mason University

Abstract

This study examined the effects of reciprocal peer tutoring coupled with academic self-monitoring on the mathematics vocabulary acquisition of students with emotional or behavioral disabilities (EBD). Six middle school students from diverse backgrounds with EBD attending a public, urban middle school participated in the study. A rigorous multiple baseline across student dyads design was implemented. Results indicated that reciprocal peer tutoring coupled with academic self-monitoring increased assignment completion. Further, results of vocabulary and cumulative test scores indicated that students increased their math vocabulary during the intervention phase. Social validity data indicated that students and teachers felt they benefited from both peer tutoring as well as academic self-monitoring interventions. Limitations and directions for future research are discussed.

Effects of Peer Tutoring and Academic Self-Monitoring on the Mathematics Vocabulary Performance of Secondary Students with Emotional or Behavioral Disorders

According to the United States Department of Education (USDOE, 2004), students qualify for special education services under the emotional disturbance classification due to a pervasive mood of unhappiness or depression, an inability to establish satisfactory interpersonal relationships, and/or abnormal behaviors under routine circumstances that cannot be explained by sensory, intellectual, or other health factors. While these deficits co-morbidly impact both educational and social progress (Montague, Enders, Cavendish, & Castro, 2011, Wiley, Siperstein, Forness, & Brigham, 2010), the field has debated how to best address behavioral and academic deficits (Lane, Wehby, & Cooley, 2006).

Despite a clear need for academic supports for students with emotional behavioral disabilities (EBD), research endeavors have historically focused on determining how behavioral supports can be used to promote access to the general curriculum (Kauffman & Landrum, 2005; Templeton, Neel, & Blood, 2008). In the area of mathematics, students with EBD exhibit large achievement deficits that remain stable or worsen over time. A study by Nelson, Benner, Lane, and Smith (2004) demonstrated that math performance of students with behavioral disabilities was higher than students with learning disabilities in kindergarten; yet, by fifth and sixth grade, students with behavioral disabilities were performing significantly below students with learning

disabilities. Further, Siperstien, Wiley, and Forness (2011) found that academic deficits were significantly more pronounced in mathematics in districts serving students from lower socio-economic backgrounds than those in high-income schools and Wiley et al. (2010) found significant behavioral differences amongst youth with EBD. Currently, there is controversy regarding the over representation of minority students classified as EBD; yet, there is little empirical research involving secondary students from minority backgrounds (Forness, Kim, & Walker, 2012; Templeton, Neel, & Blood, 2008). In their meta-analysis of math interventions for students with EBD, Templeton et al. indicated the clear need for interventions to support math instruction, especially higher level mathematics skills.

Given the need for both academic and behavioral supports, one intervention that is gaining an evidence base for many students is peer tutoring (e.g. Fuchs, Fuchs, & Kazdan, 1999; Fuchs, Fuchs, Mathes, & Martinez, 2002; Sutherland & Snyder, 2007). Peer tutoring through the Peer-Assisted Learning Strategies (PALS) model involves highly structured reciprocal review of key information, on-going feedback, and praise (PALS, 2002). Several studies have validated the use of peer tutoring with secondary students with academic and social skills deficits (e.g., Calhoon, 2005; Fuchs et al, 2002). Sutherland and Snyder concluded that peer tutoring coupled with academic self-monitoring increased reading fluency of middle school students with EBD. Further, Linan-Thompson and Vaughn (2007) adapted the PALS strategy for middle school English Language Learners and observed increases in both knowledge acquisition and vocabulary. However, there is a need to extend research to include students with disabilities from diverse backgrounds (Okilwa & Shelby, 2010; Stenhoff & Lignugaris, 2007).

In addition to research supporting peer tutoring to enhance academic development in reading, several studies have focused on other subject areas such as social studies (Spencer, Scruggs, & Mastropieri, 2003), mathematics (Franca, Kerr, Reitz, & Lambert, 1990), and social skills development (Blake, Wang, Cartledge, & Garner, 2000) of middle school students with EBD. More specifically, Franca et al. indicated gains in math performance, positive attitudes towards mathematics, and effective peer relationships. Further, Spencer and colleagues reported increased test performance as well as on-task behavior improvements during peer tutoring.

While academic deficits are evident, students with EBD also experience significant difficulty with self-regulation (Ramsey, Jolivet, & Patton, 2007; Sheffield & Waller, 2010). As a result, a number of studies have investigated the use of academic self-monitoring to support academic progress and social skills development. Advantages of self-monitoring include extended time on-task (King-Sears, 2008), increased academic engagement (Brooks, Todd, Tofflemoyer, & Horner, 2003), and increased academic performance (Harris, Fridlander, Saddler, Fizzelle, & Graham, 2005). Further, Rafferty and Raimondi (2009) showed that students with EBD preferred monitoring of their academic over their behavioral progress during mathematics.

While there is an emergent literature base to support the use of peer tutoring in middle school classrooms, there is a need to extend current research in the area of peer tutoring to determine if vocabulary acquisition can occur across the curriculum (Kennedy, Lloyd, Cole, & Ely, 2012; Okilwa & Shelby, 2012). Given that vocabulary development is an essential component for content mastery (National Institute for Literacy, 2003), lack of vocabulary can greatly impact student progress across the curriculum, especially in domains such as mathematics (Reinholz et

al., 2011). While there is evidence that peer-mediated interventions have produced positive outcomes for students with EBD across subject areas (Spencer et al., 2003; Spencer et al., 2009), as a whole, study participants do not mirror ethnic or gender compositions of the EBD population (Forness, 2012; Ryan, Reid, & Epstein, 2004). Additionally, Hodge, Riccomini, Buford, and Herbst (2006) completed a comprehensive review of math interventions for students with EBD finding a lack of interventions to support acquisition of concepts beyond arithmetic. However, many studies supported the use of self-monitoring strategies to increase math achievement across grade levels. Given that Reinholz et al. (2011) found vocabulary knowledge a critical skill for successful navigation of word problems, Doabler et al. (2012) found vocabulary to be a barrier for secondary math achievement, and the lack of interventions at the secondary level (Hodge et al., 2006), it is plausible to evaluate the efficacy of peer tutoring and academic self-monitoring interventions to support diverse middle school students with EBD.

Research Purpose/Questions

The purpose of the study was to determine the effects of reciprocal peer tutoring and academic self-monitoring on mathematics vocabulary acquisition of six middle school students with EBD from minority backgrounds. The following research questions were addressed:

1. Does peer tutoring combined with academic self-monitoring increase mathematics vocabulary proficiency of middle school students with EBD?
2. Do students with EBD begin working on assessments more quickly after a peer tutoring combined with academic self-monitoring intervention?
3. How do students with EBD perceive peer tutoring and academic self-monitoring interventions?
4. How do teachers perceive peer tutoring and academic self-monitoring interventions for students with EBD?
- 5.

Method

Participants

Six middle-school students enrolled in a self-contained emotional support classroom participated in the study. Each participant's behavior impeded learning to a marked degree. Students were selected for study participation based on the following inclusion criteria: (a) males or females between ages 12-15; (b) identified by the school system as having an emotional or behavioral disorder; (c) documented difficulties with math vocabulary acquisition and assignment completion; (d) difficulty with interpersonal relationships, and (e) demonstrated consistent school attendance. All six of these middle school students were from a lower socio-economic urban school that lacked technological resources further justifying the implementation of cost-efficient interventions such as peer-tutoring and academic self-monitoring. The following is a description of each individual participant. Student characteristics are provided in Table 1. Pseudonyms were used to protect the anonymity of the six participants of this study.

Table 1
Participant Characteristics

Student	Age	Grade	Gender	Ethnicity	Language
Darren	14	8	Male	Hispanic	English/Spanish
Zach	13	8	Male	Hispanic	English/Spanish
Juan	14	7	Male	African American	English
Emanuel	13	8	Male	Caucasian/Hispanic	English
Nicki	12	6	Female	African American	English
Cash	14	8	Male	Hispanic	English/Spanish

Setting

The study took place in a diverse urban division located in the northeast United States that was completed in a public fully accredited, comprehensive middle school serving students enrolled in grades 6-8. This research was conducted in a special education classroom for students with EBD. Both the instructional assistant and the teacher's desks were in the classroom as well as 10 student desks. Instructional posters and a bulletin board summarizing the classroom management system were on display. Staffing ratios were one teacher and one instructional assistant to eight students. The teacher was a Caucasian female with seven years of experience working with students exhibiting emotional and behavioral disorders. She was highly qualified and pursuing a master of education degree. The teacher was enrolled in a graduate level behavior management course during the time of this study. The classroom instructional assistant was also highly qualified and had received ongoing professional development in the areas of assessment, data collection, and progress monitoring. She was of Caucasian decent and had worked as an instructional assistant within the district for five years.

Research Design

In order to examine and document functional relation between independent and dependent variables, one of the most powerful single-case research designs was used: multiple baseline across student dyads (Gast, 2010; Horner, Carr, Halle, McGee, Odom, & Wolery, 2005; Kennedy, 2005). Multiple baseline was an appropriate design for this research study as it allowed (a) exploring whether peer tutoring and academic self-monitoring improved students' vocabulary skills as compared to traditional instruction; (b) avoiding the withdrawal of intervention, which would be unethical and impossible to reverse learned skills; and (c) replicating previous single-subject research on the effects of peer tutoring interventions within middle school emotional support classrooms (Sutherland & Snyder, 2007). According to the Kratochwill et al. (2010) there should be three attempts to demonstrate an effect at three different points in time and at least 5 data points in each phase. Thus, the introduction of the intervention was staggered across three pairs of students.

Measures

Dependent variables in this study included quiz latency, quiz scores, and cumulative test results. Latency was selected as a measure because work attempt or completion was an area of concern for the study participants and is often a concern for teachers and students with EBD. Quiz latency scores were calculated by recording the time from when the student was given the quiz until he/she began actively working on it. The beginning of work was defined as the student looking at his paper, engaged only with self, and writing on the paper. Latency data were

collected through direct observation. As the quiz was distributed to students, a stopwatch was started. The stopwatch was stopped when each student began working on a quiz. The latency time was recorded for each individual participant. If a student did not begin working on a quiz within 10 minutes, the session was discontinued and the quiz latency was scored as 10 minutes.

Each quiz included a vocabulary word bank and four definitions (described in detail below). Students were asked to write the correct vocabulary word next to each definition. Thus, each quiz was scored on a scale from 0 to 4 with each question being worth one point.

At the conclusion of the study, each student was provided with a 16-question cumulative test. Sixteen words were randomly selected from the entire set of vocabulary words presented during the study to test cumulative knowledge. Students matched the vocabulary word from a word bank to the correct definition.

Materials

Baseline materials. Critical vocabulary words were obtained from the state blueprints and district pacing guides and were included within daily instruction. Each lesson included new vocabulary words deemed critical to instruction by the teacher and district. A four-question vocabulary quiz was administered three times per week. The quiz consisted of four new terms typed in a word bank and four definitions written below. A key was developed by the researcher for each vocabulary quiz. The vocabulary words were identified as essential by the textbook or by the state vocabulary anchor. Students were asked to write the correct vocabulary word next to each definition.

Treatment materials. Critical vocabulary words were selected during the treatment phase in the same manner as during the baseline phase. Vocabulary card materials included four 3 inch by 5 inch index cards with a vocabulary word written in blue marker, pencil, and a textbook including a glossary of terms. Within each session, four new terms were introduced. Vocabulary quizzes utilized the same format as those developed in the baseline with four terms and four definitions typed on a worksheet. Students utilized a computer with Microsoft Excel to graph their progress.

Data Collection Procedures

Student pairs. Student pairs were determined using the PALS dyad intervention procedures (Fuchs et al., 1999). The teacher ranked students from high to low according to vocabulary and math skills performance. The list was then cut in half. The top-performing student was paired with the top of the lowest performing student, the second highest performing student was paired with the second lowest performing student, and finally the third highest performing student was paired with the lowest performing student. Given that students with EBD often have significant interpersonal challenges that have the potential to threaten their progress in peer-mediated interventions (Sutherland & Snyder, 2007; Sutherland, Wehby, & Gunter, 2000), the teacher confirmed students were appropriately matched using available classroom data.

Baseline. During flextime students were allotted 15 minutes to catch up on homework or to read silently prior to proceeding to lunch. During flextime students completed a four-question

vocabulary quiz including critical vocabulary words that involved writing a math vocabulary word supplied in a word bank next to a definition. Vocabulary words were identified as important on the district-pacing guides, state curriculum anchors, and by the primary instructor.

Direct observation data were collected by the researcher three times per week for quiz latency and quiz score. According to Alberto and Troutman (2012), latency is calculated by recording the amount of time from an instructional cue to an individual initiating a task. The amount of time from when a student was provided with a quiz and when he began writing on the quiz was considered quiz latency. The quiz score was calculated by recording the number of correct definitions. Students in the baseline phase submitted their papers to the teacher for evaluation and students in the treatment phase scored their papers using a key provided as described later.

Treatment. The researcher trained the teacher on implementation of the peer tutoring intervention using written structured procedures. To avoid exposure to treatment, students who did not receive the intervention completed flextime assignments in another part of the classroom. Student dyads were trained by the teacher and researcher as they entered the intervention phase. Training consisted of a) vocabulary card creation, b) turn taking, c) gist statements, and d) clarification and correction. Following traditional mathematics instruction, the intervention involved providing students with four 3 x 5 inch white index cards. The front of the card was blank and the back of the card included a red line, followed by blue lines. Each card had an essential vocabulary word from the grade level math text written by the primary researcher in blue marker that was supported by state mathematics vocabulary anchors. The intervention involved both students in a dyad writing a definition for the math text on the back of the card. Students were allowed to ask for assistance with the pronunciation of unfamiliar words included in the vocabulary word definition.

After both students in the dyad completed a set of vocabulary cards, the lower performing student quizzed the higher performing student by holding up a vocabulary card of his choice. The higher performing student then stated the definition. If the higher performing student correctly stated a summary of the definition then the lower performing student placed the card in a correct pile. If the student was unable to state the definition, the lower performing student read the correct definition. After the lower performing student quizzed the higher performing student, the higher performing student quizzed the lower performing student using the same process. Then the process was repeated so that both students acted as the tutor and tutee twice.

Prior to entering treatment the teacher and researcher modeled the peer tutoring strategy and reminded students to utilize the skills learned during social skills instruction for accepting and providing feedback. During the treatment phase, two students sat across from each other at a table outside of the classroom. The students then followed the aforementioned procedures.

Following the intervention, each student independently completed a four-question math vocabulary quiz that involved writing a vocabulary word from the word bank at the top of the quiz next to the correct definition. Just like in a baseline condition, quiz latency data were collected via direct observations by the researcher and the classroom instructional assistant. Quiz score data were also collected and checked for reliability of scoring in more than 30 percent of observational sessions.

After the vocabulary quiz was completed, each student in the treatment phase obtained a key from a folder and graded his/her paper using a marker. After self-scoring his quiz, each student in the intervention group logged onto the class computer and recorded his score in a Microsoft Excel spreadsheet developed by the researcher. This process is similar to the steps described by Gunter, Miller, Venn, Thomas, and House (2002) and adopted by Sutherland and Snyder (2007). Prior to treatment, the researcher taught each student to enter his/her scores into the spreadsheet and graph their progress, and then view a graph of each assessment. All scores were verified by the classroom teacher. Copies of the spreadsheets are available from the researcher. The entire intervention lasted from 15 to 20 minutes following the traditional instruction three times per week.

Interobserver Agreement, Fidelity of Treatment, and Social Validity

Interobserver agreement. Interobserver agreement was calculated for over 30 percent of the quiz latency, the amount of time it took each student to begin his quiz. Total agreement formula was used: least amount of time divided by greater amount of time multiplied by 100 (Alberto & Troutman, 2012). Agreement ranged from 83% to 100% with an overall agreement of 92% for quiz latency. Interobserver agreement was calculated for quiz scores using the formula agreements divided by disagreements plus agreements multiplied by 100 for all (100%) quiz and test scores during both the baseline and intervention phases (Alberto & Troutman, 2012). During the baseline phases the teacher graded quizzes and the researcher completed reliability checks of all graded quizzes. During the treatment phases, the teacher completed reliability calculations for students who self-scored their assignments. Interobserver agreement was 100 percent for quiz scores.

Treatment fidelity. Treatment fidelity required measures to ensure that the intervention, including both peer tutoring and academic self-monitoring, was implemented according to specified methods (Gast, 2010). A checklist was utilized to monitor scripted directions provided to students as well as to ensure that each component of the intervention: a) create vocabulary cards, b) reciprocal peer tutoring, c) vocabulary completion, and d) academic self-monitoring was conducted as planned across the implementation of each intervention phase. Data included the teacher reading a script instructing students on how to complete the peer tutoring phase and the researcher demonstrating academic self-monitoring. The classroom instructional assistant completed a checklist for over 30 percent of the sessions indicating that all components were completed with 100% consistency in all observations.

Social Validity

To address social validity, each student completed a four question interview at the mid-term and conclusion of the study. The instructor completed an interview as well. The following questions were asked to glean insight into student perceptions of peer tutoring and academic self-monitoring: (a) Do you like peer tutoring?, (b) Was it beneficial?, (c) Will you make flashcards to study math in the future?, and (d) Is self-graphing your progress helpful?

The classroom teacher was asked to respond to the following: (a) Please share your thoughts about peer tutoring; (b) Did you find peer tutoring to be helpful to your students?; (c) Did you

find self-monitoring to be beneficial to your students; and (d) Do you think that you will use peer tutoring and/or self-monitoring with your students in the future?

Data Analysis

Visual analysis. Visual analysis involves systematic visual inspection of data through repeated review to determine the presence of functional patterns (Alberto & Troutman, 2012). In a multiple baseline design, data are collected and students systematically enter treatment based on the stability of performance of the previous group entering treatment (Gast, 2010). Following the guidelines established by Kratochwill et al. (2010), data were visually analyzed within and across phases on six variables: (a) change in level; (b) data trend; (c) variability of data; (d) data overlap; (e) immediacy of effect; and (f) consistency of data pattern in similar phases within and across participants' dyads.

Statistical analysis. Quiz progress was calculated by determining mean quiz scores in baseline and treatment phases. Scores were then compared to evaluate intervention effectiveness. Latency data were calculated by determining the mean time it took each student to complete quizzes during the baseline and treatment phases. To determine if students maintained vocabulary, each student was administered a post-test consisting of 16 randomly selected vocabulary words.

Qualitative analysis. To address Research Questions 3 and 4, brief structured student and teacher interviews were conducted at the midpoint and conclusion of the interventions. The primary researcher took notes during each interview. Interview notes were reviewed, key points from individual students, and themes across students were noted. The constant comparative method was used to identify emerging themes within the interview responses (Glesne, 2011).

Results

Darren and Zach were the first to enter the intervention phase. The second dyad of participants, Juan and Emanuel, entered the treatment phase after stability of quiz performance data were obtained for both Darren and Zach (after session 10). Later after session 15, the third dyad, Nicki and Cash were able to start the intervention.

Math Vocabulary

Math quiz scores were calculated to answer the first research question pertaining to whether reciprocal peer tutoring and academic self-monitoring increase the level of math vocabulary of middle school students with EBD. Baseline data indicated problems in math vocabulary acquisition for five out of the six students. Despite Zach displaying high vocabulary acquisition baseline scores, he experienced difficulty with completing tasks, math performance, and working with peers. Therefore, the decision had been made for Zach to continue to participate in the study.

There were 3 demonstration effects at 3 different points of time across 3 dyads of students concluding that there was a functional relation between the beginning of the intervention and the change in quiz scores (see Figure 1). The quiz scores among all of the students improved in

predictable fashion as soon as they were introduced to the intervention. The difference in data patterns between baseline and treatment phases for 4 out of the 6 participants demonstrated moderate evidence of effect of peer tutoring and self-monitoring towards increasing vocabulary performance of these students with EBD (Kratochwill et al., 2010). The two exceptions were Zack, who demonstrated originally high baseline levels and Cash who only marginally improved his vocabulary quiz scores after the treatment was introduced. See Figure 1 for a summary of math quiz performance across dyads.

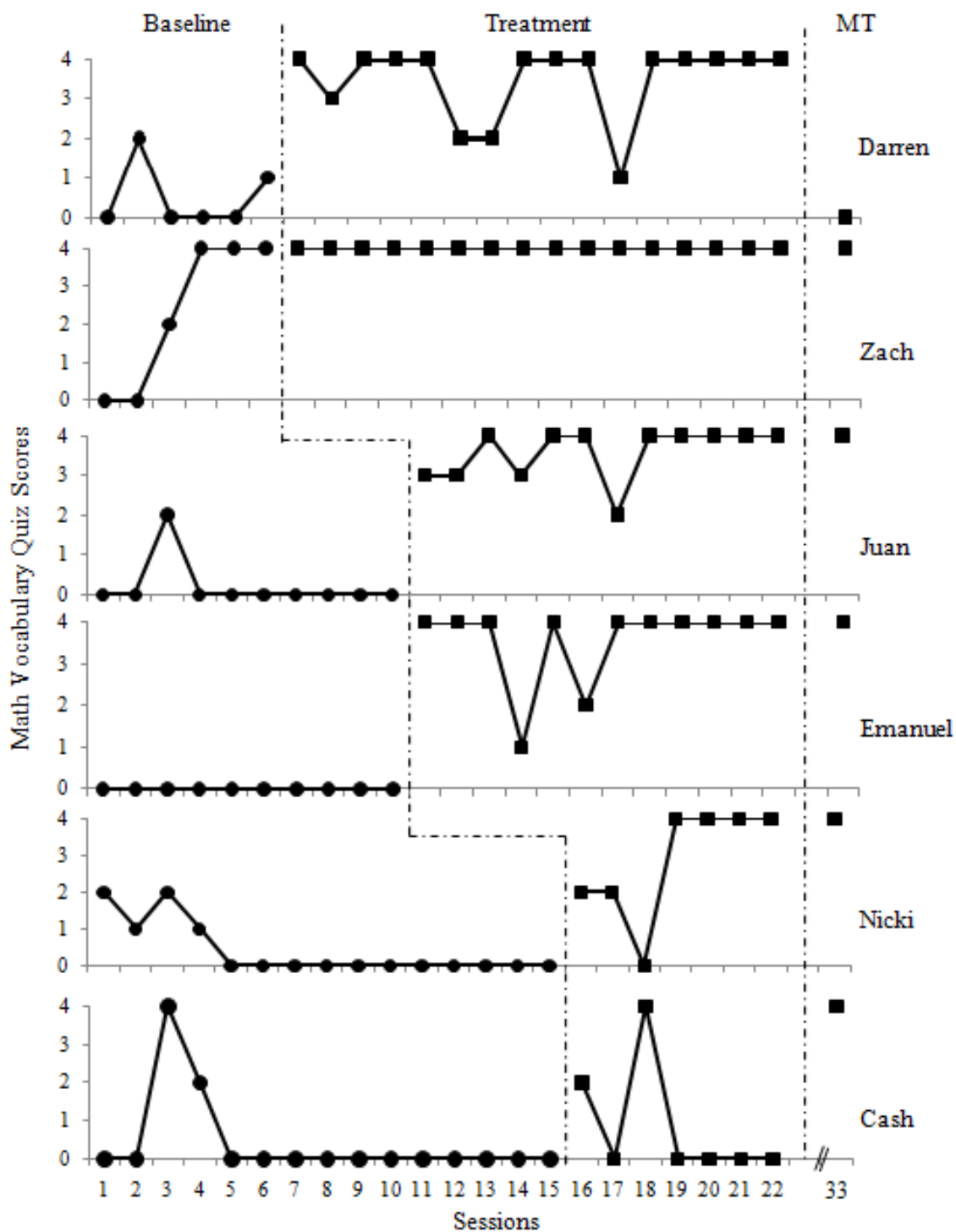


Figure 1. Math vocabulary quiz scores during baseline, treatment, and maintenance phases across 6 middle school students with emotional and behavioral disorders.

Dyad 1: Darren and Zack. Dyad 1 data revealed that Darren increased his math vocabulary performance, while Zach maintained perfect scores during the treatment phase. There was an immediate abrupt change in quiz performance for Darren as soon as he started the intervention.

His mean quiz score increased from 0.5 in baseline to 3.5 in the treatment phase. Percent of Non-overlapping Data (PND; Scruggs, Mastropieri, & Casto, 1987) was 81.5% and performance was consistently higher during the treatment phase with the exception of one data point. Darren reported earning his first 100% on a math quiz during the first day of the intervention phase.

Maintenance data from Dyad 1 indicated that Zach was able to earn a 4 out of 4 (100%) on his quiz. However, Darren refused to complete the quiz following peer tutoring and to record his score on the computer during the maintenance phase. Both Darren and Zach's cumulative test performance indicated that they retained the vocabulary learned (see Figure 2).

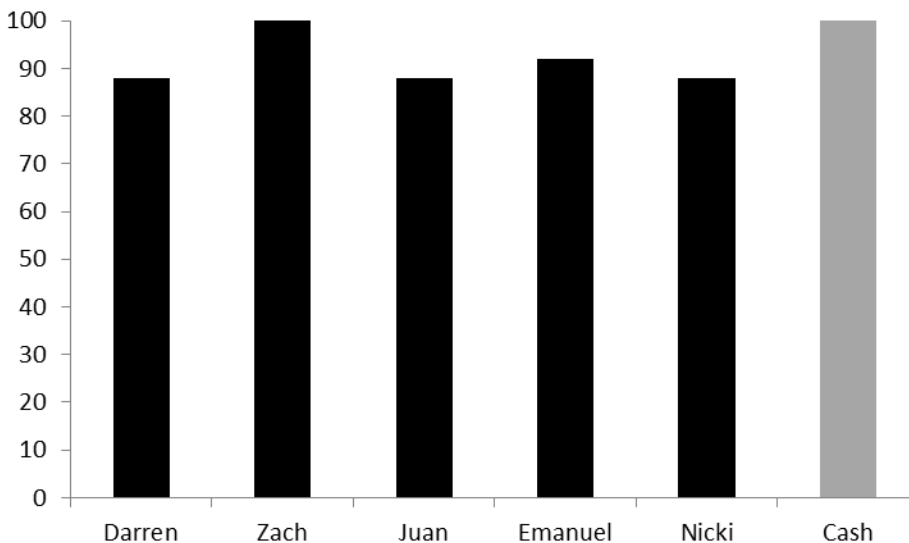


Figure 2. Participants' performance on the 16-questions cumulative math vocabulary posttest. Note: Cash responded orally.

Dyad 2: Juan and Emanuel. Dyad 2 results indicated that both Juan and Emanuel's vocabulary quiz scores dramatically and abruptly improved upon the initiation of the peer tutoring intervention. Moreover, Juan's mean quiz score increased from a 0.2 baseline score to 3.58 during the peer tutoring intervention. Emanuel's mean quiz score increased from 0 to 3.58. The variability of Juan and Emanuel's treatment data was caused by a few outlier data points. Both Juan and Emanuel's PND coefficients between the baseline and treatment phases were high, 92% and 100% respectively, demonstrating effectiveness of the interventions. This was consistent with the Dyad 1 data patterns. The data points in the maintenance phase as well as cumulative posttest results indicated that Dyad 2 participants maintained their vocabulary gains.

Dyad 3: Nicki and Cash. Dyad 3 results concluded that Nicki's vocabulary performance increased immediately after the introduction of the intervention. Her mean levels increased from a baseline score of 0.28 to a treatment score of 2.85. Nicki's PND was 57% due to a few elevated data points in the baseline and 0% quiz score during Session 18. In turn, Cash's vocabulary scores did not increase in the treatment phase demonstrating no functional relation between the dependent and independent variables. High variability of data resulting in 0% PND did not reveal the change in mean levels or trends of data. Despite inconsistent results in treatment, both Nicki and Cash earned the maximum possible score of 4 on the maintenance

quiz. Further, both students earned a 92% on the post-test and Cash, despite refusing to complete the post-test, was able to orally define each of the words on the posttest. See Table 2 for a summary of quiz range and mean scores for each of the six students.

Table 2

Mean Quiz Scores in Baseline and Treatment Phases for Each Participant

Student	Baseline Quiz Range	Baseline Quiz Mean	Treatment Quiz Range	Treatment Quiz Mean
Darren	0-2	.5	1-4	3.5
Zach	0-4	2.33	4-4	4.0
Juan	0-2	.20	2-4	3.58
Emanuel	0-0	0.00	1-4	3.58
Nicki	0-2	.28	0-4	2.85
Cash	0-4	.40	0-4	.86

Note. Scores ranged from 0 to 4 with 4 being the equivalent to 100%

Quiz Latency

To answer the second question as to whether students with EBD begin working on assessments more quickly after peer tutoring and academic self-monitoring interventions, the time it took for a student to begin actively working on quiz was recorded. Despite high variability of data, all six students exhibited problems with vocabulary quiz latency in the baseline condition. The high levels of quiz latency changed for 4 out of the 6 participants following the introduction of the intervention. The difference in data patterns between baseline and treatment phases for these 4 out of 6 students revealed moderate evidence that peer tutoring and self-monitoring decreased the amount of the time it took students to begin working on a quiz (Kratochwill, et al., 2010). As can be seen in Figure 3, there were 3 demonstration effects at 3 different points of time across 3 dyads of students to conclude that there was a functional relation between the beginning of the intervention and the change in quiz latency.

Dyad 1: Darren and Zack. Zack and Darren took on average 8.69 and 7.57 minutes respectively to begin the quiz during the baseline phase. In turn, on all treatment days, both Zach and Darren immediately started their quizzes. This was a significant, abrupt decrease in latency from baseline to treatment. While Zach earned perfect scores on his quizzes during the baseline phase, he experienced difficulty initiating the quiz as soon as it was provided. During the treatment phase, Zach's time to initiate his quiz significantly decreased and his quiz performance remained stable (100% PND score). Further, field notes indicated that Zach accepted reminders from Darren and returned to task when Darren asked him to do so. During Darren's baseline phase, he often reported not knowing the words and refused to complete two quizzes (e.g. Sessions 4 and 5). During the intervention, Darren's latency consistently remained under 2 minutes. (100% PND score). Neither student refused to complete a quiz during the treatment phase. Zack also maintained 0 minute quiz latency during the follow-up data collection. However, during the maintenance phase, Darren refused to complete his quiz after peer tutoring resulting in a high latency follow-up score.

Dyad 2: Juan and Emmanuel. As can be seen from Figure 3, both Juan and Emmanuel had difficulty starting the quiz within the baseline condition ($M = 8.87$ and $M = 9.66$ min. respectively). However, while the decrease in quiz latency during treatment was obvious for Emanuel (immediate change in level to less than 0.5 min. and $PND = 100\%$), Juan's improvements were hindered by great variability of data. Despite low PND score of 50%, Juan's data in the treatment phase showed a promising downward trend. In addition, both Juan and Emanuel completed all quizzes during the intervention and maintenance stages while refusing to do so during their baseline phase. Results mirror those in Dyad 1

Dyad 3: Nicki and Cash. Nicki's quiz latency was characterized by great variability. However, while a few outlier data points resulted in 0% PND , her data in the baseline showed an upward trend that gradually changed downward in the treatment phase. In addition, Nicki's latency reached the ceiling (10 minute) mark for 11 out of 15 baseline sessions. As soon as the peer tutoring and self-monitoring intervention started, she refused to complete only one quiz (in Session 18). Cash continued to refuse to complete many of the vocabulary quizzes even during the intervention phase. Further, Cash's quiz latency and performance was inconsistent. Cash orally defined each vocabulary word on each of his tests with 100 percent accuracy only after refusing to take both his daily quizzes on most days and his cumulative vocabulary test. See Figure 3 for a summary of quiz latency across participants.

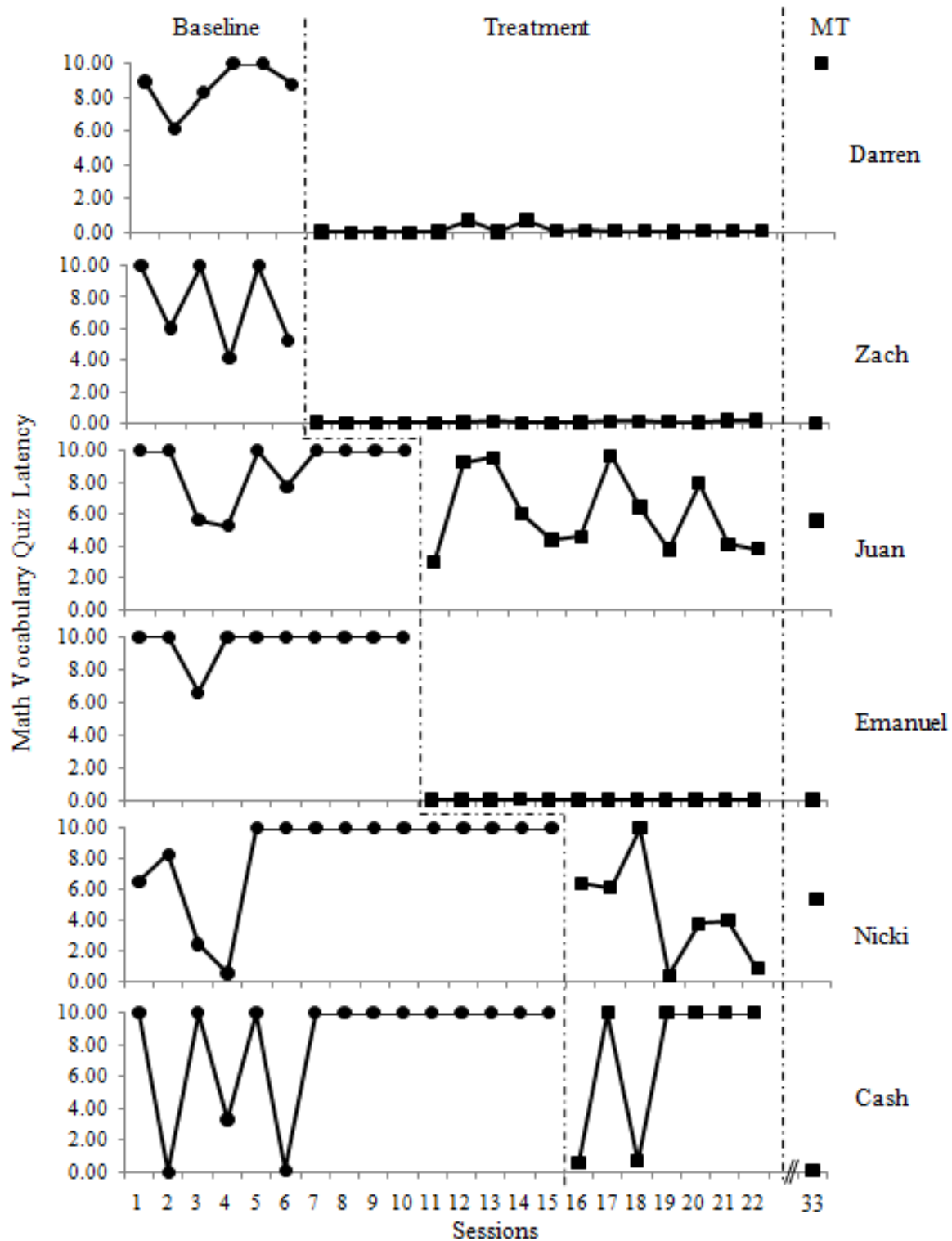


Figure 3. Math vocabulary quiz latency during baseline, treatment, and maintenance phases across 6 middle school students with emotional and behavioral disorders

Social Validity

Social validity measures provide information about how favorably participants view an intervention (Lane & Beebe-Frankenberger, 2004). While results of social validity measures utilized in one single subject study cannot be generalized to populations without replication, they do provide insight into the thoughts and perceptions of participants. Student interviews were completed to address how students perceived peer tutoring and academic self-monitoring. Both Darren and Zach, members of the first dyad, found peer tutoring to be beneficial during both the midpoint and conclusion stages of the intervention phase. Zach, the higher performing student, stated that he completed more of his quizzes because Darren needed his help. Zach reported that the tutoring was redundant for him; however, he enjoyed working on the computer. Darren shared that he liked using the flashcards and used the strategy in his science class and reviews the cards with his brother.

Dyad 2 participants, Juan and Emanuel, believed that peer tutoring helped them to remember vocabulary words that are on the state test. They also reported that they enjoyed working on the computer. Cash from Dyad 3 stated that monitoring his progress and studying would improve his math grade. Nicki concluded that she would like to make flashcards and study them on her own and then graph her progress on graph paper.

Cash said that he hated flashcards and taking vocabulary quizzes. He also shared that he did not enjoy working with Nicki. However, Nicki shared that she did not like taking quizzes but the flashcards and working with Cash was helpful.

Teacher Perceptions

Interviews were also conducted to investigate how the students' teacher perceived the effectiveness of peer tutoring and academic self-monitoring. The teacher reported that peer tutoring was helpful for teaching math vocabulary; however, she was skeptical in her ability to potentially keep up with the pacing guide if the peer tutoring method was implemented. She also noted that rotating peer tutoring with other strategies would likely maintain student interest. Further, the teacher shared that peer tutoring would be helpful for students who needed more repetition and review. The teacher concluded that she would use both peer tutoring and academic self-monitoring, particularly on the computer, in the future.

Discussion

Increased focus on academic achievement and school accountability over the last decade has led to academic, graduation, and post-high school outcome gains for many students, including those with disabilities. However, this trend is not evident for students with EBD (Institute for Educational Sciences, 2012). Despite many students with EBD having average or even above average intelligence, significant academic deficits in reading, writing, and/or mathematics have been observed (Kauffman, 2005; Lane & Menzies, 2009; Trout, Nordess, Pierce, & Epstein, 2003). With almost 60 percent of students with EBD failing to graduate (National Longitudinal Transition Study II; 2003), it is not surprising that they often experience significant difficulty with job acquisition and retention attributed to both social and academic deficits (Hallahan, Kauffman, & Pullen, 2011; Hockenbury, Kauffman, & Hallahan, 2000). Therefore, it is critical that quality practices are developed to meet the unique needs of secondary students with EBD.

It is important to continue to evaluate the effectiveness on interventions to support the academic and behavioral progress of students with EBD. Given the need for additional interventions to facilitate access to mathematics tasks beyond computation, the results of this study support the use of peer tutoring and academic self-monitoring for five out of six students who participated in the study. The results of the study may improve our understanding of academic and behavioral interventions implemented together to improve mathematics vocabulary and academic task engagement. Further, there is evidence that the intervention is effective with students with EBD who are bilingual.

Results suggest that peer tutoring coupled with academic self-monitoring may assist students with mastering mathematics vocabulary. There was a functional relation between the (a) an increase in math vocabulary quiz scores; (b) a decrease in math vocabulary quiz latency and the peer tutoring with self-monitoring intervention for at least 4 out of 6 participants demonstrating moderate effectiveness of the intervention (Kratochwill et al., 2010). Teachers and students report that the intervention is easily implemented with materials that are readily available in most classrooms. Additionally, the intervention supports the use of social skills while engaged in an academic task, which is often an area of concern for students with EBD.

In addition to a need to simultaneously providing academic and behavioral supports, there is also a need for low cost or no cost interventions that teachers and their students can readily implement. In a time of decreasing budgets and increasing student needs, it is paramount that continued access to the general curriculum is provided. Students are expected to access grade level math tasks that involve problem solving, synthesis, and analysis. Therefore, strategies to access higher level math tasks, such as peer tutoring, may be viable solutions to support access to the general mathematics curriculum.

The results of the study should be considered with some caution, as there are limitations. First, it is difficult to ascertain whether peer tutoring and/or academic self-monitoring is responsible for latency and score increases as both interventions were implemented simultaneously. As Templeton, Neal, and Blood (2008) suggest, self-monitoring is beneficial for students with EBD in mathematics and may be attributed to the gains. Further, Dyad 3 demonstrated great variability of data hindering the conclusions about the effectiveness of the intervention. Such variability may have been caused by the tension in the dyad when they did not want to work together. Therefore, while replication was observed across treatment for one phase, the within subject replication was not as strong for Dyad 3. Also, due to absences and disciplinary challenges, dyads did not always receive peer tutoring instruction immediately following traditional math instruction. One student had perfect scores in the baseline phase, which suggests the possibility of alternative explanations for the improved performance. Finally, although we attempted to establish equivalency across math vocabulary quizzes (e.g. difficulty of vocabulary words, time to complete, aligned with curriculum guide and state vocabulary anchors) we did not formally validate the quizzes.

Practitioners working with students with EBP should consider the strengths of their students and adjust peer tutoring groups to assist with social and academic skill development. Preliminary

findings suggest additional research in the areas of both peer tutoring and academic self-monitoring individually with urban students from a minority backgrounds, especially from Hispanic descent would be warranted. Further investigation into the use of peer tutoring for students with average to above average achievement is needed as well as an exploration of the impact of peer tutoring on performance of students with both internalizing and externalizing behaviors. This study provides evidence that peer tutoring is a viable option to afford students with EBD the opportunity to increase academic skills while simultaneously practicing social skills

References

- Alberto, P. A., & Troutman, A. C. (2012). *Applied behavior analysis for teachers* (9th ed.). Upper Saddle River, NJ: Prentice Hall.
- Blake, C., Wang, W., Cartledge, G., & Gardner, R. (2000). Middle school students with serious emotional disturbances serve as social skills trainers and reinforcers for peers with SED. *Behavior Disorders*, 25, 280-298.
- Brooks, A., Todd, A., Tofflemoyer, S., & Horner, R. (2003). Use of functional assessment and a self-management system to increase academic engagement and work completion. *Journal of Positive Behavioral Interventions*, 5, 143-152.
- Calhoon, M. B. (2005). Effects of a peer-mediated phonological skills and reading comprehension program on reading skill acquisition for middle school students with reading disabilities. *Journal of Learning Disabilities*, 38, 424-433. doi: [10.1177/00222194050380050501](https://doi.org/10.1177/00222194050380050501)
- Doabler, C. T., Cary, M. S., Jungiohann, K., Clarke, B., Fien, H., Baker, S., Smolkowski, K., Chard, D. *Teaching Exceptional Children*, 44, 48-57.
- Forness, S., Kim, J., Walker, H. (2012). Prevalence of Students with EBD: Impact on General Education. *Beyond Behavior*, 21, 3-10.
- Franca, V. M., Kerr, M. M., Reitz, A. L., & Lambert, D. (1990). Effects of peer-assisted learning strategies on high school student with serious reading problems. *Remedial and Special Education*, 20, 309-318.
- Fuchs, L. S., Fuchs, D., & Kazden, S. (1999). Effects of peer-assisted learning strategies on high school students with serious reading problems. *Remedial and Special Education*, 20, 309-318.
- Fuchs, D., Fuchs, L., Mathes, P. G., & Martinez, E. A. (2002). Preliminary evidence of the social standing of students with learning disabilities in PALS and no-PALS classrooms. *Learning Disabilities Research and Practice*, 17, 205-215. doi: [10.1111/1540-5826.00046](https://doi.org/10.1111/1540-5826.00046)
- Gast, D. L. (2010). *Single subject research methodology in behavioral sciences*. New York, NY: Routledge.
- Glesne, C. (2011). *Becoming qualitative researchers*. (4th Ed.) Boston, MA: Pearson.
- Gunter, P. L., Miller, K. A., Venn, M. L., Thomas, K., House, S. (2002). Self-graphing to success: computerized data management. *Teaching Exceptional Children*, 35, 30-34.
- Harris, K., Friedlander, B., Saddler, B., Fizzelle, R., & Graham, S. (2005). Self-monitoring of attention versus self-monitoring of academic performance: Effects among students with ADHD in the general education classroom. *The Journal of Special Education*, 39, 145-156.

- Hockenbury, J. C., Kauffman, J., Hallahan, D. (2000). What is right about special education. *Exceptionality*, 8, 3-11. doi: [10.1207/S15327035EX0801_2](https://doi.org/10.1207/S15327035EX0801_2)
- Hodge, J., Riccomini, P., Buford, R., & Herbst, M. H. (2006). A review of instructional interventions in mathematics for students with emotional and behavioral disorders. *Behavioral Disorders*, 31, 297-311.
- Horner, R. H., Carr, E. G., Halle, J., McGee, J., Odom, S., Wolery, M. (2005). The use of single subject research to identify evidenced based practice in special education. *Exceptional Children*, 71, 165-179.
- Kauffman, J. M. (2005). *Characteristics of children's behavior disorders* (7th ed.). Columbus: OH: Merrill.
- Kennedy, C. H. (2005). *Single-case Designs for Educational Research*. Boston: Allyn and Bacon.
- Kennedy, M. J., Lloyd, J. W., Cole, M., Ely, E. (2012). Specially designed vocabulary instruction in the content areas: What does high quality instruction look like? *Teaching Exceptional Children Plus*. Retrieved from: [www.cec.sped.org/TEC Plus](http://www.cec.sped.org/TECPlus).
- Kratochwill, T. R., Hitchcock, J., Horner, R. H., Levin, J. R., Odom, S. L., Rindskopf, D. M. & Shadish, W. R. (2010). Single-case designs technical documentation. Retrieved from What Works Clearinghouse website: http://ies.ed.gov/ncee/wwc/pdf/wwc_scd.pdf.
- King-Sears, M. E. (2008). Using teacher and researcher data to evaluate the effects of self-management in an inclusive classroom. *Preventing School Failure*, 52(4), 25-36.
- Lane, K.L. & Beebe-Frankenberger, M. (2004). *School-based interventions: The tools you need to succeed*. Boston, MA: Allyn & Bacon Publishers.
- Lane, K. L., & Menzies, H. M. (2009). Reading and writing interventions for students with and at risk for emotional and behavioral disorders: An introduction. *Behavioral Disorders*, 35, 82-85.
- Lane, K. L., & Wehby, J. (2002). Addressing antisocial behavior in schools: A call for action. *Academic Exchange Quarterly*, 6, 4-9.
- Lane, K., Wehby, J., & Cooley, C. (2006). Teacher expectations of students' classroom behavior across the grade span: Which social skills are necessary for student success? *Exceptional Children*, 72, 153-167.
- Linlin-Thompson, S., & Vaughn, S. (2007). *Adaptations of peer-assisted learning for English language learners: Applications to middle-school social studies classes*. The Vaughn Gross Center for Reading and Language Arts, the University of Texas at Austin. Retrieved on November 20, 2010, from www.cal.org/create/research/peer-assisted.html
- Montague, M., Ender, C., Cavendish, W., & Castro, M. (2011). Academic and behavioral trajectories for at-risk adolescents in urban schools, *Behavioral Disorders*, 36, 141-156.
- National Institute for Literacy (2003). *Building Blocks for Reading*. Washington, DC: Author.
- National Longitudinal Transition Study- 2. (2003). *Youth with disabilities: A changing population. A reporting findings from the National Longitudinal Transition Study (NLTS) and the National Longitudinal Study-2 (NLTS-2)*. Melno Park, VA: SRI International.
- Nelson, J. R., Benner, G. J., Lane, K. L., & Smith, B. W. (2004). Academic achievement of K-12 students with emotional and behavioral disorders. *Exceptional Children*, 71(1), 59-73.
- Okilwa, N. S. A., Shelby, L. (2010). The effects of peer tutoring on academic performance of students with disabilities in grades 6 through 12: A synthesis of the literature. *Remedial and Special Education*, 31, 450-463. doi: [10.1177/0741932509355591](https://doi.org/10.1177/0741932509355591)

- PALS: Vanderbilt University, Peer-assisted Learning Strategies: Strategies for Successful Learning: <http://kc.vanderbilt.edu/pals/>. Retrieved on November 20, 2010.
- Rafferty, L. A., & Raimondi, S. L. (2009). Self-monitoring of attention versus self-monitoring of performance: Examining the differential effects among students with emotional disturbance engaged in independent math practice. *Journal of Behavioral Education*, 18, 279-299. doi: [10.1007/s10864-009-9092-7](https://doi.org/10.1007/s10864-009-9092-7)
- Ramsey, M. L., Jolivet, K., & Patton, B. (2007). Peer-Assisted learning strategies (PALS) for reading in the EBD classroom. *Beyond Behavior*, 2-6.
- Reinholz, D., Levin, M., Kim, H., Champney, D., Floden, R., Katwibun, D., Lepak, J., Louie, N., Nix, S., Sanchez, J., Schoenfeld, A., Seashore, K., Shah, N., & Wernet, J. (2011). Capturing What Counts: Classroom Practices That Lead To Robust Understanding of Algebra. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA, April 8-12, 2011.
- Ryan, J. B., Reid, R., Epstein, M. H. (2004). Peer-mediated intervention studies on academic achievement for students with EBD. *Remedial and Special Education*, 25, 330-341. doi: [10.1177/07419325040250060101](https://doi.org/10.1177/07419325040250060101)
- Scruggs, T. E., Mastropieri, M. A., & Casto, G. (1987). The quantitative synthesis of single-subject research: Methodology and validation. *Remedial and Special Education*, 8, 24-33. doi: [10.1177/074193258700800206](https://doi.org/10.1177/074193258700800206)
- Sheffield, K. & Waller, R. J. (2010). A review of single-case studies utilizing self-monitoring interventions to reduce problem classroom behaviors. *Beyond Behavior*, 19, 7-13.
- Siperstein, G. N., Wiley, A. L., Forness, S. R. (2011). School context and the academic and behavioral progress of students with emotional disturbance. *Behavioral Disorders*, 36, 172-184.
- Spencer, V. G., Scruggs, T. E., & Mastropieri M. A. (2003). Content area learning in middle school social studies classrooms and students with emotional and behavioral disorders: A comparison of strategies. *Behavioral Disorders*, 28, 77-93.
- Spencer, V. G., Simpson, C. G., Oatis, T. (2009). An update on the use of peer tutoring and students with emotional or behavioral disorders. *Exceptionality Education International*, 19, 2-13.
- Stenhoff, D. M., & Lignugaris, B. (2007). A review of the effects of peer tutoring on students with mild disabilities in secondary settings. *Exceptional Children*, 74, 8-30.
- Sutherland, K. S., Wehby, J. H., & Gunter, P. L. (2000). The effectiveness of cooperative learning with students with emotional and behavioral disorders: A literature review. *Behavioral Disorders*, 25, 225-239.
- Sutherland, K. S., & Snyder, A. (2007). Effects of reciprocal peer tutoring and self-graphing on reading fluency and classroom behavior of middle school students with emotional or behavioral disorders. *Journal of Emotional and Behavioral Disorders*, 15, 103-118. doi: [10.1177/10634266070150020101](https://doi.org/10.1177/10634266070150020101)
- Templeton, T. N., Neel, R. S., & Blood, E. (2008). Meta-analysis of math interventions for students with emotional and behavioral disorders. *Behavioral Disorders*. 16, 226-239. doi: [10.1177/1063426608321691](https://doi.org/10.1177/1063426608321691)
- Trout, A. L., Nordess, P. D., Pierce, C. D., Epstein, M. H. (2003). Research on the academic status of children with emotional and behavioral disorders: A review of the literature form 1961-2000. *Journal of Emotional and Behavioral Disorders*, 11, 189-210. doi: [10.1177/10634266030110040201](https://doi.org/10.1177/10634266030110040201)

- United States Department of Education. (2004) *Individuals with disabilities education act*. Washington, DC: Author.
- United States Department of Education, Institute for Education Sciences (2012). *Trends in high school dropout and completion rates in the United States: 1972-2009*. Retrieved from nces.ed.gov/pubs2012/2012006.pdf
- Wiley, A. L., Siperstein, G. N., Bountress, K. E., Forness, S. R., Brigham, F. J. (2008). School context and the academic achievement of students with emotional disturbance. *Behavioral Disorders*, 33, 198-210.
- Wiley, A. L., Siperstein, G. N., Bountress, K. E., Forness, S. R., Brigham, F. J. (2010). School context and the problem behavior and social skills of students with emotional disturbance. *Journal of Child and Family Studies*, 19, 451-461.

This research was supported by a grant from the US Department of Education, #H325D080036. However, those contents do not necessarily represent the policy of the US Department of Education, and you should not assume endorsement by the Federal Government.

About the Authors

Brittany Hott is an Assistant Professor at Texas A&M University- Commerce. Her research interests include emotional and behavioral disorders and quantitative research synthesis. She teaches research methods and assessment courses.

Anya S. Evmenova is an Assistant Professor of special education in the College of Education and Human Development at George Mason University. She teaches master and doctoral level courses in research methods, special education, and assistive technology. Dr. Evmenova's research interests include the use of assistive and instructional technology for improving access to general education curriculum for students with various abilities and needs, Universal Design for Learning, online teaching and learning, as well as advances in the field of single-subject/case research methods.

Frederick Brigham is an Associate Professor at George Mason University, in Fairfax, VA. His research interests include decision-making in educational settings, assessment of instruction, and effective instruction. He teaches courses in assessment, methods for secondary education, research design, and statistics.

Teaching Multiplication with Regrouping Using the Concrete-representational-abstract Sequence and the Strategic Instruction Model

Margaret M. Flores
Auburn University

Toni M. Franklin
Armstrong Atlantic State University

Abstract

The Common Core State Standards (2010) involve the demonstration of conceptual knowledge of numbers and operations. For students who struggle with mathematics and have not responded to instruction, it is important that interventions emphasize this understanding. In order to address conceptual understanding of numbers and operations in meeting the rigorous Common Core State Standards, interventions should include the use of explicit instruction, manipulation of objects, and visual representation of numbers. The current pilot study investigated the use of such a method within a tiered intervention model, the concrete-representational-abstract (CRA) sequence and the strategic Instruction Model (SIM). Six fourth grade students receiving intervention through a response to intervention model participated. Multiplication with regrouping was taught using CRA and SIM (CRA-SIM) over the course of ten lessons as part of an intervention period. Data were collected before and after CRA-SIM instruction and statistical analysis showed that students made significant gains after instruction. The practical implications and application of CRA-SIM instruction will be discussed.

Teaching Multiplication with Regrouping Using the Concrete-representational-abstract Sequence and the Strategic Instruction Model

Roles and responsibilities of special education teachers have expanded with adoption of school failure prevention models such as response to intervention (Mitchell, Deshler, & Lenz, 2012; RtI). The Individuals with Disabilities Education Improvement Act (IDEIA, 2004), expanded the eligibility definition for specific learning disabilities to include lack of response to systematic intervention. Since that time, general and special educators have collaborated in implementing RtI to provide systematic intervention for students at risk for failure. This collaborative process begins with the provision of evidence-based instruction to all students by the general education teachers. General education and special education teachers work together to identify students who demonstrate lack of progress and need differentiated instruction within the general education classroom. Special education teachers may assist general education teachers in their development of differentiated instruction. General education and special education teachers work together to identify students who continue to demonstrate lack of progress and are in need of more focused and intensive intervention. The special education teacher is likely to take a more active role in the provision of intensive instruction for students who have failed to respond to evidence-based general education practices and differentiated instruction. This includes

implementation of specialized instruction that requires small groupings that address particular deficits (Mitchell, Deshler, & Lenz; Swanson, Solis, & Ciullo, 2012).

In the provision of intensive interventions, special education teachers must ensure that the skills addressed contribute to student's progress within state standards for learning which, the Common Core State Standards (CCSS) for most students across the nation (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). Conceptual understanding, especially in the areas of numeracy and operations, is the emphasis of the elementary-level CCSS in mathematics. Students demonstrate conceptual understanding by going beyond the completion of algorithms and representing numbers and operations through the use of manipulative objects, drawings, and pictures. It is important that mathematics interventions for students receiving RtI interventions stress these skills.

Within the evidence base for elementary-level mathematics interventions, research has shown that the use of manipulative objects, visual representation of numbers and operations led to improved computation (Miller, Stringfellow, Kaffar, Ferreira, & Mancl, 2011). The concrete-representational-abstract sequence (CRA) is an instructional method that provides instructional scaffolding in which students to complete operations using manipulative objects (concrete), using drawings (representational), and finally using numbers and symbols and procedural knowledge (abstract). Mercer and Miller (1992) combined the CRA sequence with a mnemonic device that assisted students in remembering the procedures necessary for computing problems using only numbers and symbols. Systematic instruction in the completion of certain procedures which results in independently problem solving is the hallmark of the strategic instruction model (SIM). A strategy is a collection of steps or plans combined into one self-instructional routine that a student uses to complete a task or problem (Deshler & Schumaker, 1993). Mercer and Miller combined the CRA sequence with SIM by including a strategy for solving basic mathematics facts (Discover the sign, Read the problem, Answer or draw and check, and Write the answer; DRAW) in the Strategic Math Series which has been shown effective. The combination of CRA and SIM (CRA-SIM) have been shown effective in teaching place value (Mercer & Miller; Peterson, Mercer, & O'Shea, 1988) and subtraction and addition with regrouping (Flores, 2009, 2010; Mancl, Miller, & Kennedy, 2012; Miller & Kaffar, 2011). This combination of methods addresses conceptual learning of numbers and operations through CRA and procedural learning required in completing algorithms through SIM. CRA-SIM begins with instruction using manipulative objects, concrete instruction. Next, at the representational level, objects are replaced with drawings and pictures and students solve problems by drawing each step of the operation. After students demonstrate mastery of the representational level, students learn a strategy to be used in solving problems using numbers only. This strategy provides an efficient and effective avenue for completing the algorithm. The steps in completing the algorithm are usually provided in the form of a mnemonic device which serves as a memory aid. After learning the strategy, instruction is provided at the abstract level in which the students solve problems using numbers only with the assistance of the strategy mnemonic.

The line of research regarding CRA-SIM includes early investigations of its effectiveness in teaching place value and basic operations and more recent studies of its use in teaching operations that involve regrouping. Peterson, Mercer, and O'Shea (1988) taught place value concepts to students with specific learning disabilities. Mercer and Miller (1992) investigated the

effects of CRA-SIM in teaching place value, basic operations, and problem solving to elementary students with specific learning disabilities. The results showed that CRA-SIM was effective in increasing students' fluency in basic operations, understanding of place value and its role in operations, and completion of word problems involving basic operations. Harris, Miller, and Mercer (1995) and Morin and Miller (1998) found that CRA-SIM was effective in teaching multiplication facts to students with disabilities.

More complex operations that involve addition and subtraction with regrouping have been taught using CRA-SIM. Flores (2009, 2010) taught subtraction with regrouping to students at-risk for school failure using CRA-SIM. Miller and Kaffar (2011) compared CRA-SIM to traditional basal curriculum in teaching addition with regrouping (computation and word problems) to students who were at-risk for failure. Miller and Kaffar combined CRA with the following regrouping strategy: read the problem, examine the ones column, note the ones column, address the tens column, mark the tens column, examine and note the hundreds, then, with a quick check (RENAME). The researchers found that CRA-SIM resulted in greater learning gains than found using the basal curriculum.

Mancl, Miller, and Kennedy (2012) investigated the effects of CRA-SIM using the RENAME strategy to teach subtraction with regrouping to elementary students with specific learning disabilities. The researchers demonstrated a functional relation between CRA-SIM and increased computation performance. Flores, Hinton, and Strozier (in press) investigated the effects of CRA-SIM (using RENAME) and instruction in subtraction and multiplication with regrouping to students receiving tiered intervention within the RtI framework. Flores et al. extended the research by teaching multiplication with regrouping (two digits in the in the multiplicand and one digit in the multiplier). The researchers showed a functional relation between CRA-SIM and subtraction and multiplication with regrouping.

Research has shown that CRA-SIM is an effective method of mathematic instruction for both students with disabilities and students at-risk for failure. The use of CRA-SIM using the RENAME strategy has been shown to be effective in teaching addition, subtraction, and multiplication when there is one digit in the multiplier (Miller & Kaffar, 2011; Mancl et al., 2012; Flores et al., in press). However, there is a lack of research regarding more mathematical operations such as multiplication that involves two digits in the multiplier. Therefore, the purpose of this pilot study was to investigate the effectiveness of CRA-SIM using the RENAME strategy to teach multiplication involving two-digit multiplicands and multipliers to elementary students receiving tiered interventions within the RtI framework.

Method

Setting

The study took place in an urban high-need elementary school in the Southeastern United States. Eighty-three percent of the students enrolled were eligible for free and reduced lunch and the school had not met the state criteria for adequate yearly progress over the past two years. Student performance in mathematics was a specific area of weakness according to state assessments; Forty-five percent of students did not meet minimum grade level standards.

The study was conducted during an after-school intervention program within a general education setting. The intervention program was part of a tiered prevention program, the third tier (tertiary level) of intervention. The students received CRA-SIM instruction during a thirty-minute portion of the one-hour period. The intervention program met two days per week and the study took place over the course of seven weeks. During this time period, there were two weeks in which there was no instruction due to a holiday break and state testing.

A general education teacher with over ten years of experience, certification in both general and special education, and a doctoral degree in special education provided instruction. The teacher had previous experience in implementing CRA-SIM to teach basic operations and received professional development specific to multiplication with regrouping. The first author provided two sessions of professional development which required mastery of implementation defined as defined 100% accuracy measured by a fidelity of treatment checklist.

Participants

The participants were six fourth grade students who had not been previously referred for special education assessment. However, all of the students were currently participating in an RtI model of failure prevention. All of the students were at risk for failure in mathematics and were receiving intervention at the tier-three level. The students were ten years of age and their cultural backgrounds were African American. All of the students' benchmark assessments indicated that they were not making adequate progress in mathematics according to the state standards. The students demonstrated skills that were one to two years below grade placement.

Materials

The materials consisted of a teacher's manual, student learning sheets, place value mats, and base-ten blocks, and curriculum-based assessments. The teacher's manual was divided into four parts: concrete level, representational level, instruction in the RENAME strategy, and abstract level. Each lesson section included a description of procedures, suggested sample scripts, and pictorial directions of the problem solving process. The descriptions of lesson procedures for lessons at the concrete level (lessons one through three), representational level (lessons four through six), and abstract level (lessons eight through ten) were: a) administration of a timed curriculum-based assessment in which students were given two minutes to complete multiplication problems; b) provision of an advance organizer in which the teacher described the lesson activities; c) modeling and demonstration of the problem solving process in which the teacher physically modeled how to solve problems, described her actions, and thoughts aloud; d) guided practice in which included both the teacher and the students solving problems together; e) independent practice in which the students solved problems without the teachers' assistance; and f) post organizer in which the teacher reviewed the lesson activities and gave a preview of the next lesson's activities. Nine of the ten student learning sheets were 8x11 pieces of paper divided into three sections: three problems for teacher demonstration, three problems for guided practice, and four problems for independent practice. The learning sheet from lesson seven involved the problem solving strategy; each step of the RENAME strategy was listed in the center of the learning sheet. The place-value mats provided students with visual cues for problem solving procedure as well as allowed students to organize their base-ten blocks or drawings. An example of a place value mat is shown in Figure 1.

Example of Place Value Mat Used to Complete Multiplication Problems

	4	5
x	2	5

Procedures

JAASEP FALL, 2014 137

Figure 2.
Procedures for Solving Multiplication Problems at the Concrete Level

Represent the multiplicand (top number) with blocks.																			
<table><tr><td></td><td>4</td><td>3</td></tr><tr><td>x</td><td>3</td><td>4</td></tr><tr><td></td><td></td><td></td></tr></table>		4	3	x	3	4				thousands	hundreds			tens			ones		
		4	3																
	x	3	4																
																			
Multiply ones place of multiplicand by ones place of multiplier; four groups of three.																			
<table><tr><td></td><td>4</td><td>3</td></tr><tr><td>x</td><td>3</td><td>4</td></tr><tr><td></td><td></td><td></td></tr></table>		4	3	x	3	4				thousands	hundreds			tens			ones		
		4	3																
	x	3	4																
																			
																			
Note the ones. If there are ten or more, go next door. Remove a group of ten ones and add one ten to the tens place. Note five ones.																			
* Pictures with dashed outlines represent objects that were used in regrouping, trading for a larger number.																			
<table><tr><td></td><td>¹4</td><td>3</td></tr><tr><td>x</td><td>3</td><td>4</td></tr><tr><td></td><td></td><td></td></tr></table>		¹ 4	3	x	3	4				thousands	hundreds			tens			ones		
		¹ 4	3																
	x	3	4																
								*											
																			

Address the tens column. Use the reverse rule (associative property, e.g., 4×40 rather than 40×4). Make four groups of four tens.

$\begin{array}{ c c c } \hline 1 & 4 & 3 \\ \hline \times & 3 & 4 \\ \hline & & 2 \\ \hline \end{array}$	thousands	hundreds			tens			ones		

In noting the tens, if there are ten or more, go next door. Remove a group of ten tens and add one hundred to the hundreds place. Mark seven tens. Examine and note the hundred. Begin again in the tens place of the multiplier.

$\begin{array}{ c c c } \hline 14 & 4 & 3 \\ \hline \times & 3 & 4 \\ \hline 1 & 7 & 2 \\ \hline \end{array}$	thousands	hundreds			tens			ones		

Write a zero in the ones place. Examine the tens. Use the reverse rule (associative property) and make three groups of three tens. Note tens.

$\begin{array}{ c c c } \hline 14 & 4 & 3 \\ \hline \times & 3 & 4 \\ \hline 1 & 7 & 2 \\ \hline & 9 & 0 \\ \hline \end{array}$	thousands	hundreds			tens			ones		

Address the hundreds. Forty groups of three tens are the same as four groups of three hundreds. Regroup. Exchange ten hundreds for one thousand and mark two hundreds.]

143 x 34 172 1290	thousands	hundreds			tens			ones		
										
										
										
										

Add the numbers and examine the problem to ensure the blocks match the numbers. There are two ones. There are more than ten tens, regroup by moving ten tens and adding one hundred. There are four hundreds and one thousand.

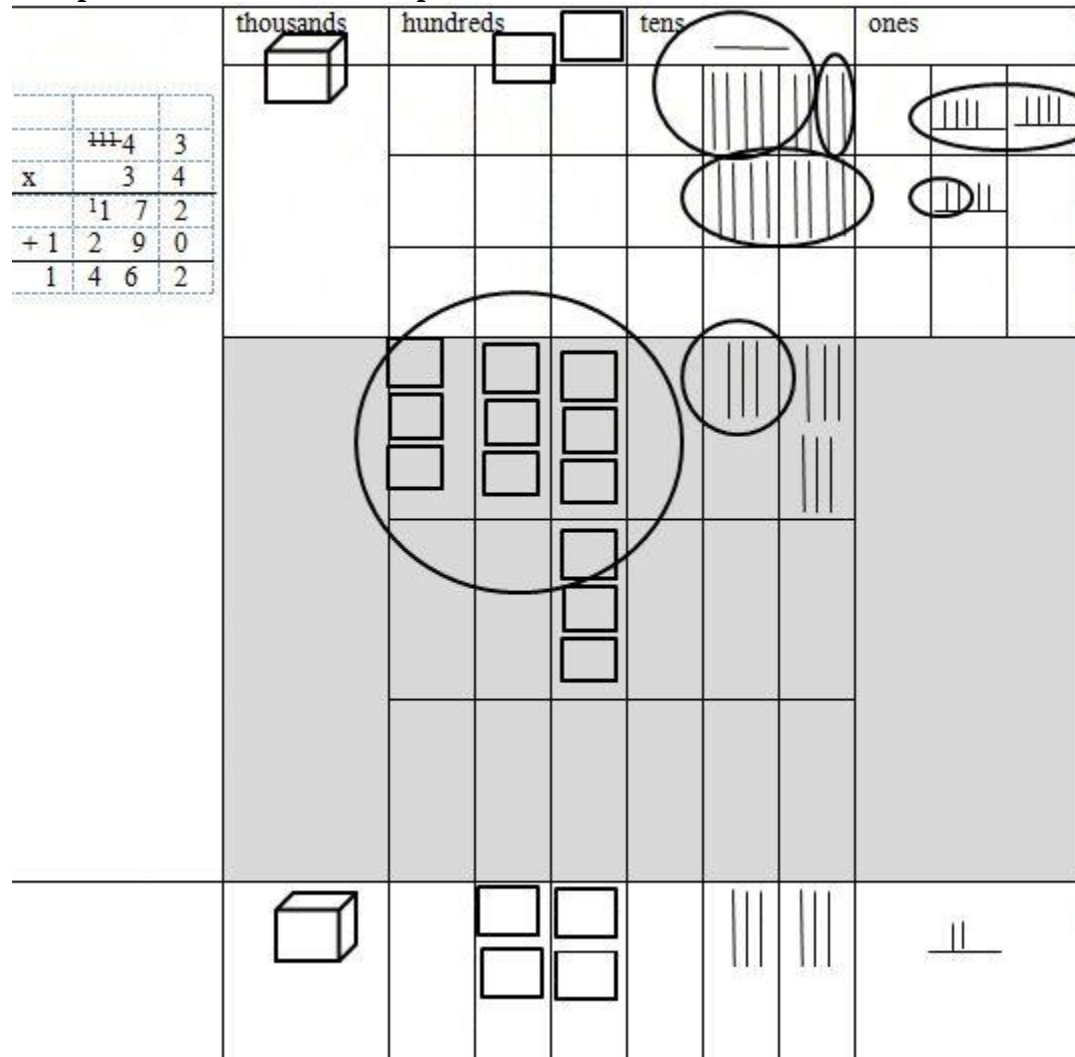
143 x 34 172 1290 1,462	thousands	hundreds			tens			ones		
										
										
										
										

The teacher began by representing the multiplicand (top number). In the example above, the teacher set out four tens blocks and three ones blocks on the multiplication mat. The teacher began solving the problem with the numbers in the tens place (e.g., for the problem 43×34 , three groups of four ones were made). The answer is twelve, regrouping was necessary; ten ones were exchanged for one tens block that was added to the tens place. The remaining two ones were left on the mat and the teacher wrote a two in the ones place. Next, the teacher multiplied the number in the tens place of the multiplicand (top number) by the number in the ones place of the multiplier (bottom number). This was four groups of four tens and the answer was sixteen tens. Since this was more than ten tens, ten blocks were exchanged for one hundred and a hundred was added to the hundreds place. There were seven tens (six plus one that was regrouped from the ones place) left after regrouping. The teacher wrote the numeral seven in the tens place of the problem and the numeral one in the hundreds place of the problem. The teacher told the students that she was finished multiplying by the number in the ones place of the multiplier (bottom number) and she drew a line through that number and wrote the numeral zero in the ones place below the row of numbers computed previously.

Next, the teacher completed the same steps, multiplying by the number in the tens place of the multiplier (bottom number). Manipulating objects for large numbers such as forty groups of thirty were cumbersome, so, after the first lesson, the teacher showed the students that forty groups of thirty is the same as four groups of three hundreds (the associative property). From that point forward, when multiplying numbers in the tens place (e.g., 20×30), the teacher and students employed the associative property (e.g., 2×300) to decrease the number of blocks needed as well as show why the answer would be written in the hundreds place. When top numbers had been multiplied by the number in the tens place of the bottom number, both answers were added. The teacher added the blocks represented on the mat together and then wrote the appropriate numerals in the written problem. Before, moving to the next problem, the teacher checked the written answer with each column of blocks placed on the mat.

Lessons at the representational level followed the same steps; however, the teacher and students used drawings to represent the problems. Tallies drawn on a horizontal line were used to represent ones and long vertical lines represented tens. Hundreds were drawn using squared and thousands were depicted as cubes. These shapes were similar in form to the base-ten blocks. A problem completed at the representational level is shown in Figure 3.

Figure 3.
Completed Problem at the Representational Level



Representational lessons were implemented using the same procedures as used for concrete lessons (advance organizer, model, guided practice, independent practice, post organizer). After representational lessons, the RENAME strategy was taught. The teacher described each step and modeled its use while solving a problem. The students and the teacher engaged in verbal rehearsal of the strategy until students could identify the steps independently. The last three lessons were at the abstract level. Problems were solved using just the RENAME strategy (numbers only, no manipulatives or drawings).

Treatment Fidelity and Inter-observer Agreement

The first author observed at least one lesson at each level as well as the instruction in the RENAME strategy to check for treatment fidelity. A treatment fidelity checklist was used and it included a list of teacher behaviors; presence or absence of each of the behaviors was noted. The curriculum-based assessments completed by the students were checked for reliability; two

observers graded them and compared their scores for agreement. The treatment fidelity checklist is included in Figure 4.

Figure 4.

Treatment Fidelity Checklist

	Instructor Behavior	Yes	No
1	Instructor gives student a blank probe sheet and instructs him/her to complete as many problems as he/she can.		
2	Instructor uses a timing device to ensure that students compute problems for two minutes. After two minutes, the instructor collects the probes.		
3	Gives an advance organizer, tells the student what he/she will be doing and why.		
4	Demonstrates how to compute problems with the manipulative objects pictures, or numbers accurately (depending on level of instruction).		
5	During guided practice, prompts the student to solve problems, students help the instructor solve the problem using manipulative objects, pictures, or numbers (depending on level of instruction)..		
6	Instructs the students to solve problems without her guidance. Provides verbal prompts if the student has difficulty.		
7	Monitors the student's work while he/she solves problems independently. Does not offer the answers.		
8	Collects student's paper and scores problems and provides feedback regarding correct and/or incorrect responses.		
9	Closes with a positive statement about the student's performance in the feedback process, reviews lesson, and mentions future lesson and expectations.		

Results

In order to analyze the effects of the independent variable, CRA-SIM instruction on the dependent variable, student progress as measured by the change in percentage of digits written correctly, a repeated measures analysis of variance (ANOVA) statistical procedure was conducted with the factor being time (curriculum based probes given before and after the intervention) and the dependent variable being the percent of digits written correctly. The means and standard deviations for curriculum-based assessments are presented in Table 1.

Table 1.

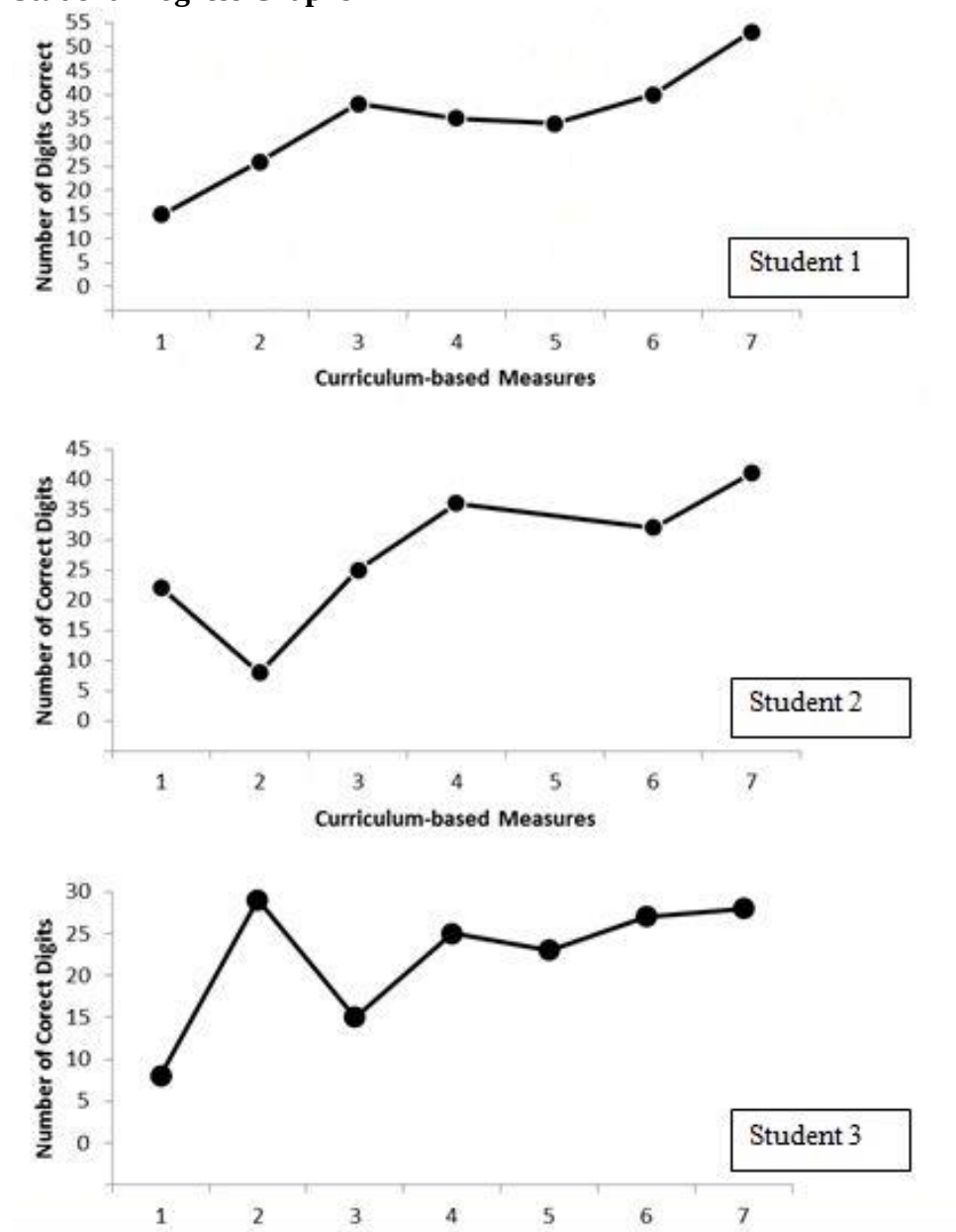
Means and Standard Deviations for Curriculum-based Assessments

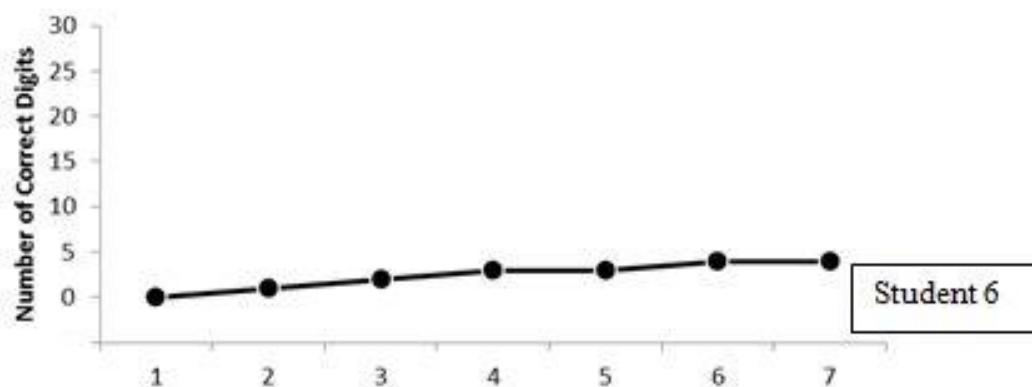
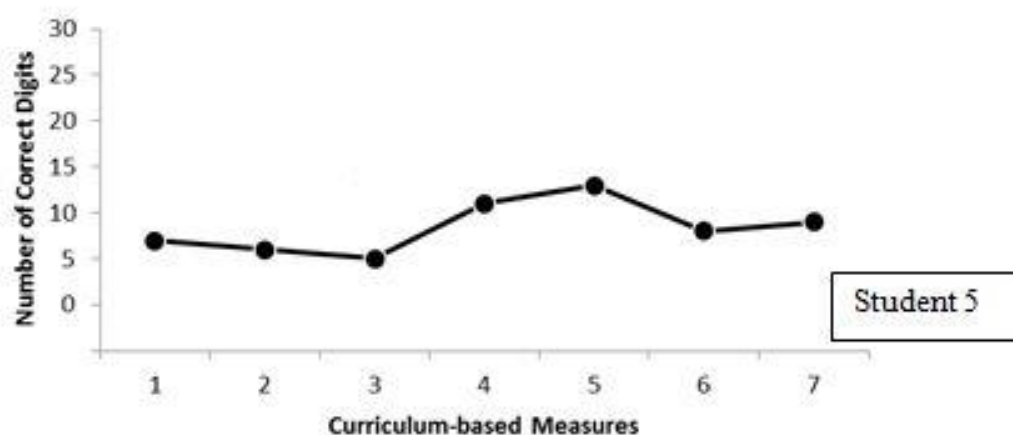
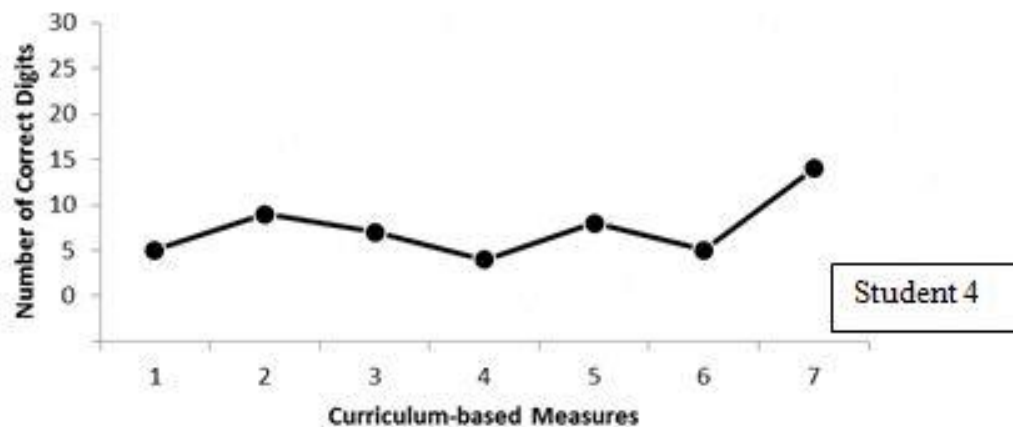
Curriculum-based Assessments (CBM)	Mean Percent Digits Correct	Standard Deviation
CBM prior to intervention	10%	5.4%
CBM after intervention	62%	40.6%

The results for the ANOVA indicated a significant time effect, Wilk's $\Lambda = 0.30$, $F(1, 5) = 11.53$, $p < .02$, multivariate $\eta^2 = .70$. Follow-up polynomial contrasts indicated a significant linear effect with means increasing over time, $F(1, 5) = 11.53$, $p < .02$, partial $\eta^2 = .70$. The observed power

was 0.77. These results suggest that CRA-SIM made a statistically significant difference in students' growth in the percentage of correct digits written over time. Descriptive data showed that four of the six students made consistent progress in their ability to fluently compute multiplication problems requiring regrouping. Student five's progress is not clear based on visual analysis; however, after instruction, she completed one whole problem correctly whereas before instruction, she wrote one digit within multiple problems correctly. Student six did made progress in completing problem procedures; however errors in computation interfered in her ability complete the problem correctly and fluently. Students' fluency progress, as measured by the number of digits written correctly, is provided in graphic form in Figure 4.

Figure 4.
Student Progress Graphs





Treatment fidelity was 93% over the course of the study. During two observations, CRA-SIM was implemented with 80% accuracy. After these lessons, the teacher and researcher discussed problems within the lessons and the teacher demonstrated accuracy in target areas. Follow-up observations of these areas were conducted and implementation was 100% accuracy. The remaining observations of lesson implementation were 100% accuracy. With regard to reliability of grading student assessments, inter-observer agreement was 100% across assessments and students.

Discussion

The purpose of this pilot study was to use CRA-SIM (using the RENAME strategy) to teach multiplication involving two-digit multiplicands and multipliers to elementary students receiving tiered interventions within an RtI framework. The results showed that CRA-SIM instruction resulted in significant gains for the students. These results are consistent with other CRA-SIM regrouping research (Flores, 2009, 2010; Mancl, Miller, & Kennedy, 2012; Miller & Kaffar, 2011).

The students' gains were shown after ten lessons provided in a limited amount of time within an RtI intervention program. This is significant because the students' intervention program occurred twice per week and CRA-SIM instruction was only a portion of this time. In addition, there were interruptions in their program due to state testing and spring break. Nonetheless, students made significant progress with one hour of instruction per week.

With regard to student progress, each student demonstrated increased conceptual and procedural learning. Students one, two, and three demonstrated increased conceptual and procedural learning as well as increased fluency, writing thirty or more correct digits on the post-test. Students four, five, and six demonstrated increased conceptual and procedural learning without achieving the same level of fluency as the other students. Students four and five began the study with misconceptions regarding place value and numeracy. The students multiplied vertically, multiplying the digits in the ones place and writing the answer underneath the line and multiplying in the tens place and writing the answer under the line (e.g., $23 \times 25 = 415$). During CRA-SIM instruction, students demonstrated their conceptual learning by representing numbers using base-ten blocks and drawings as well as their procedural learning by representing algorithm steps. After CRA-SIM, the students completed a problem correctly. The completion of the problem was much slower, but it was completed following accurate procedures.

Student six demonstrated conceptual learning by accurately representing problems using base-ten blocks and drawings. However, the use of numbers only was problematic since this student was not fluent in basic multiplication; without pictures and drawings, she could not accurately complete basic multiplication operations. After CRA-SIM instruction, this student completed problems following accurate procedures, but errors in basic operations resulted in very few correct digits. This is an important example of the role of prerequisite skills in choosing appropriate interventions. It was unrealistic to expect progress regarding fluency in regrouping without fluency in basic operations.

It is noteworthy that CRA-SIM instruction was provided by a practicing teacher with available resources within a high-need school. CRA-SIM was implemented with readily available materials and was implemented without difficulty with regard to procedures and available time. Other CRA-SIM research has been conducted by researchers rather than teachers (Flores, 2009, 2010; Flores, Hinton, & Strozier, in press) and it is important that practical settings be included in the evidence base for CRA-SIM.

Limitations and Future Research

This study is limited in its size with only six students participating. Future research should include larger numbers of students. In addition, this study did not show that CRA-SIM was more

effective than any other intervention; therefore, research should include comparisons between CRA-SIM and other interventions in teaching multiplication with regrouping. Another limitation of this study is the lack of maintenance and generalization data. The findings encompass student progress after ten lessons rather than include follow-up data. Future research should address additional practice opportunities that would build fluency as well as follow-up measures of progress over time. In addition, data regarding generalization of learning in general education settings or progress within the RtI framework as measured by benchmark assessments should be added to the research evidence in the future.

Conclusions and Implications

This pilot study contributes early evidence that CRA-SIM was effective in increasing multiplication with regrouping performance with regard to both conceptual and procedural learning which are importance components of state standards according to the CCSS (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). All of the students made progress with regard to conceptual and procedural learning. Although progress was shown after just ten lessons, additional practice opportunities after instruction are likely needed to build fluency across students. In conclusion, CRA-SIM was demonstrated to be an easily implemented intervention within an RtI prevention model which resulted in significant student learning.

References

- Deshler, D. D., & Schumaker, J. B. (1993). Strategy mastery by at-risk student: Not a simple matter. *The Elementary School Journal*, 94, 153-167.
- Flores, M. M., Hinton, V. M., & Strozier, S. D. (in press). Teaching subtraction and multiplication with regrouping using the concrete-representational-abstract sequence and the strategic instruction model. *Learning Disabilities Research & Practice*.
- Flores, M. M. (2009). Teaching subtraction with regrouping to students experiencing difficulty in mathematics. *Preventing School Failure*, 53, 145-152.
- Flores, M.M. (2010). Using the Concrete-Representational-Abstract sequence to teach subtraction with regrouping to students at risk for failure. *Remedial and Special Education*, 31(3), 195-207. doi: 10.1177/0741932508327467
- Harris, C. A., Miller, S. P., & Mercer, C. D. (1995). The initial multiplication skills to students with disabilities in general education classrooms. *Learning Disabilities Research & Practice*, 10, 180-195.
- Individuals with Disabilities Education Improvement Acts of 2004, Pub. L. No. 108-446, 118 Stat. 2647 (2004) (amending 20 U.S.C. §§ 1440 et seq.).
- Flores, M.M. (2010). Using the Concrete-Representational-Abstract sequence to teach subtraction with regrouping to students at risk for failure. *Remedial and Special Education*, 31(3), 195-207. doi: 10.1177/0741932508327467
- Mercer, C.D., & Miller, S.P. (1992). Teaching students with learning problems in math to acquire, understand, and apply basic math facts. *Remedial and Special Education*, 13(3), 19-35. doi: 10.1177/074193259201300303
- Miller, S. P., & Kaffar, B. J. (2011). Developing addition and regrouping competence among second grade students. *Investigations in Math Learning*, 4(1), 35-51.

- Miller, S.P., Stringfellow, J.L., Kaffar, B.J., Ferreira, D., & Mancl, D. (2011). Developing computation competence among students who struggle with mathematics. *Teaching Exceptional Children*, 44(2), 38-46.
- Mitchell, B. B., Deshler, D. D., & Lenz, K. B. (2012). Examining the role of the special educator in a response to intervention model. *Learning Disabilities: A Contemporary Journal* 10(2), 53-74.
- Morin, V. A., & Miller, S. P. (1998). Teaching multiplication to middle school students with mental retardation. *Treatment of Children*, 21(1), 22-36.
- National Governors Association Center for Best Practices & Council of Chief State School Officers (2010). *Common Core state standards*. Washington, DC: National Governors Association Center for Best Practices & Council of Chief State School Officers.
- Peterson, S. K., Mercer, C.D., & O'Shea, L. (1988). Teaching learning disabled children place value using the concrete to abstract sequence. *Learning Disabilities Research*, 4, 52-56.
- Swanson, E., Solis, M., & Ciullo, S. (2012) Special education teachers' perceptions and instructional practices in response to intervention implementation. *Learning Disability Quarterly*, 35(2), 115-126.

About the Authors

Margaret M. Flores is an Associate Professor in the Department of Special Education, Rehabilitation, and Counseling at Auburn University. She taught students with disabilities within the public schools before earning her doctorate in special education at Georgia State University. Her research interests include effective mathematics instruction for students with disabilities.

Toni M. Franklin is an Assistant Professor in the Department of Childhood and Exceptional Student Education at Armstrong Atlantic State University. She was a special education teacher and general education teacher prior to earning her doctorate in rehabilitation and special education at Auburn University. Her research interests include effective teacher preparation and academic interventions for students with disabilities.

Student and Teacher Perceptions of the Five Co-Teaching Models: A Pilot Study

Randa G. Burks-Keeley, M.A.
New Mexico State University

Monica R. Brown, Ph.D.
New Mexico State University

Abstract

The potential benefits of co-teaching for students with disabilities are numerous, but more research is needed to ascertain the effectiveness of and preferences toward the current models. The purpose of this study was to (1) investigate student and teacher perceptions regarding the five co-teaching models (i.e., One Teach/One Assist, Station Teaching, Parallel Teaching, Alternative Teaching, and Team Teaching) as outlined, and (2) compare teacher and student perceptions to determine the impact on learning and teaching behaviors (i.e., classroom management, teaching model, confidence, engagement, learning, motivation, behavior, differentiated instruction, teacher authority, and work requirements). The results indicated that students and teachers perceive differences among the five co-teaching models and applies statistical data to previous findings that the one teach/one assist co-teaching model is ineffective.

Student and Teacher Perceptions of the Effectiveness of Co-Teaching Models: A Pilot Study

Since the passing of the 1975 law, *The Education for All Handicapped Children Act (EAHCA)*, students with disabilities have been entitled to an education in the least restrictive environment (LRE). And, subsequent reauthorizations (1990, 1997, and 2004) of EAHCA [now the Individuals with Disabilities Education Improvement Act (IDEA)] have maintained the principle of educating students with disabilities in the LRE. The LRE can take on many forms in the classroom ranging from self-contained to the general education setting. Once the specific needs of the child, based on their disability, are assessed the LRE can be determined. For many students with disabilities the LRE is something in between the resource classroom with a special educator and the general education classroom with one general educator. Some schools have chosen to provide this intermediary classroom in the form of the inclusive, co-taught classroom; a classroom in which both students with and without disabilities are instructed by both a general and special educator.

Today, the necessity for the inclusion of students with disabilities into the general education classroom has never been more evident due to the demand for the LRE. As the inclusive classroom structure began to take form, such terms as differentiated instruction and universal design for learning (UDL) became crucial in the special education profession (Anderson & Algozzine, 2007; Chapman & King, 2005; Lewis & Batts, 2005; Richards & Omdal, 2007; Rose & Meyer, 2002; Tomlinson & McTighe, 2006). It became obvious to educational professionals that simply transplanting students with disabilities into a general education classroom with only

accommodations would not be enough. General educators, for many reasons (i.e., lack of experience, course work, professional development), were generally not equipped to meet the needs of students with disabilities (Alvarez-McHatton, & Daniel, 2008; Idol, 2006; Ploessl, Rock, Schoenfeld, & Blanks, 2010). Therefore, co-teaching became a viable option for serving students with disabilities while also maintaining the integrity of the general education content (Dieker & Berg, 2002). The co-taught classroom, generally speaking, has both a general educator certified to teach in the respective content area and a special educator certified in special education. As co-taught classrooms continue to become more commonplace in schools across the United States it will become necessary to document the effectiveness of it as a strategy, what is expected, and what constitutes success in those co-taught classroom.

Co-Teaching as an Effective Instructional Method

A successful co-taught classroom can be beneficial to students according to administrators, teachers and students (Scruggs, Mastropieri, & McDuffie, 2007). Co-teaching provides a viable option to serve students with disabilities in general education settings in accordance with IDEA (Villa, Thousand, & Nevin, 2008). Although research is limited with regard to this topic, the benefits of co-teaching are evident in many aspects regarding both students (e.g., availability of two licensed teachers in the classroom, smaller student-teacher ratio, ability to monitor behaviors more closely, etc.) and educators (e.g., professional satisfaction, enhanced instruction, immediate lesson feedback, avoidance of student conflicts, etc.)(Conderman, 2011; Dieker, 2001; Fenty & McDuffie-Landrum, 2011; Keef & Moore, 2004; Lawton, 1999; Magiera & Zigmond, 2005; Murawski, 2008; Nichols, Dowdy, & Nichols, 2010; Rice, Drame, Owens, & Frattura, 2007; Walther-Thomas, 1997).

Benefits for Students with Disabilities

Students in co-taught classrooms benefit from having two teachers in the classroom with them at all times in that they receive more help as it is needed (Conderman, 2011; Fenty & McDuffie-Landrum, 2011; Nichols, Dowdy, & Nichols, 2010). Murawski (2008) contended that co-teaching “is considered a viable option for ensuring students have a ‘highly qualified’ content teacher in the room, while also ensuring that all students’ individualized education needs are met by an instructor who is highly qualified in differentiation strategies” (p. 29). Similarly, students with disabilities experience multiple benefits from the co-taught classroom including positive behavior, curriculum, and social improvements as described in the paragraphs below.

Behavior Benefits

Students have cited that the presence of two teachers in the classroom deters negative behavior (Dieker, 2001). The presence of two teachers cuts down the student to teacher ratio and minimizes behavior issues (Dieker, 2001; Magiera & Zigmond, 2005). Specifically, students with emotional and behavioral disorders (EBD) have been traditionally served in more restrictive environments, but because two teachers are available to monitor behaviors the students benefit from the co-taught classrooms (Dieker, 2001). In addition to improved behaviors in the classroom, students can also anticipate curriculum benefits in the form of enrichment.

Curriculum Enrichment Benefits

Students with disabilities receive a more enriched curriculum in the co-taught classroom as opposed to what they may receive in a resource classroom (Lawton, 1999; Rice, Drame, Owens,

& Frattura, 2007). The student to teacher ratio is reduced in half in the co-taught classroom allowing teachers the opportunity to focus instruction on smaller groups. Dieker (2001) concluded that a positive learning environment is created in a co-taught classroom resulting in higher academic and behavioral performance. Furthermore, when the classroom environment is idealistic, academic gains for students with disabilities can be perceived (Fenty & McDuffie-Landrum, 2011; Magiera & Zigmond, 2005). Moreover, Murawski and Swanson (2001) found that co-teaching is moderately effective in influencing positive student outcomes. Along with curricular benefits, co-taught students with disabilities can experience an improved social experience.

Social Benefits

Students with disabilities benefit socially from the co-taught classroom because the stigma of attending a segregated class is removed (Fenty & McDuffie-Landrum, 2011; Keefe & Moore, 2004). Students with disabilities experience stronger relationships with general education peers as well as positive feelings about themselves as capable learners (Walther-Thomas, 1997). Similarly, students with disabilities have a built-in advocate in the classroom with them to ensure accommodations are taking place as required by their Individual Education Plan (IEP) (Rice et al., 2007). Finally, teachers reported that students with disabilities are able to operate at a higher level academically when paired with general education peers (Nichols, Dowdy, & Nichols, 2010). The benefits experienced by students are numerous and the benefits of co-teaching are evident for educators as well.

Benefits for Educators

Teachers who participated in co-taught classes found that they experienced professional satisfaction and enjoyed opportunities for personal growth, support, and opportunities for collaboration (Fenty & McDuffie-Landrum, 2011; Friend, 2007; Scruggs, Mastropieri, & McDuffie, 2007; Walther-Thomas, 1997; Weiss & Brigham, 2000). Additionally, co-teaching functions to enhance instruction for new teachers when paired with more experienced co-teaching partners (Sack, 2005). When co-teaching partners are able to effectively collaborate, having another teacher present is a means to effectively provide lesson feedback or changes that might be made to help a student better grasp a concept (Forbes & Billet, 2012). In terms of students, personality conflicts can be avoided as well because there is another teacher in the classroom that can assist that student (Forbes & Billet, 2012). Effective co-teaching partners are able to combine skill sets in order to model collaboration for other teachers (Fenty & McDuffie-Landrum, 2011).

Co-teaching Models

Presently, there are five co-teaching models most often implemented in co-taught classrooms. They include: (1) One Teach/ One Assist, (2) Station Teaching (3) Parallel Teaching (4) Alternative Teaching, and (5) Team Teaching. These models have been studied and discussed over the years (Cook & Friend, 1995; Fenty & McDuffie-Landrum, 2011; Forbes & Billet, 2012; Hepner & Newman, 2010; Nichols, Dowdy, & Nichols, 2010; Sileo, 2011). Friend and Cook (1993) described the five models as (1) one teach/one assist where typically the general education teacher provides content instruction while the special educator “drifts” through the classroom assisting students who need additional help, (2) station teaching where the content is divided into three parts and each teacher is responsible for delivering a portion of content while a

group of students work independently (students rotate until they have received all content), (3) parallel teaching where the class is separated into two groups while each teacher delivers the same content to their group, (4) alternative teacher where one teacher works with a small group to re-teach, supplement, or pre-teach while the other teacher presents content to the large group, and (5) team teaching where both teachers take turns presenting content information to the large group.

Method

Despite the available research on the benefits and effectiveness of co-teaching as an instructional strategy/method, there is no research available regarding teacher and student preferences for each of the five co-teaching models (Murawski & Swanson, 2001; Weiss, 2004). In order to implement the models most effective for the students being served, educators need to know what students and teachers perceive as most effective from a learner and teacher perspective and why. This research presents survey/rubric findings for the purpose of creating better co-teaching partnerships with the ultimate goal of improving learner and teacher experiences in the inclusive co-taught classroom. From the findings, inferences are made regarding what is needed in co-taught classrooms to facilitate better teaching and learning outcomes. Therefore, this study was conducted to ascertain: (1) student and teacher perceptions regarding the five co-teaching models, and (2) how those perceptions impact teaching and learning in the co-taught classroom.

The researchers chose an exploratory survey (rubric) method to identify educator and student perceptions of the five co-teaching models.

The overarching questions this study answered included:

1. Are there perceived differences (among students) between the five co-teaching models (e.g., One Teach/One Assist, Station Teaching, Alternative Teaching, Parallel Teaching, or Team Teaching)? If so, what differences are found?
2. Are there perceived differences (among teachers) between the five co-teaching models (e.g., One Teach/One Assist, Station Teaching, Alternative Teaching, Parallel Teaching, or Team Teaching)? If so, what differences are found?
3. Are there perceived differences between student and teacher perceptions with regard to the five co-teaching models (e.g., One Teach/One Assist, Station Teaching, Alternative Teaching, Parallel Teaching, or Team Teaching)? If so, what are these differences?

Survey Instrument

This study involved the (1) administration of survey rubrics (see Tables 2 and 3), (2) the administration of student and teacher general information questionnaire; (3) the completion of a teacher reflection (See Table 3), and (4) teacher implementation of each of the co-teaching models discussed earlier in this paper.

The rubrics employed a Likert Scale of one through five (five being the highest score and one being the lowest score) to measure student and teacher perceptions. Each category had a descriptor to better inform students and teachers about the expectation for each score level. The student rubric was checked using the Frye Readability scale and was found to be at the fifth

grade level. The teacher and student rubrics had several of the same categories (i.e., Classroom Management, Student Confidence, Learning, etc.) in order to analyze for statistical interactions. See Tables 2 and 3 for the teacher and student rubric and the categories and descriptors. Prior to the administration of the rubric a script explaining the process and Likert scale was read to the students in order to aid them in choosing the most exact score.

Methods

School District

The participating school district is located in the southeastern portion of the US and serves grades K-12. There are fifteen schools in the district (9 elementary, 3 middle (grades 5-7)), 2 junior high (grades 8-9), 1 high and 1 alternative school). The district's student population is 8,838, with 39.9% of students receiving free or reduced lunches, 18.5% considered at the poverty level, 70.5% Caucasian, 9.7% African American, 10.9% Hispanic, 4.4% Asian, and 0.8% American Indian. Approximately 10.9% of the students have been identified as having a disability and receive special educational services.

School Selected

Perceptions of co-teaching models were collected from students attending a junior high school in a small city in the southeastern part of the United States. This school was selected because of the progressive approach of the administrator to obtain researched data regarding the special education service model employed. The school is predominantly Caucasian, but with a large proportion of African American students as compared to the other junior high school in the district. The total enrollment for the 2011-2012 school year was 630 students, including 64% Caucasian, 19% African American, 14% Hispanic, 2% Asian, and 1% American Indian. Approximately 51% of the students were eligible for free or reduced lunches and 13% received special education services for a disability. The students selected for this study were representative of that demographic. Additionally, at the time of the study, the school in the study employed approximately 49 full time teachers.

Setting

The school and classrooms selected for participation in this study were located in a junior high school that accommodated eighth and ninth grade students. The classrooms were in natural settings in a junior high school environment. There were a total of four classrooms that participated in this study. Two of the classrooms were eighth grade and two were ninth grade. All were inclusive classrooms and included students with and without individualized educational programs (IEPs). The research team and school administrator felt that the inclusion of four classes would provide usable data for the co-teaching pair that could be applied to their personal instruction. Additionally, student groups represented by each classroom can and will have different experiences based on the organic classroom make-up and responses may be affected by the individual student's specific classroom experience. This research gave the co-teaching pair information about all of the co-taught classrooms they were assigned to teach that provided the opportunity for comparison data per classroom. Additionally, the co-teaching pair chosen were most interested in having this type of data about their co-teaching process and were willing to take the steps necessary for the successful implementation of this project.

Participants

The student participants in this study ($N= 37$) were a subsample of a large, urban school district in the southeastern United States. All students in the study received instruction in a co-taught setting in an English Language Arts classroom. Students within the classroom were classified as general education or special education. Of the 37 students, 15 are identified as having a disability; they ranged in age from 13 to 16 years of age. The large range in ages was due to the fact that both grades eighth and ninth were represented. The disabilities in the classroom were mild to moderate and included specific learning disabilities in reading and writing, Attention Deficit and Hyperactivity Disorder, and Autism Spectrum Disorder.

The teacher participants ($N= 2$) were also representative of the teacher demographic of the school district. Both teachers have taught between eight and ten years and one of the teachers holds a graduate degree while the other teacher is currently pursuing a graduate degree. The classroom was an English Language Arts classroom and both teachers are certified in the respective content area of English Language Arts. The special educator had taught in a co-taught setting for one year (while currently seeking certification in Special Education grades 4-12) and the general educator had co-taught for eight years. The 2012-2013 academic school year marked their second year as co-teaching partners. The co-teaching partners participated in a one-on-one explanation of the co-teaching models and the expectation of what characterized each model. At this time only one school participated in the study. This study served as a pilot study and a means to pare down the current rubric to better assess co-taught classrooms. Future research will include a larger student and teacher sample size in order to glean generalizations.

Selection of Participants

After receiving consent from the researchers' Institutional Review Board and the school district to conduct the study, student, teacher, and parent consent forms were prepared and mailed, with a return envelope, to the two participating teachers. Once the Assent/Consent Forms were mailed, coding preparation for the rubrics was initiated. The teacher and student rubrics were color coded (i.e., pink for One Teach/One Assist; blue for Station Teaching; green for Alternative Teaching; yellow for Parallel Teaching; and purple for Team Teaching). The rubrics were also number coded one through 37 so that each student would receive the same rubric number for each co-teaching model. Additionally, a script was prepared for the teachers to read to the students prior to their completion of the rubrics. All of the rubrics were then packaged into separate envelopes with return envelopes for each set, boxed, and sent to the two participating co-teachers. Finally, a conference call was arranged with the teachers to discuss all of the materials they had received and to field any questions/concerns they had regarding their participation in the study. The conference call concluded with agreement as to the dates the study would commence and instructions for return of the surveys.

Design and Procedures

The research design was created through collaboration between the authors of this paper. It was decided that a co-teaching team would teach their respective classroom of students for two consecutive days using each co-teaching model in order to create a controlled environment. Although it limited the flexibility of the teachers, it provided the researchers with a deliberate instructional approach to co-teaching. The co-teaching team was selected through collaboration with the selected junior high school's principal. The study lasted a total of ten days. (See Table

1 for the Teaching Schedule.) Student and teacher perceptions would be measured using a rubric. (See Tables 2 and 3 for samples of the Rubrics). Teachers and students received a separate rubric that they completed following the second day of teaching for each co-teaching model. In all they completed a total of five rubrics. Additionally, all participants provided certain demographic and personal information prior to receiving instruction. At the conclusion of the study, teachers also completed a reflection page regarding their thoughts and experiences during the study.

Survey Instruments

The Student and Teacher Co-teaching Rubrics (see Tables 2 and 3) were designed specifically by the authors for this study. The Student Co-teaching Rubric was designed to measure student perceptions in the following areas: classroom management, teaching model, teacher confidence, engagement, learning, motivation, behavior, differentiated instruction, work requirements, student confidence, and teacher authority. The student rubric was checked using the Frye Readability scale and was found to be at the fifth grade level. The teacher and student rubrics had several of the same categories (i.e., Classroom Management, Student Confidence, Learning, etc.) allowing comparisons to be analyzed for statistical interactions. (See Tables 2 and 3 for the teacher and student rubric and the categories and descriptors.) Prior to the administration of the rubric, a script explaining the process and Likert scale was read to the students in order to aid them in choosing the most exact score. Additionally, the Teacher Co-teaching Rubric was designed to measure the teacher perceptions in the following areas: classroom management, teaching model, teacher confidence, engagement, learning, implementation, behavior, differentiated instruction, student work production, student confidence, teacher authority, teacher impact, and learning accommodations and strategies. The teachers were also given a Teacher Reflection piece that asked reflection questions.

Results

Data were analyzed using an ANOVA with repeated measures to determine if students reflected differences existing between the five co-teaching models with respect to the rubric categories (i.e., classroom management, teaching model, teacher confidence, engagement, learning, motivation, behavior, differentiated instruction, work requirements, student confidence, and teacher authority). An ANOVA with repeated measures was also used to test for the presence of differences between the five co-teaching models and the rubric descriptors as per teacher perspectives (i.e., regarding classroom management, teaching model, teacher confidence, engagement, learning, implementation, behavior, differentiated instruction, student work production, student confidence, teacher authority, teacher impact, learning accommodations and strategies). The predetermined level of significance for the ANOVA with repeated measures was set at $\alpha \leq 0.05$. Additionally, the post hoc test for Least Significant Differences (LSD) was also applied to data results. The predetermined level of significance for the post hoc test was set at $\alpha \leq 0.05$. However, because the sample size for this study was small the researcher retained those items that displayed a trend or significance level of $\alpha \leq 0.08$ but >0.05 for further study..

Student Comparisons

Results from the ANOVA with repeated measures testing for differences in student perceptions across the teaching models revealed significant differences for teaching model ($F, (3.277) =$

0.0029), teacher authority ($F, (3.021) = 0.049$), student confidence ($F, (4.49) = 0.002$), student learning ($F, (4.133) = 0.004$), and a trend for classroom management ($F, (2.356) = 0.059$). Results of post hoc analyses to identify which co-teaching models differences in perceptions varied significantly are reflected in tables 5-9, [i.e., Teaching Model (Table 5), Teacher Authority (Table 6), Student Confidence (Table 7), Student Learning (Table 8), Classroom Management (Table 9)].

Student perceptions of teacher confidence, work requirements, motivation, engagement, and behavior were not at a statistically significant level ($\alpha > 0.05$). Therefore, student feelings with regards to each of these areas did not vary with each co-teaching model. With regard to behavior, student behavior is minimized because of the presence of two teachers; therefore, the findings of this research in regard to behavior serve to reinforce already established tenets of co-teaching benefits (Dieker, 2001; Magiera & Zigmond, 2005).

Teacher Comparisons

Results from the ANOVA with repeated measures testing for differences in teacher perceptions across the teaching models revealed significant differences for classroom management ($F, (34.000) = 0.001$) and implementation ($F, (13.833) = 0.007$). Results of post hoc analyses are reported in tables 10 and 11 [i.e., classroom management (Table 10) and implementation (Table 11)]. The statistical power of any findings with regards to the teachers was greatly diminished because of the small number of participants.

Student and Teacher Comparisons

The greatest interaction with regards to the teacher and student perceptions of the five co-teaching models included classroom management [(Category: $F, (1.164) = .018$) (Model: $F, (4.164) = 3.833$) (Category and Model: $F, (4.164) = 2.073$)] and teaching model [(Category: $F, (1.164) = .033$) (Model: $F, (4.164) = 6.223$)] [(Category and Model: $F, (4.164) = 4.702$, with a level of significance $\alpha \leq 0.05$)]. Furthermore, although an interaction was not discovered with regard to student work ($F, 1.160 = 20.970$, with a level of significance $\alpha \leq 0.05$) and student confidence ($F, (1.162) = 6.664$, with a significance $\alpha \leq 0.05$) between teachers and students, there was a significant difference between the categories.

Discussion

Implications for Co-teachers

The findings from this study suggest that there is a perceived difference between the five co-teaching models from both a student and teacher perspective. This study applies statistical data to previous findings that the one teach/one assist co-teaching model is ineffective. This study specifically targets areas in which the one teach/one assist co-teaching model is ineffective (i.e., establishing teacher authority, student learning, and student confidence). Specifically, this study is able to conclude that in terms of Classroom Management (i.e., teachers presenting themselves as equal partners with regard to instruction, discipline, and answering student questions) One Teach/One Assist was significantly less than Station and Parallel Teaching. Regarding Teaching Model (i.e., both teachers presented new material to the class) students responded that the One Teach/One Assist model was significantly lower than both Parallel and Team Teaching and that Alternative Teaching was significantly less than Parallel and Team Teaching. More importantly

for teachers, student perspectives with regard to learning (i.e., the amount of the lesson they were able to understand) and confidence (i.e., how comfortable the students were with the content upon lesson completion) were greatly affected by the model with them reporting that the One Teach/One Assist model was statistically lower than almost all other co-teaching models. Additionally, the presence of parity in the classroom (i.e., Teacher Authority or power distribution between teachers in the classroom) is also evident to students with One Teach/One Assist scoring statistically lower than Station and Team Teaching and Alternative Teaching scoring statistically lower than Station, Parallel, and Team Teaching.

This data implies that students perceive differences in their classroom experience and the differences that directly affect the way they feel about their learning and their confidence level about their learning. This type of information is abundantly important to co-teaching partners because it is undeniable evidence that how they choose to operate in the classroom with their partner is directly relatable to student perceptions of their learning experience.

Additionally, these findings highlight the need for further research in this area to determine the degree to which students and teachers perceive differences between the co-teaching models. The findings of this research concluded that students perceived differences between co-teaching models in the areas of classroom management, teaching model, learning, student confidence, and teacher authority. This type of research can improve co-teaching and inclusive teaching practices in an effort to meet the needs of an inclusive classroom with co-teaching partners by encouraging the implementation of co-teaching models that are perceived as more effective from the student perspective.

Limitations and Future Research

The objective of the study was to serve as a pilot study in order to determine if further research in this specific area could be warranted. Researchers used a survey method that measured perceptions for data collection which serves as a limitation. Additionally, the survey measured perceptions which typically employ a qualitative research design. Researchers determined that a larger group of participants could increase the power of the study as well as provide a more diverse response. Additionally, co-teaching partners at varying stages of experience could improve this study as well. Teachers who participated in this study reported that although the content reading level of the rubric was appropriate, the length of the rubric was tedious for the students who participated, especially those with specific learning disabilities in reading. Lastly, the study was conducted over a ten day period which removed flexibility from the co-teaching partners and removed the opportunity for a more organic implementation of the co-teaching models. Also, because the teachers were required to closely adhere to a strict timeline, and they were asked to use the models as they are typically ordered in literature (i.e., one teach/one assist, station teaching, alternative teaching, parallel teaching, and team teaching) another level of flexibility was removed.

The continuation of this line of research will include a larger group of both students and teachers for survey purposes as well as an extended time period for data collection in order to provide teachers with flexibility. Additionally, the rubric will be reduced in length to remove tediousness and streamlined for easier data collection.

Conclusion

A co-taught classroom is fitted with a natural abundance of resources in that one teacher is specifically skilled in the content that is being taught while the other is trained to target special instructional needs of the students. It is a waste of time, energy, resources, and money when the full instructional potential of both teachers in the classroom is not fully realized. Therefore, each teacher should be responsible for sharing an equal and/or equitable load (based on mutual agreement) of instructional duties (Murawski, 2009). In order for instruction to take place and co-teaching teams to move into the models such as station, parallel, alternative, and team teaching; a collaborative effort between both co-teaching partners must be present.

The findings of this study suggest that differing student perceptions exist with regard to the five co-teaching models. Specifically, students feel more confident and feel they have learned more when certain models are employed. Students feel more confidence with regard to content when station, alternative, parallel, or team teaching models are being employed. Students feel that they have learned more when the alternative, parallel, and/or team teaching models have been incorporated. This information can be applied to current co-teaching practices in order to improve the student experience in the co-taught classroom.

References

- Alvarez-McHatton, P., & Daniel, P.L. (2008). Co-teaching at the preservice level: Special education majors collaborate with English education majors. *Teacher Education and Special Education*, 31(2), 118-131.
- Anderson, K.M., & Algozzine, B. (2007). Tips for teaching: Differentiating instruction to include all students. *Preventing School Failure*, 51(3), 49-54.
- Chapman C., & King, R. (2005). Eleven practical ways to guide teachers towards differentiation (and an evaluation tool). *Journal of Staff Development*, 26(4), 20-25.
- Cook, L., & Friend, M. (1995). Co-teaching: Guidelines for creating effective practices. *Focus on Exceptional Children*, 28(3), 1-16.
- Conderman, G. (2011). Middle School Co-teaching: Effective Practices and Student Reflections. *Middle School Journal*, 42(4), 24-31.
- Dieker, L.A. (2001). What are the characteristics of “effective” middle and high school co-taught teams for students with disabilities? *Preventing School Failure*, 46, 14-23.
- Dieker, L., & Berg, C. (2002). Collaborative program development between secondary Science, Mathematics, and special educators. *Teacher Education and Special Education*, 25(1), 92-99.
- Fennick, E., & Liddy, D. (2001). *Teacher Education and Special Education*, 24(3), 229-240.
- Fenty, N., & McDuffie-Landrum, K. (2011). Collaboration through Co-teaching. *Kentucky English Bulletin*, 60(2), 21-26.
- Forbes, L., & Billet, S. (2012). Successful Co-teaching in the Science Classroom. *Science Scope*, 36(1), 61-64.
- Friend, M. (2007). The Coteaching Partnership. *Educational Leadership*, 64(5), 48-52.

- Hepner, S., & Newman, S. (2010). Teaching is teamwork: preparing for, planning, and implementing effective co-teaching practice. *International Schools Journal*, 29(2), 67-81.
- Idol, L. (2006). Toward inclusion of special education students in general education: A program evaluation of eight schools. *Remedial and Special Education*, 27(2), 77-94.
- Individuals with Disabilities Act of 1997, § 1400 et. seq.; 34 C.F.R. § 300 et. seq.
- Kamens, M.W. (2007). Learning about co-teaching: A collaborative student teaching experience for preservice students. *Teacher Education and Special Education*, 30(3), 155-166.
- Keefe, E. B., & Moore, V. (2004). The Challenge of Co-teaching in Inclusive Classrooms at the High School Level: What the Teachers Told Us. *American Secondary Education*, 32(3), 77-88.
- Lawton, M. (1999, March/April). Co-teaching: Are two heads better than one in an inclusion classroom? *Harvard Education Letter*. Retrieved October 5, 2012, from <http://www.hepg.org/hel/article/323>.
- Lewis, S.G., & Batts, K. (2005). How to implement differentiated instruction? Adjust, adjust, adjust. *Journal of Staff Development*, 26(4), 26-31.
- Magiera, K., & Zigmond, N. (2005). Co-teaching in middle school classrooms under routine conditions: Does the instruction experiences differ for students with disabilities in co-taught and solo-taught classes? *Learning Disabilities Research and Practices*, 20, 79-85.
- Murawski, W. W. (2008). Five Keys to Co-teaching in Inclusive Classrooms. *School Administrator*, 65(8), 29.
- Murawski, W.W. (2009). *Collaborative teaching in secondary schools: Making the co-teaching marriage work!* Thousand Oaks, CA: Corwin.
- Murawski, W.W., & Swanson, H.L. (2001). A meta-analysis of co-teaching research: Where are the data? *Remedial and Special Education*, 22(5), 258-267.
- National Center for Education Statistics. (2012). School Directory Information: Ramay Junior High School. Retrieved February 1, 2013 from the National Center for Education Statistics website: <http://www.nces.ed.gov>.
- Nichols, J., Dowdy, A., & Nichols, C. (2010). Co-teaching: An educational promise for children with disabilities or a quick fix to meet the mandates of No Child Left Behind? *Education*, 130(4), 647-651.
- No Child Left Behind Act of 2001, PL 107-110, 115 Stat. 1425, 20 U.S.C. 11 6301 et seq.
- Ploessl, D.M., Rock, M.L., Schoenfeld, N., & Blanks, B. (2010). On the same page: Practical techniques to enhance co-teaching interactions. *Intervention in School and Clinic*, 45(3), 158-168.
- Rice, N., Drame, E., Owen, L., & Frattura, E. M. (2007). Co-Instructing at the Secondary Level. *Teaching Exceptional Children*, 39(6), 12-18.
- Richards, M.R.E., & Omdal, S.N. (2007). Effects of tiered instruction on academic performance in a secondary science course. *Journal of Advanced Academics*, 18(3), 424-453.
- Rose, D., & Meyer, A. (2002). *Teaching every student in the digital age: Universal design for learning*. Alexandria, VA: ASCD.
- Sack, J. L. (2005). Divide Over Co-teaching Widens in Florida. *Education Week*, 25(4), 26-28.
- Scruggs, T. E., Mastropieri, M. A., & McDuffie, K. A. (2007). Co-teaching in Inclusive Classrooms: A Metasynthesis of Qualitative Research. *Exceptional Children*, 73(4), 392-416.

- Sileo, J. M. (2011). Co-teaching: Getting to Know Your Partner. *Teaching Exceptional Children*, 43(5), 32-38.
- Tomlinson, C.A., & McTighe, J. (2006) *Integrating differentiated instruction and understanding by design*. Alexandria, VA: Association for Supervision and Curriculum.
- Villa, R.A., Thousand, J.S., & Nevin, A.I. (2008). *A guide to co-teaching: Practical tips for facilitating student learning* (2nd ed.). Thousand Oaks, CA: Corwin Press.
- Volonino, V., & Zigmond, N. (2007). Promoting research-based practices through inclusion? *Theory Into Practice*, 46(4), 291-300.
- Walther-Thomas, C.S. (1997). Co-teaching experiences: The benefits and problems that teachers and principals report over time. *Journal of Learning Disabilities*, 30(4), 395-407.
- Weiss, M.P., & Brigham, F.J. (2000). Co-teaching and the model of shared responsibility: What does the research support? *Advances in Learning and Behavioral Disabilities*, 14, 217-245.
- Weiss, M.P. (2004). Co-teaching as science in the schoolhouse: More questions than answers. *Journal of Learning Disabilities*, 37(3), 218-223.
- U.S. Department of Education. (2002). *Twenty-fourth annual report to congress on the implementation of the individuals with disabilities education act*. Washington, DC: Office of Special Programs and Rehabilitative Services.

About the Authors

Randa G. Burks-Keeley, M.A: Ms. Burks-Keeley is a Doctoral Candidate of Special Education in the Department of Special Education and Communication Disorders at New Mexico State University. Her research focus is in the area of co-teaching and inclusive practices in literacy. Prior to entering the doctoral program at New Mexico State University, Ms. Burks-Keeley held teaching assignments in the general, gifted, and special education classroom. Additionally, Ms. Burks-Keeley serves as a reviewer for multiple special education journals. Ms. Burks-Keeley will continue her research of co-taught classrooms and inclusive practices upon her graduation.

Monica R. Brown, Ph.D: Dr. Monica R. Brown Brown is a Professor of Special Education in the Department of Educational and Clinical Studies at UNLV. She teaches in the area of Secondary (Special) Education, which includes reading, transition, and methods courses. Her research focuses on the intersectionality of disability, culture, and technology in special education. Prior to coming to UNLV, Dr. Brown was a faculty member for 10 years at New Mexico State University. Dr. Brown currently serves on editorial boards for 5 national and 1 international journal(s) and is an Associate Editor for the Diversity column of *Intervention in School and Clinic*. Dr. Brown is also a member of CLD's Diversity Committee and presents annually with a cohort from the Committee on issues relevant to diversity and special populations. Dr. Brown plans to continue her research with CLD populations with disabilities and hopes to continue her work internationally. *Note.* Dr. Brown will begin her tenure at UNLV in August of 2014.

Table 1
Co-teaching Model Illustration

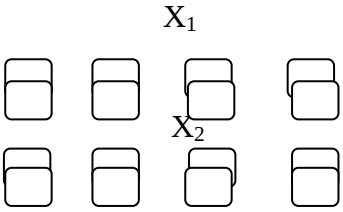
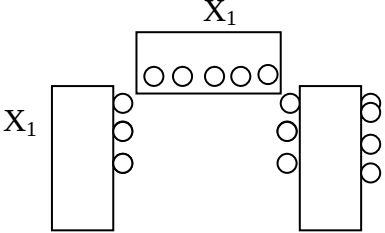
Co-teaching Model	Description	Configuration	Teaching Days
One Teach/One Assist	-one educator retains the instructional lead in the classroom while the other circulates through the room providing assistance and support to the students as needed -requires very little collaboration between the teachers prior to classroom instruction	 The diagram shows a classroom layout with two rows of four student desks each. Teacher X₁ is positioned at the top center, and Teacher X₂ is positioned in the middle of the second row, slightly to the right of center.	Week 1; Days 1 and 2.
Station Teaching	- three separate learning activities are created that relate to the learning goal -each co-teacher leads a group while the third group works independently the groups then rotate and the cycle continues until all three groups have received all three pieces of the content	 The diagram shows three groups of students. On the left, a vertical rectangle represents a group of four students. In the center, a horizontal rectangle represents a group of five students. On the right, another vertical rectangle represents a group of four students. Teacher X₁ is positioned to the left of the central group, and Teacher X₂ is positioned to the right of the central group.	Week 1; Days 3 and 4.

Table 1(continued)
Co-teaching Model Illustration

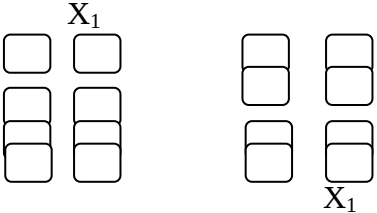
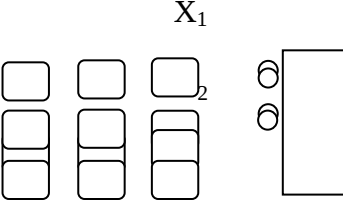
Co-Teaching Model	Description	Configuration	Teaching Days
Parallel Teaching	- teachers to teach the same lesson to half the class - lessons are taught simultaneously and the groups are divided heterogeneously so as to keep both groups on the same time schedule - both teachers accommodate students with disabilities and general education students so as to maintain the integrity of the inclusion classroom	 The diagram shows two groups of three students each, represented by squares. Above the first group is the label X_1. To the right of the second group is the label X_1. Two teachers, represented by circles, are positioned to teach both groups simultaneously.	Week 1, Day 5; Week 2, Day 1.
Alternative Teaching	- requires that a classroom be divided into two groups - one group is smaller and receives an alternate lesson from the larger group - larger group of students will continue on with the regular lesson - pertinent to vary groupings when using this co-teaching model	 The diagram shows three groups of students: a group of three, a group of two, and a group of one. Above the first group is the label X_1. To the right of the second group is the label X_2. Two teachers, represented by circles, are positioned to teach the groups.	Week 2; Days 3 and 4.

Table 1(continued)

Co-teaching Model Illustration

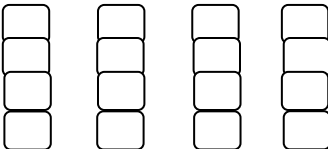
Co-Teaching Model	Description	Configuration	Teaching Days
Team Teaching	-requires that both teachers teach the same lesson together - co-teachers take turns presenting the material together, demonstrate while the other teacher is speaking, role-play, and answer student questions as they arise - Co-teachers can ask questions of one another during instruction so as to avoid potential confusion for students	$X_1 X_1$ 	Week 2, Days 4 and 5.

Table 2
Student Questions and Rubric

Student Rubric

Grade: _____

Please answer the following five (5) questions to the best of your ability.

1. Do you receive special education services? Yes ____ No ____
2. If yes, why do you receive special education services?
3. Have you ever been taught in a co-taught (two teachers sharing the teaching responsibilities) classroom prior to this classroom?
4. How many co-taught classrooms have you been a student in?
5. What were the subjects (i.e., Science, Mathematics, History, etc.) of those courses?

	Classroom Management	“X” One
5	The teachers presented themselves as equal partners with regard to discipline and answering student questions.	
4	The teachers mostly presented themselves as equal partners with regard to discipline and answering student questions.	
3	Some of the time one teacher would answer student questions and manage discipline while the other teacher would teach the class.	
2	Most of the time one teacher was in charge of answering student questions and managing discipline while the other teacher taught the class.	
1	One teacher answered student questions and disciplined students while the other teacher taught the class.	

Table 2 (continued)

	Teaching Model	“X” One
5	Both teachers presented new material to the class.	
4	For the most part, both teachers presented new material to the class.	
3	Some new information was provided by one of my teachers, but most new information came from the other teacher.	
2	Very little new information was presented by one of my teachers.	
1	New material was presented to the class by one teacher.	

	Teacher Confidence	“X” One
5	I can ask both of my teachers about what we are learning and I know they will both be able to help me.	
4	I am fairly certain both of my teachers can answer any question I may have about the material we are learning.	
3	I am not sure both of my teachers can answer any question I may have about the material we are learning.	
2	I am fairly certain I cannot ask one of my teachers a question about the material we are learning.	
1	I know that one of my teachers cannot answer a question I may have about the material we are learning.	

	Engagement	“X” One
5	Because of the things we were doing in class, I felt as though I was able to give my total attention to the lessons.	
4	There were several things we did in class that held my attention, but not everything.	
3	There were only two or three things that we did in class that helped me to pay attention.	
2	We did very little in class that helped me to pay attention and stay interested.	
1	Much of what we did in class was boring and I had a hard time paying attention.	

Table 2 (continued)

	Learning	“X” One
5	This style of teaching helped me to understand 90-100% of the lessons.	
4	This style of teaching helped me to understand 80-89% of the lessons.	
3	This style of teaching helped me to understand 70-79% of the lessons.	
2	This style of teaching helped me to understand 60-69% of the lessons.	
1	This style of teaching helped me to understand less than half of the lessons.	

	Motivation	“X” One
5	Because of the ways my teachers taught me I felt excited, like I could complete all of my work easily.	
4	Because of the ways my teachers taught me I felt mostly ready to finish all of my work.	
3	Because of the ways my teachers taught me I felt somewhat ready to finish all of my work.	
2	Because of the ways my teachers taught me I did not really feel like doing any work.	
1	After being taught this way I did not want to finish my work.	

	Behavior	“X” One
5	My behavior was much better because of the teaching style and the activities.	
4	My behavior was better than normal because of the teaching style and the activities.	
3	My behavior was somewhat better than normal because of the teaching style and the activities.	
2	My behavior was not that much better than normal because of the teaching style the activities.	
1	This style of teaching had NO impact on my behavior. I was like I always am in class.	

Table 2 (continued)

	Differentiated Instruction	“X” One
5	My teachers offered many different ways for me to learn the material. (e.g. I could see it, hear it, touch it, and try it for myself)	
4	My teachers offered 2-3 different ways for me to learn the material.	
3	My teachers offered at least 2 different ways for me to learn the material.	
2	My teachers offered only 1 way for me to learn the material.	
1	My teachers offered no alternative ways for me to learn the material. I was expected to learn the material for myself with no instruction.	

	Work Requirements	“X” One
5	The work that I have been asked to do in class is important work and it will help me to learn the new material.	
4	The work that I have been asked to do in class is mostly important and it should help me to learn the new material.	
3	The work that I have been asked to do in class could be important and it might help me learn the new material.	
2	The work that I have been asked to do in class does not seem that important and I don’t think that it will help me learn the new material.	
1	I don’t feel that the work we are doing in class is important because it is not helping me to learn the new material.	

Table 2 (continued)

	Student Confidence	“X” One
5	After the last two lessons and teaching style I feel confident that I could answer any question about the material.	
4	After the last two lessons and teaching style I feel mostly confident that I could answer any question about the material.	
3	After the last two lessons and teaching style I feel somewhat confident that I could answer any question about the material.	
2	After the last two lessons and teaching style I do not feel very confident about answering questions about the material.	
1	I don’t feel like I learned much over the last two days and I hope my teacher does not ask me a question about the material.	

	Teacher Authority	“X” One
5	Over the last two days it seemed that both of my teachers have the same amount of power in the classroom.	
4	Over the last two days it seemed that, for the most part, both of my teachers have the same amount of power in the classroom.	
3	Over the last two days it seemed that one of my teachers may have had a little more power than the other teacher.	
2	Over the last two days one of my teachers seemed more powerful than the other teacher.	
1	Over the last two days it is obvious that one of my teachers is more powerful than the other teacher.	

Table 3

Teacher Questions, Rubric, and Reflection

Teacher Questions

Please respond to the questions below prior to completing the rubric.

1. What is your race/ethnicity? _____
2. What age range do you fall in?
20 – 25 _____ 26 – 30 _____ 31 – 35 _____ 36 – 40 _____ above 40 _____
3. Number of years you have taught? _____
4. Number of years you have co-taught? _____
5. Main content area(s) taught? _____
6. Specific grade level(s) taught? _____
7. Are you a general or special education teacher? _____
8. What is your current teaching assignment?
9. How much time do you spend co-planning with your partner weekly?
10. When co-planning what is your role?
11. Highest degree? And content area if appropriate. (For example: Master's in Curriculum and Instruction --- Science Education):

Table 3 (continued)

Teacher Rubric

Please complete the rubric below by placing an “X” at the end of each row next to the descriptor that best identifies your feelings regarding this co-teaching experience. After you have completed the rubric you may provide additional comments regarding your scores on the back of this packet. Please complete independent of your co-teaching partner.

	Classroom Management	“X” One
5	We presented ourselves as equal partners with regard to discipline and answering student questions.	
4	We mostly presented ourselves as equal partners with regard to discipline and answering student questions.	
3	Some of the time one of us would answer student questions and manage discipline while the other would teach the class material.	
2	Most of the time one of us was in charge of answering student questions and managing discipline while the other taught the class.	
1	One teacher answered student questions and disciplined students while the other teacher taught the class.	

	Teaching Model	“X” One
5	Both teachers presented new material to the class	
4	For the most part, both teachers presented new material to the class.	
3	Some new information was provided by one of us, but most new information came from my partner.	
2	Almost all new information came from my partner while I added a few things here and there.	
1	New material was presented to the class by one teacher.	

Table 3 (continued)

	Teacher Confidence	“X” One
5	I am totally confident I could answer any question my students may have about the new material that we covered.	
4	I am fairly confident I could answer any question my students may have about the new material that we covered.	
3	I am not totally confident I could answer any question my students may have about the new material that we covered.	
2	I am fairly certain I cannot answer questions my students may have about the new material that we covered.	
1	I know that I would have to defer to my partner to answer a question my students may have about the new material that we covered.	

	Engagement	“X” One
5	My co-teaching partner and I used multiple strategies to engage our students in the lesson.	
4	My co-teaching partner and I used some strategies to engage our students in the lesson.	
3	There was very little emphasis placed on student engagement with these past two lessons.	
2	We did very little in class to help engage students in the learning process.	
1	There was no attempt to engage students in the learning process.	

Table 3 (continued)

	Learning	“X” One
5	It seemed as though this style of teaching helped my students to understand 90-100% of the material covered.	
4	It seemed as though this style of teaching helped my students to understand 80-89% of the material covered.	
3	It seemed as though this style of teaching helped my students to understand 70-79% of the material covered.	
2	It seemed as though this style of teaching helped my students to understand 60-69% of the material covered.	
1	It seemed as though this style of teaching helped my students to understand less than half of the material covered.	

	Implementation	“X” One
5	This model was very difficult to implement and took much longer than normal to plan.	
4	This model was somewhat more difficult to implement and took longer than normal to plan.	
3	This model was not much more difficult to implement and didn’t seem to take much longer than normal to plan.	
2	This model was easily implemented and took almost the same amount of time as normal to implement.	
1	This model took no extra effort on our part to implement.	

Table 3 (continued)

	Behavior	“X” One
5	As a result of the model used, student behavior improved significantly.	
4	As a result of the model used, student behavior improved.	
3	As a result of the model used, student behavior seemed to improve.	
2	As a result of the model used, student behavior didn’t really seem to improve.	
1	As a result of the model used, student behavior did not improve at all and may have gotten worse.	

	Differentiated Instruction	“X” One
5	All students were appropriately challenged over the last two lessons and many methods of differentiate were used.	
4	Most students were appropriately challenged over the last two lessons and some methods of differentiation were used.	
3	Not all students were appropriately challenged over the last two lessons and few methods of differentiation were used.	
2	There was little focus on appropriately challenging students over the last two lessons.	
1	We offered no differentiated instruction.	

	Student Work Production	“X” One
5	The work product received from students was superior as a result of the last two lessons.	
4	The work product received from students was above average as a result of the last two lessons.	
3	The work product received from students was somewhat better as a result of the last two lessons.	
2	The work product received from students did not seem any better than normal.	
1	The work product from students was worse than normal and many did not finish the assignment.	

Table 3 (continued)

	Student Confidence	“X” One
5	I feel very confident that any student could answer questions about the material we have covered in the last two lessons.	
4	I feel confident that any student could answer questions about the material we have covered in the last two lessons.	
3	I feel somewhat confident that any student could answer questions about the material we have covered in the last two lessons.	
2	I do not feel confident that any student could answer questions about the material we have covered in the last two lessons.	
1	I don’t feel like the students could confidently answer questions about the content that we have covered in the last two lessons.	

	Teacher Authority	“X” One
5	Over the last two lessons neither teacher appeared to have any more authority than the other teacher.	
4	Over the last two lessons both teachers mostly appeared to have the same amount of authority.	
3	Over the last two lessons my co-teacher may have appeared to have more authority than me.	
2	Over the last two lessons it appeared that I had less authority than my co-teacher.	
1	Over the last two lessons it appeared that I had no authority in the classroom.	

Table 3 (continued)

	Teacher Impact	“X” One
5	I worked with all students.	
4	I worked with almost all students.	
3	I worked with many students, but I found myself focusing on students that have behavior issues or receive special education services.	
2	I worked with a few students, but they were mostly students that have behavior issues or receive special education services.	
1	I only worked with very few students, most of them receiving special education services.	

	Learning Accommodations and Strategies	“X” One
5	My partner and I implemented at least 5 accommodations and/or strategies over that last two lessons.	
4	My partner and I implemented 3-4 accommodations and/or strategies over the last two days.	
3	My partner and I implemented 1-2 accommodations and/or strategies over the last two days.	
2	My partner and I implemented 1 accommodations and/or strategies over the last two days.	
1	My partner and I did not attempt to implement any accommodations and/or strategies over the last two days.	

Comments/Clarifications:

Table 3 (continued)

Teacher Reflection: (Complete at the end of the two week period)

1. Do you and your co-teaching partner often vary your roles? Explain.
2. What are some of the drawbacks of your current teaching assignment?
3. Did you choose to enter this co-teaching assignment for the 2012-2013 school year or were you assigned? Explain.
4. After these past two weeks, do you feel the purpose of co-teaching is to help students improve socially or academically? Explain.
5. In your opinion, how important is it for both teachers to know and understand the content that is being taught?
6. In your opinion, how important is the implementation of different strategies for learning?

Table 4

A Description of Instruction for Each Model

Model	8 th Grade Day One	8 th Grade Day Two	9 th Grade Day One	9 th Grade Day Two
One Teach/One Assist	Speech Analysis: General educator read aloud JFK's inaugural address with stop and start questioning. Special Educator assisted students and maintained all behavior issues.	Speech Response: General educator lead students in a written response to JFK's inaugural address. Special educator assisted students during independent work time.	MLA Citations: General educator lead a PowerPoint presentation regarding citations in MLA format. Special educator managed classroom behavior and assisted students as necessary.	MLA Citations: Continued: General educator lead a PowerPoint presentation regarding citations in MLA format. Special educator managed classroom behavior and assisted students as necessary.
Station Teaching	Essay Writing: Station 1: Writing a Thesis Statement Station 2: Writing a Hook Station 3(Independent): Using the Thesis Statement and Hook to write essay	Essay Writing continued: Station 1: Revising Thesis Statement Station 2: Revising Hook Station 3 (Independent): Continue writing essay	Essay Writing: Station 1: Writing a Thesis Statement Station 2: Writing a Hook Station 3(Independent): Using the Thesis Statement and Hook to write essay	Essay Writing continued: Station 1: Revising Thesis Statement Station 2: Revising Hook Station 3 (Independent): Continue writing essay
Parallel Teaching	Analyzing Poetry: "The Death of Emmet Till" Both teachers began reading from poem and started a language analysis and discussion. Students divided into	Analyzing Poetry continued: "The Death of Emmet Till" Both teachers continued reading from poem and completed a language analysis and discussion.	Analyzing Poetry: "Sonnet" in <i>Romeo and Juliet</i> Both teachers analyzed the sonnet from <i>Romeo and Juliet</i> . Students divided into two groups, heterogeneous.	Analyzing Poetry continued: "Sonnet" in <i>Romeo and Juliet</i> Both teachers analyzed the sonnet from <i>Romeo and Juliet</i> and completed worksheet on William Shakespeare. Students divided

	two groups, heterogeneous.	Students divided into two groups, heterogeneous.		into two groups, heterogeneous.
Alternative Teaching	Analyzing Speeches: General educator took a larger group of students to read along with the “St. Crispins Day Speech” while the special educator took a small group that required additional literacy support to read the same speech.	Analyzing Speeches: General educator took large group to complete written response to “St. Crispins Day Speech” while special educator worked with a smaller group of students that required additional writing support.	Writing Prompt: Students were given a writing prompt the previous day. Special educator took a small group to complete the graphic organizer associated with the prompt. General educator remained with the larger group to facilitate them writing the essay associated with the graphic organizer.	Writing Prompt: Special educator continues to work with students to complete graphic organizer for writing support and also begin writing their essay. General educator remained with larger group to facilitate the completion of their essays.
Team Teaching	Analyzing Poetry: Both teachers lead the students in reading “Richard Cory” and “The Builders”. Both teachers respond to all students and participate in content delivery.	Analyzing Poetry: Both teachers facilitated the written response to the poems from the previous day. Both teachers provided instruction and moved around the room to provide added support.	Analyzing Prompt and Rubric: Both teachers shared in the instruction of the prompt for the common assessment and the rubric that would be used to grade their writing sample.	Analyzing Prompt and Rubric: Both teachers introduced a graphic organizer for arranging the written response and the brainstorming process. Students began work on graphic organizers, both teachers assisted all students.

Table 5

Student Teaching Model Post Hoc Comparison

Results of post hoc all possible pair wise comparison for teaching model (TM).

(i) TM	(j) TM	Mean Difference (i-j)	SE	sig	95% C.I. for Difference	
					Lower Bound	Upper Bound
1	2	-0.417	0.269	0.135	-0.972	0.139
	3	0.250	0.409	0.547	-0.597	1.097
	4	-0.667*	0.280	0.026	-1.246	-0.087
	5	-0.583*	0.269	0.040	-1.139	-0.028
2	1	0.417	0.269	0.135	-0.139	0.972
	3	0.667	0.393	0.103	-0.147	1.480
	4	-0.250	0.211	0.247	-0.686	0.186
	5	-0.167	0.293	0.575	-0.772	0.439
3	1	-0.250	0.409	0.547	1.097	0.597
	2	-0.667	0.393	0.103	-1.097	0.597
	4	-0.917*	0.340	0.013	-1.480	0.147
	5	-0.833*	0.333	0.020	-1.523	-0.144
4	1	0.667*	0.280	0.026	0.087	1.246
	2	0.250	0.211	0.247	-0.186	0.686
	3	0.917*	0.340	0.013	0.213	1.620
	5	0.083	0.208	0.692	-0.347	0.513
5	1	0.583*	0.269	0.040	0.028	1.139
	2	0.167	0.293	0.575	-0.439	0.772
	3	0.833*	0.333	0.020	0.144	1.523
	4	-0.083	0.208	0.692	-0.513	0.347

Note - * indicates significant mean difference between student confidence across categories.

Table 6

Student Teacher Authority Post Hoc Comparison

Results of post hoc all possible pair wise comparison for teacher authority (TA).

(i) TA	(j) TA	Mean Difference (i-j)	SE	sig	95% C.I. for Difference	
					Lower Bound	Upper Bound
1	2	-0.571	0.289	0.062	-1.175	0.032
	3	0.143	0.270	0.602	-0.420	0.706
	4	-0.524	0.306	0.102	-1.161	0.114
	5	-0.476	0.255	0.076	-1.007	0.055
2	1	0.571	0.289	0.062	-0.032	1.175
	3	0.714*	0.317	0.036	0.052	1.376
	4	0.048	0.176	0.789	-0.319	0.414
	5	0.095	0.194	0.629	-0.309	0.500
3	1	-0.143	0.270	0.602	-0.706	0.420
	2	-0.714*	0.317	0.036	-1.376	-0.052
	4	-0.667	0.347	0.069	-1.391	0.058
	5	-0.619	0.327	0.073	-1.301	0.063
4	1	0.524	0.306	0.102	-0.114	1.161
	2	-0.048	0.176	0.789	-0.414	0.319
	3	0.667	0.347	0.069	-0.058	1.391
	5	0.048	0.129	0.715	-0.221	0.316
5	1	0.476	0.255	0.076	-0.055	1.007
	2	-0.095	0.194	0.629	-0.500	0.309
	3	0.619	0.327	0.073	-0.063	1.301
	4	-0.048	0.129	0.715	-0.316	0.221

Note - * indicates significant mean difference between student confidence across categories.

Table 7

Student Confidence Post Hoc Comparison

Results of post hoc all possible pair wise comparison for student confidence (SC).

(i) SC	(j) SC	Mean Difference (i-j)	SE	sig	95% C.I. for Difference	
					Lower Bound	Upper Bound
1	2	-0.682*	0.202	0.028	-1.314	-0.050
	3	-0.091	0.254	0.062	-1.570	0.024
	4	-0.636	0.224	0.097	-1.337	0.065
	5	-0.682*	0.212	0.042	-1.347	-0.017
2	1	0.682*	0.202	0.028	0.050	1.314
	3	-0.091	0.236	1.000	-0.832	0.650
	4	0.045	0.123	1.000	-0.339	0.430
	5	0.000	0.186	1.000	-0.583	0.583
3	1	0.773	0.254	0.062	-0.024	1.570
	2	0.091	0.236	1.000	-0.650	0.832
	4	0.136	0.231	1.000	-0.587	0.860
	5	0.091	0.236	1.000	-0.650	0.832
4	1	0.636	0.224	0.097	-0.065	1.337
	2	-0.045	0.123	1.000	-0.430	0.339
	3	-0.136	0.231	1.000	-0.860	0.587
	5	-0.045	0.154	1.000	-0.527	0.437
5	1	0.682*	0.212	0.042	0.017	1.347
	2	0.000	0.186	1.000	-0.583	0.583
	3	-0.091	0.236	1.000	-0.832	0.650
	4	0.045	0.154	1.000	-0.437	0.528

Note - * indicates significant mean difference between student confidence across categories.

Table 8

Student Learning Post Hoc Comparisons

Results of post hoc all possible pair wise comparison for student learning (SL).

(i) SL	(j) SL	Mean Difference (i-j)	SE	sig	95% C.I. for Difference	
					Lower Bound	Upper Bound
1	2	-0.167	0.143	0.257	-0.463	0.130
	3	-0.458*	0.147	0.005	-0.763	-0.154
	4	-0.458*	0.134	0.002	-0.736	-0.180
	5	-0.292*	0.127	0.032	-0.555	-0.028
2	1	0.167	0.143	0.257	-0.130	0.463
	3	-0.292	0.175	0.110	-0.654	0.071
	4	-0.292*	0.141	0.050	-0.583	0.000
	5	-0.125	0.125	0.328	-0.384	0.134
3	1	0.458*	0.147	0.005	0.154	0.763
	2	0.292	0.175	0.110	-0.249	0.249
	4	0.000	0.120	1.000	-0.249	0.249
	5	0.167	0.143	0.257	-0.130	0.463
4	1	0.458*	0.134	0.002	0.180	0.736
	2	0.292*	0.141	0.050	0.000	0.583
	3	0.000	0.120	1.000	-0.249	0.249
	5	0.167	0.098	0.103	-0.037	0.370
5	1	0.292*	0.127	0.032	0.028	0.555
	2	0.125	0.125	0.328	-0.134	0.384
	3	-0.167	0.143	0.257	-0.463	0.130
	4	-0.167	0.098	0.103	-0.370	0.037

Note - * indicates significant mean difference between student confidence across categories.

Table 9

Student Classroom Management Post Hoc Comparisons

Results of post hoc all possible pair wise comparison for classroom management (CM).

(i) CM	(j) CM	Mean Difference (i-j)	SE	sig	95% C.I. for Difference	
					Lower Bound	Upper Bound
1	2	-0.708*	0.304	0.029	-1.337	-0.080
	3	-0.500	0.289	0.097	-1.097	0.097
	4	-0.625*	0.275	0.032	-1.193	-0.057
	5	-0.500	0.282	0.090	-1.084	0.084
2	1	0.708*	0.304	0.029	0.080	1.337
	3	0.208	0.208	0.328	-0.223	0.639
	4	0.083	0.199	0.679	-0.328	0.495
	5	0.208	0.269	0.447	-0.348	0.765
3	1	0.500	0.289	0.097	-0.097	1.097
	2	-0.208	0.208	0.328	-0.639	0.223
	4	-0.125	0.139	0.377	-0.412	0.162
	5	0.000	0.276	1.000	-0.571	0.571
4	1	0.625*	0.275	0.032	0.057	1.193
	2	-0.083	0.199	0.679	-0.495	0.328
	3	0.125	0.139	0.377	-0.162	0.412
	5	0.125	0.250	0.622	-0.393	0.643
5	1	0.500	0.282	0.090	-0.084	1.084
	2	-0.208	0.269	0.447	-0.765	0.348
	3	0.000	0.276	1.000	-0.571	0.571
	4	-0.125	0.250	0.622	-0.643	0.393

Note - * indicates significant mean difference between student confidence across categories.

Table 10

Teacher Classroom Management Post Hoc Comparisons

Results of post hoc all possible pair wise comparison for classroom management (CM).

(i) CM	(j) CM	Mean Difference (i- j)	SE	sig	95% C.I. for Difference	
					Lower Bound	Upper Bound
1	2	-3.000*	0.316	0.001	-4.2685	-1.7315
	3	-2.500*	0.31623	0.003	-3.7685	-1.2315
	4	-3.000*	0.31623	0.001	-4.2685	-1.7315
	5	-3.000*	0.31623	0.001	-4.2685	-1.7315
2	1	3.000*	0.31623	0.001	1.7315	4.2685
	3	0.500	0.31623	0.563	-0.7685	1.7685
	4	0.000	0.31623	1.000	-1.2685	1.2685
	5	0.000	0.31623	1.000	-1.2685	1.2685
3	1	2.500*	0.31623	0.003	1.2315	3.7685
	2	-0.500	0.31623	0.563	-1.7685	0.7685
	4	-0.500	0.31623	0.563	-1.7685	0.7685
	5	-0.500	0.31623	0.563	-1.7685	0.7685
4	1	3.000*	0.31623	0.001	1.7315	4.2685
	2	0.000	0.31623	1.000	-1.2685	1.2685
	3	0.500	0.31623	0.563	-0.7685	1.7685
	5	0.000	0.31623	1.000	-1.2685	1.2685
5	1	3.000*	0.31623	0.001	1.7315	4.2685
	2	0.000	0.31623	1.000	-1.2685	1.2685
	3	0.500	0.31623	0.563	-0.7685	1.7685
	4	0.500	0.31623	1.000	-1.2685	1.2685

Note - * indicates significant mean difference between student confidence across categories.

Table 11

Teacher Implementation Post Hoc Comparisons

Results of post hoc all possible pair wise comparison for implementation (IMP).

(i) IMP	(j)IMP	Mean Difference (i-j)	SE	sig	95% C.I. for Difference	
					Lower Bound	Upper Bound
1	2	-2.500*	0.54772	0.030	-4.6972	-0.3028
	3	-2.000	0.54772	0.070	-4.1972	0.1972
	4	-3.500*	0.54772	0.007	-5.6972	-1.3028
	5	-3.500*	0.54772	0.007	-5.6972	-1.3028
2	1	2.500*	0.54772	0.030	0.3028	4.6972
	3	0.500	0.54772	0.881	-1.6972	2.6972
	4	-1.000	0.54772	0.450	-3.1972	1.1972
	5	-1.000	0.54772	0.450	-3.1972	1.1972
3	1	2.000	0.54772	0.070	-0.1972	4.1972
	2	-0.500	0.54772	0.881	-2.6972	1.6972
	4	-1.500	0.54772	0.178	-3.6972	0.6972
	5	-1.500	0.54772	0.178	-3.6972	0.6972
4	1	3.500*	0.54772	0.007	1.3028	5.6972
	2	1.000	0.54772	0.450	-1.1972	3.1972
	3	1.500	0.54772	0.178	-0.6972	3.6972
	5	0.000	0.54772	1.000	-2.1972	2.1972
5	1	3.500*	0.54772	0.007	1.3028	5.6972
	2	1.000	0.54772	0.450	-1.1972	3.1972
	3	1.500	0.54772	0.178	-0.6972	3.6972
	4	0.000	0.54772	1.000	-2.1972	2.1972

Note - * indicates significant mean difference between student confidence across categories

Intentionally Left Blank

Students with Disabilities' Perspectives of STEM Content and Careers

Kimberly E Bryant Davis
Oklahoma State University

Abstract

The current global economy has led to an increase in the need for workers in the fields of science, technology, engineering, and mathematics (STEM). Underrepresented populations, such as students with disabilities, are being considered as one way meet the STEM workforce shortages. In order to increase students' participation in STEM careers, it would be helpful to gauge whether students are interested in STEM content. The current study sought to gauge students with disabilities interest in individual STEM content areas. The research question states: How do middle school students with disabilities perceive science, technology, engineering, and mathematics content as measured by STEM Semantics Survey? In total 43 surveys were collected and analyzed. The overall findings indicate that students have the highest perception of technology and the lowest perception of mathematics. Means were analyzed by gender, race/ethnicity, and grade level. Implications and suggestions for practice are shared.

Students with Disabilities' Perspectives of STEM Content and Careers

The current society is progressive. Advances in science, technology, engineering, and mathematics (STEM) are playing a key role in transforming the current global environment (Dunn, Rabren, Taylor, & Dotson, 2012). The current global economy leads to an increase in the need for workers in STEM fields (Alston & Hampton, 2000; National Science Board, 2006; Tyson, Lee, Borman, & Hanson, 2007), careers typically requiring postsecondary preparation. As a result, STEM education has become a priority for the United States (Burgstahler & Chang, 2009; Tyson et al., 2007).

The increased national emphasis on STEM professions which typically postsecondary education has highlighted the workforce needs of the United States. Solutions being proposed include looking to underrepresented populations, including students with disabilities, to fill these shortages. The number of students with disabilities participating in postsecondary education is increasing (Burgstahler & Chang, 2009; Burgstahler & Doyle, 2005; Henderson, 1999, 2001). Considering most STEM careers require some postsecondary preparation, the increase in the number of students with disabilities attending postsecondary education is encouraging. Unfortunately, when comparing students with disabilities attending postsecondary institutions to their peers without disabilities, fewer students with disabilities graduate from high school and enroll in institutions of higher education. Of the students with disabilities who are able to reach these milestones, fewer earn a degree or certificate (Burgstahler & Doyle, 2005). Consequently, few students with disabilities are pursuing STEM careers and the attrition rate of the students with disabilities who pursue STEM is high (Burgstahler & Doyle, 2005; National Science Foundation, 2000; Office of Disability Employment Policy, 2001). Nonetheless, interest in

assisting students with disabilities to pursue STEM careers is increasing (Lam, Doverspike, Zhao, Zhe, & Menzemer, 2008; National Science Foundation, 2000).

Several groups are underrepresented in the STEM areas (Committee on Equal Opportunities in Science and Engineering, 2006; Dunn et al., 2012), including students with disabilities (Alston & Hampton, 2000; Burgstahler & Doyle, 2005; National Science Foundation, 2000). The underrepresentation of people with disabilities in STEM careers is not surprising. Dunn and colleagues (2012) document several barriers to STEM careers for people with disabilities. Barriers include limited educational experiences, limited preparation for STEM careers, and lower participation rates in structured and unstructured STEM-related activities (Dunn et al., 2012).

These challenges begin with early school experiences. As students progress through school and struggle with weak foundations in critical content, their attitudes are affected. Students develop negative attitudes toward STEM subjects as they encounter increasingly complex expository texts and other instructional materials that reduce their ability to access and comprehend scientific information (Basham, Israel, & Maynard, 2010; Lee & Erdogan, 2007; Marino & Beecher, 2010).

Samsonov, Pederson, and Hill (2006) added additional considerations. Students with disabilities require support to manage the extensive information delivered in advanced classes at the secondary level. In addition to the increased cognitive demands, students must manage changing classes or moving from one class period to another within the school day. Secondary settings may also present limited instructional diversity, with many teachers favoring a traditional lecture-type delivery of content. Lastly, secondary teachers may possess inadequate knowledge of effective practices for teaching students with disabilities (Alston & Hampton, 2000; Alston, Hampton, Bell, & Strauss, 1998; Marino & Beecher, 2010; Mastropieri et al., 2006; Robinson, 2002). Commonly utilized text-based instruction at the secondary level provides little support to students who struggle with learning due to limited reading skills or deficits in background knowledge (Basham et al., 2010; Crockett, 2004; Scruggs, Mastropieri, & Okolo, 2008). With the challenging experiences and inadequate preparation it is not surprising that students with disabilities are not prepared for a STEM influenced workforce (Burgstahler & Chang, 2009).

Research suggests that STEM experiences must begin early (Burgstahler & Chang, 2009; Jacobs & Eccles, 1992; Lam et al., 2008; Simpkins, Davis-Kean, & Eccles, 2006). Dunn (2012) emphasizes this need to start early, starting no later than middle school, because early learning experiences play a critical role in career development (Dunn et al., 2012; Lam et al., 2008; Lent, Brown, & Hackett, 1994, 2000; Malian, 2007). Early experiences “shape self-efficacy, beliefs, and outcome expectations, which in turn affect the formation of vocational interest, which subsequently influence occupational goals, choice actions and performance attainments (Lam et al., 2008, p. 22).” Dunn and colleagues (2012) suggest that a foundation for postsecondary education in STEM be made early and include personal development, access to content, experiential development, and postsecondary connecting activities.

Since, students begin career and college preparation at the high school level it is imperative that students with disabilities are exposed to STEM content and careers during early adolescence

(Anderman, 1998). Students are making decisions that will affect the rest of their lives at this juncture. Gauging students' perceptions of STEM at an earlier phase in a students' education will help educators see students are responding positively to STEM content and make conclusions as to whether students may pursue STEM content at higher levels (such as in high school and beyond).

This holds true for all students, including students for disabilities. STEM careers require students begin preparations at the high school level and beyond. To see if students are ready to begin these preparations, students need to begin thinking of STEM in middle school or earlier. The current research study seeks to gauge the perceptions of students with disabilities in regards to STEM content and careers.

Research Question

The research question explored by the current study is: How do middle school students with disabilities perceive science, technology, engineering, and mathematics content as measured by STEM Semantics Survey (Tyler-Wood, Knezek, & Christensen, 2010)?

Method

The research study is a subsection of a bigger study. The study anonymously surveyed middle school students with disabilities enrolled in inclusive classrooms in grades 6, 7, and 8. Students were enrolled in an urban school in a southwest state in the United States.

The researcher first completed IRB process to gain approval for the study. Following the IRB approval, districts were contacted for potential interest in study. As a result two districts were identified. The districts then granted permission to send parent consent forms home with all students enrolled in 6th, 7th, and 8th grade.

At the request of the districts the researcher was not provided direct contact with participants. Instead the researcher worked with either a school or district administrator to ensure anonymity of participants and reduced disruption at the participating schools. The researcher provided the parent consent forms to the administrator. At that point the administrator provided parent consent forms to teachers for distribution to all students.

Students were given approximately two weeks to return parent consent forms. The researcher then collected signed parent consent forms from the administrator to determine how many surveys needed to be provided for each school. After surveys were provided, the administrator distributed the surveys to teachers to administer to students.

Since the researcher was not provided direct access to the teachers or participants, teachers were provided with an optional script for administration. Even though teachers were not required to read the script verbatim, they were encouraged to read the script to ensure necessary instructions were provided to students.

Only students who returned signed parent consent forms were permitted to participate. Prior to administration students were instructed their participation was voluntary and anonymous.

Students were informed that by completing the survey they were giving their consent to participate. Students were informed they may stop or decline participation at any time.

The agreement between the researcher and the districts prevented the researcher from direct contact with students. After surveys were administered, the researcher was contacted to collect completed surveys. The researcher collected the surveys. A graduate assistant assisted with data entry. After the completion of data entry, data were analyzed. The researcher provided each district with a report specific to findings from his or her particular district, in addition to analyzing the data for overall findings.

Instrument

This research study utilized the STEM Semantics Survey (Tyler-Wood et al., 2010). The survey asks students to rank science, technology, engineering, and mathematics individually. Each section begins by asking the participant, “To me, _____ is:” For the different sections a different STEM content area is inserted. Within each section, each item provides two terms that are in contrast with each other and asks the participant to rank each content area on a scale between the two items. To clarify, the first section begins, “To me, SCIENCE is:” following this phrase is 5 pairs of terms that are in contrast with each other with numbers 1-7 listed between the contrasting terms. For example, the first line under science reads: 1. Fascinating 1, 2, 3, 4, 5, 6, 7 mundane. Participants choose how they perceive the individual content areas. The survey has been found to have very good to excellent internal consistency reliability ($\text{Alpha}=.84$ to $\text{Alpha}=.93$), in addition good content, construct, and criterion-related validity (Tyler-Wood et al., 2010).

In addition to the survey, students were instructed to write demographic information in the upper right corner of their survey. Students were asked to list their race/ethnicity, grade level and to include an “X” if they were on an IEP.

For this study surveys from students with disabilities were analyzed. The total number of students with disabilities who participated in this study was 43. Students were not required to disclose his or her specific disability.

Findings

Overall Means

For analysis results from each section was combined into one factor. For example Questions 1, 2, 3, 4, and 5 under the section, “To me, SCIENCE is:” was combined into one factor representing Science. Negatively stated items in the sections were reversed coded for analysis (i.e. #4 and #5 in the Science Section are negatively stated. These items were reverse coded for analysis to reflect the overall positive nature of the section). The range for the group was 1-7. On this scale 1 represents a high perception with 7 representing a low perception. Within the range 4 is located in the middle and can be considered a neutral perspective.

The means were science 2.81, math 3.37, engineering 3.30, and technology 2.31. Overall students ranked technology the highest followed by science. Math was ranked the lowest of the content areas, with engineering following close behind. The mean answer for students for “To

me, a CAREER in science, technology, engineering, or mathematics (is):” was 2.83. If “4” is considered neutral all scores were skewed toward positive perspectives. See Table 1 for further overall mean reporting.

Table 1
Overall Means

	<i>N</i>	<i>M</i>	<i>SD</i>
Science	42	2.81	1.47
Mathematics	42	3.37	1.82
Engineering	41	3.30	1.88
Technology	42	2.31	1.62
Careers	42	2.83	1.97

Means by Gender

The means were further analyzed by gender. There were gender differences evidenced within the data. Based on the data girls’ perceptions would rank the content areas from highest to lowest as science, technology, engineering, and mathematics respectively. Boys would rank the content areas as technology, engineering, mathematics, and science. Boys also had a higher perception of a career in science, technology, engineering, and mathematics. Boys ranked technology first, which is reflective of the overall findings; however, boys appear to have a higher perception of engineering than the girls. Also, boys did not rank mathematics the lowest which is different from the overall findings of the study. See Table 2.

Table 2
Means by Gender

Gender		Science	Mathematics	Engineering	Technology	Careers
Male	<i>M</i>	2.93	2.87	2.60	1.71	2.07
	<i>n</i>	21	21	20	21	21
	<i>SD</i>	1.65	1.80	1.98	1.46	1.86
Female	<i>M</i>	2.72	4.01	3.82	2.82	3.66
	<i>n</i>	20	20	20	20	20
	<i>SD</i>	1.33	1.66	1.41	1.57	1.83
Total	<i>M</i>	2.83	3.45	3.21	2.25	2.84
	<i>N</i>	41	41	40	41	41
	<i>SD</i>	1.49	1.80	1.80	1.60	1.99

Means by Race

Another analysis examined race/ethnicity. The following races/ethnicities were identified within the data: Caucasian/White, African-American/Black, Native American, Hispanic/Spanish descent, and Two or more races. There were race differences evidenced within the data. Based on the data White/Caucasian participants mirrored the overall means of the group ranking content areas from highest to lowest as technology, science, engineering, and mathematics. African-American participants ranked the content from highest to lowest: technology, mathematics, science, and engineering. Participants identifying as Asian ranked the content areas from highest to lowest as mathematics, science, technology, and engineering. Native American participants and participants identifying as Hispanic or Spanish descent ranked the content from highest to lowest as technology, science, mathematics, and engineering. Lastly participants ranked the content areas from highest to lowest as science, technology, engineering, and mathematics.

As with the overall group participants identifying as White or Caucasian, Black or African-American, Native American and Hispanic/Spanish descent all ranked technology highest. Similarly, participants identifying as White or Caucasian and those identifying with two or more races held the lowest perception of mathematics, as with the overall group. Students identifying as Asian was the only group to hold the highest perception as mathematics; however, it should be noted this group contained only two participants.

As far as interest in careers the means ranged from $M=1.45$ - 4.93 . Students identifying as “two or more races” perceived careers in STEM the highest, $M=1.45$. Native American students yielded the lowest perception of STEM careers, $M=4.93$, which indicated a negative leaning perception. See Table 3 for further race reporting.

Table 3
Means by Race/Ethnicity

Race/ Ethnicity		Science	Mathematics	Engineering	Technology	Careers
White	<i>M</i>	2.68	3.64	2.73	2.23	2.56
	<i>n</i>	24	23	23	23	23
	<i>SD</i>	1.46	1.95	1.68	1.80	1.83
African- American/ Black	<i>M</i>	3.97	2.62	4.08	2.30	3.40
	<i>n</i>	6	6	6	6	6
	<i>SD</i>	2.14	1.37	2.35	1.44	2.94
Asian	<i>M</i>	2.60	2.30	5.60	4.10	3.20
	<i>n</i>	2	2	2	2	2
	<i>SD</i>	.57	1.84	1.98	.71	1.13
Native American	<i>M</i>	2.40	3.93	4.60	1.93	4.93
	<i>n</i>	3	3	3	3	3

	<i>SD</i>	.53	2.12	.60	1.62	1.81
Two or	<i>M</i>	1.95	2.35	2.25	2.10	1.45
More	<i>n</i>	4	4	4	4	4
Races	<i>SD</i>	.75	1.58	1.00	1.24	.66
Hispanic or	<i>M</i>	3.27	4.05	4.68	2.40	3.20
Spanish	<i>n</i>	3	4	3	4	4
Descent	<i>SD</i>	.92	1.75	1.84	1.62	1.57
Total	<i>M</i>	2.81	3.37	3.30	2.31	2.83
	<i>n</i>	42	42	41	42	42
	<i>SD</i>	1.47	1.82	1.88	1.62	1.97

Means by Grade Level

The means were further analyzed by grade level. There were grade level differences evidenced within the data. The perceptions of participant enrolled in 8th grade mirrored the overall perceptions: technology (highest), science, engineering, and mathematics (lowest). Sixth grade participants' perceptions were slightly different ranking content areas from highest to lowest as technology, mathematics, science, and engineering. There were only 4 participants from the 7th grade whose perceptions from highest to lowest were technology, engineering, mathematics, and science. All three grade levels had the highest perceptions of technology; however, 6th and 7th graders did not perceive mathematics the lowest. The perception of mathematics drops at each increasing grade level, ranking 2nd for 6th graders, 3rd for 7th graders and finally last for 8th graders.

Data related to careers varied slightly by grade level as well. The highest perception of careers is presented by 7th graders, $M=1.73$, $SD=.70$ and the lowest perception is presented by 6th graders, $M=3.27$, $SD=2.39$. See Table 4.

Table 4
Means by Grade Level

Grade Level		Science	Mathematics	Engineering	Technology	Careers
6th	<i>M</i>	2.78	2.61	3.88	2.38	3.27
	<i>n</i>	17	18	17	18	18
	<i>SD</i>	1.68	1.18	2.02	1.73	2.39
7th	<i>M</i>	3.90	3.47	2.40	1.40	1.73
	<i>n</i>	4	3	3	3	3
	<i>SD</i>	2.25	2.37	1.22	.69	.70
8th	<i>M</i>	2.64	4.00	2.96	2.38	2.62

	<i>n</i>	21	21	21	21	21
	<i>SD</i>	1.08	2.03	1.76	1.63	1.62
Total	<i>M</i>	2.81	3.37	3.30	2.31	2.83
	<i>n</i>	42	42	41	42	42
	<i>SD</i>	1.47	1.82	1.88	1.62	1.97

Considerations

There was consideration of teachers' schedules, effort and time when determining administration of the surveys. With flexibility given to the teachers in administration there was less control over administration. There were no fidelity checks to ensure integrity of treatment. This is evidenced by some portions of the survey being left blank.

This research study is a small study. A total of 43 participants do not provide enough data to generalize results. In addition, students were not required to designate their disability; as a result there may be a wide variety of disabilities represented within the small sample size. However, the data may still provide some insight into how students who are included in inclusive middle school classes perceive STEM content areas.

Discussion

This research study analyzed the STEM perspectives of students with disabilities. Overall 43 surveys were analyzed. This study is a subset of a larger study (author, under review). The larger study included a total of 1873 participants. Of the 1873, 43 self-identified as having a disability, representing just over 2% of the larger study. The researcher expectation was around 10% of the larger study based on the participating districts population of students served by special education.

The first point of discussion is the lack of identification of students with disabilities. The ideal situation would have included having students identified through the school. Unfortunately, that was not the case. Consequently, the study relied on self-identification by students with disabilities. This was a huge limitation for this research study. This lack of self-identification is not surprising. Students may not be comfortable indicating their disability status or may be unaware. However, students in middle school are beginning the transition process; at this grade level transition is starting to be discussed in IEP meetings. Students are getting to an age where they may be involved in their IEP meetings and their interests and desires are being weighed with their needs to determine their futures.

Students are at an age where they are ready to begin self-advocating. Students should feel empowered understanding that they have a disability. Considering only 43 students of the total 1873, an assumption can be formed that this population of students do not know they have a disability or are not comfortable discussing their disability. For students who are being included in general education classrooms STEM careers may be within their grasp, if they understand that they have a disability and know what supports will assist their learning potential. If students do

not understand that they need additional supports, what those supports are and how to use them effectively in their content classes, STEM content will continue to be out of their grasp. Self-awareness is difficult to provide to students in a positive manner; however, self-awareness is key to students understanding their learning needs and reaching their academic goals.

Overall students ranked content areas as technology ($M=2.31$), science ($M=2.81$), engineering ($M=3.30$), and mathematics ($M=3.37$, see table 1). Technology was perceived highest, which isn't surprising considering the technological society we live in. However, this should not be mistaken to mean students are effective with technology. The idea of digital natives continues to be debated in the literature and students appear to use mostly social media and commonly established technologies (i.e. messaging). (Bennett & Maton, 2010; Bennett, Maton, & Kervin, 2008; Margaryan, Littlejohn, & Vojt, 2011; Salajan, Schonwetter, & Cleghorn, 2010; Waters, 2011). Seeing how students interest in technology is already high this a great time to expose students to more intricate technologies and demonstrating effective use of various technologies, in addition to increasing technology in the classroom to increase student engagement as many teachers are currently doing in their classrooms.

Overall students ranked mathematics last ($M=3.37$, see table 1). Students perceive mathematics the least positively. Sullivan, Tobias, & McDonough (2006) discusses students' under-participation in mathematics may be determined by the culture students are surrounded by, meaning students may be capable of doing more mathematics, but their disinterest in the subject affects their motivation to participate in the subject area. This study does not investigate how students participate in mathematics; however, if students who have the capacity to achieve in mathematics are disinterested in the subject, logic indicates the likelihood they will enroll in higher level mathematics classes at the secondary level will be low. It is interesting to note that when looking at individual groups mathematics is not always perceived as the lowest content area. In these instances mathematics has the 2nd or 3rd lowest perception. This is the case for boys, specific races/ethnicities (including Black/African American, Hispanic/Spanish descent, Asian, and Native American) 6th and 7th graders.

Implications

Self-awareness

This study and the larger study associated with this study (author, under review) demonstrate the need to encourage self-awareness for students with disabilities. There are curricula available that can assist with students becoming self-aware. These curricula could truly benefit all students. Even though, we know students served by special education need specific supports to be successful academically, it would be helpful for all students to learn about their academic strengths and needs, what supports will assist their academic achievement, and how to respectfully advocate for their needs. One resource that is available free is a curriculum called, "ME!" This research based curriculum (Cantley, 2011) focuses on self-awareness and is available from the Zarrow Center: <http://www.ou.edu/content/education/centers-and-partnerships/zarrow/transition-education-materials/me-lessons-for-teaching-self-awareness-and-self-advocacy.html>. Other Self-determination packages are available, but may be pricey and may not address self-awareness specifically.

Technology

With the high perception of technology students with disabilities in this study hold ($M=2.31$), teachers should encourage the use of technology. Many teachers are integrating technology into different content areas to engage students. Students can also be introduced to new and more effective technologies, in addition to assistive technology, to increase their awareness of the different ways technology can be used outside of social media and messaging.

Mathematics

Students in this study perceived mathematics the lowest ($M=3.37$). Students may need positive experiences around mathematics. Some students begin to experience difficulties in mathematics at the middle school level due to a weak foundation from prior school experience. This may be the case for the participants as the data demonstrate a decreased interest in mathematics as they progress through middle school, which usually also means an increase in complexity of the content area. Students with foundational weaknesses need to be identified early and provided with supports. Students who are not successful with mathematics at the middle school level or who do not have a solid mathematics foundation will have difficulty with higher level mathematics in high school.

In addition, some students disengage in mathematics due to disinterest in the subject (Sullivan et al., 2006). Students who are not interested in mathematics may not choose to take the higher level mathematics in high school. Without the higher level mathematics in high school post-school STEM opportunities will be limited.

Careers

Students may benefit by being exposed to careers in STEM. Students were overall positive about STEM careers; however, some students may be unaware of what professions fall under the category of STEM fields or may not know or understand the expectations or responsibilities of those professions. In addition, this survey solely asked about science careers. Students should know STEM careers are broader than that.

Conclusion

The present study sought to gauge students with disabilities' perception of STEM. Although small in scope, there were some findings worth noting. First, students perceived technology highest. This may be influenced by the prevalence of technology in the current society (i.e. smartphones, tablets). Conversely, mathematics was perceived the lowest. The perception of mathematics drops a rank as students advance through middle school, ranked 2nd for 6th graders, 3rd for 7th graders, and last for 8th graders.

Looking at the findings closer, girls had the highest perception of science. This is different from the overall findings. Girls perceived mathematics lowest, which aligns with the overall findings. Boys had the lowest perception of science and the highest perception of technology.

Gauging students' perceptions of STEM does not guarantee their success in the content areas. However, as Sullivan and colleagues (2006) found, students' disinterest in a content area affects

their motivation to participate in that subject area. Also, if students do not perceive the content to be important, an assumption can be made that the students will not be motivated to participate.

Even though STEM should ideally be an integrated academic experience, students are still required to take specific content areas at the secondary level. Students with disabilities need to see the relevance of the individual content areas. By determining where students with disabilities interests lie educators can determine where efforts should be focused to encourage all students to seek out STEM content and ultimately STEM careers.

References

- Alston, R. J., & Hampton, J. (2000). Science and engineering as viable career choices for students with disabilities: A survey of parents and teachers. *Rehabilitation Counseling Bulletin*, 43(3), 158-164.
- Alston, R. J., Hampton, J.L., Bell, T.J., & Strauss, M. (1998). Matriculation of persons with disabilities in science and engineering: Perceptions of rehabilitation counselors. *Journal of Applied Rehabilitation Counseling*, 29(3), 5-8.
- Anderman, Eric M. (1998). The middle school experience: Effects on the math and science achievement of adolescents with LD. *Journal of Learning Disabilities*, 31(2), 128-138.
- Basham, James D., Israel, Maya, & Maynard, Kathie. (2010). An ecological model of STEM education: Operationalizing STEM FOR ALL. *Journal of Special Education Technology*, 25(3), 9-19.
- Bennett, S., & Maton, K. (2010). Beyond the 'digital natives' debate: Towards a more nuanced understanding of students' technology experiences. *Journal of Computer Assisted Learning*, 26(5), 321-331.
- Bennett, S., Maton, Karl, & Kervin, Lisa. (2008). The 'digital natives' debate: A critical review of the evidence. *British Journal of Educational Technology*, 39(5), 775-786.
- Burgstahler, Sheryl, & Chang, Chuan. (2009). Promising interventions for promoting STEM fields to students who have disabilities. *Review of Disability Studies An International Journal*, 5(2), 29-47.
- Burgstahler, Sheryl, & Doyle, Andrea. (2005). Gender differences in computer-mediated communication among adolescents with disabilities: A case study. *Disability Studies Quarterly*, 25(2). <http://dsq-sds.org/article/view/552/729>
- Cantley, Penny. (2011). *A study examining the effectiveness of the ME! lessons to teach self-awareness and self-advocacy to students with disabilities*. (Doctor of Philosophy Dissertation), University of Oklahoma, Norman, OK. (3454008)
- Committee on Equal Opportunities in Science and Engineering. (2006). 2005-2006 Biennial report to Congress. Arlington, VA: National Science Foundation.
- Crockett, Jean B. (2004). Taking stock of science in the schoolhouse: Four ideas to foster effective instruction. *Journal of Learning Disabilities*, 37(3), 189-199.
- Dunn, Cari, Rabren, Karen S., Taylor, Stephanie L., & Dotson, Courtney K. (2012). Assisting students with high-incidence disabilities to pursue careers in science, technology, engineering, and mathematics. *Intervention in School and Clinic*, 48(1), 47-54.
- Henderson, C. (1999). College freshman with disabilities: Statistical year 1998. Washington, DC: American Council on Education.

- Henderson, C. (2001). College freshman with disabilities: A biennial statistical profile. Washington, DC: American Council on Education.
- Jacobs, J. E., & Eccles, J. S. (1992). The impact of mothers' gender-role stereotypic beliefs on mothers' and children's ability perceptions. *Journal of Personality and Social Psychology*, 63, 932-944.
- Lam, Paul, Doverspike, Dennis, Zhao, Julie, Zhe, John, & Menzemer, Craig. (2008). An evaluation of a STEM program for middle school students on Learning Disability related IEPs. *Journal of STEM Education*, 9(1&2), 21-29.
- Lee, M., & Erdogan, I. (2007). The effect of science-technology-society teaching on students' attitudes toward science and certain aspects of creativity. *International Journal of Science Education*, 11, 1315-1327.
- Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior*, 45, 79-122.
- Lent, R. W., Brown, S. D., & Hackett, G. (2000). Contextual supports and barriers to career choice: A social cognitive analysis. *Journal of Counseling Psychology*, 47, 36-49.
- Malian, I. (2007). MVP: Math villages for inclusive practices: A model to engage all students and teachers in STEM experiences. *Electronic Journal for Inclusive Education*, 7(2). <http://www.cehs.wright.edu/resources/publications/ejie/WinterSpring2011/JIE%20MVP.htm>
- Margaryan, Anoush, Littlejohn, Allison, & Vojt, Gabrielle. (2011). Are digital natives a myth or reality? University students' use of digital technologies. *Computers & Education*, 56(2), 429-440.
- Marino, Matthew T., & Beecher, Constance C. (2010). Conceptualizing RTI in 21st-century secondary science classrooms: Video games' potential to provide tiered support and progress monitoring for students with Learning Disabilities. *Learning Disability Quarterly*, 33(4), 299-311.
- Mastropieri, M. A., Scruggs, T. E., Norland, J. J., Berkeely, S., McDuffie, K., Tornquist, E. H., & Connors, N. (2006). Differentiated curriculum enhancement in inclusive middle school science: Effects on classroom and high-stakes tests. *The Journal of Special Education*, 40, 130-137.
- National Science Board. (2006). Science and engineering indicators 2006 (Vol. 1, NSB06-01; Vol. 2, NSB 06-01A). Arlington, VA: Author.
- National Science Foundation. (2000). Women, minorities, and persons with disabilities in science and engineering. Washington, DC: U.S. Government Printing Office.
- Office of Disability Employment Policy. (2001). Improving the availability of community-based services for people with disabilities. Washington, DC: Author.
- Robinson, S. (2002). Teaching high school students with learning and emotional disabilities in inclusion science classrooms: A case study of four teachers' beliefs and practices. *Journal of Science Teacher Education*, 13, 13-26.
- Salajan, Florin D., Schonwetter, Dieter J., & Cleghorn, Blanie M. (2010). Student and faculty inter-generational digital divide: Fact or fiction? *Computers & Education*, 55(3), 1393-1403.
- Samsonov, P., Pedersen, S., & Hill, C. (2006). Using problem-based learning software with at-risk students: A case study. *Computers in the Schools*, 23(1/2), 111-124.

- Scruggs, T. E., Mastropieri, M. A., & Okolo, C. (2008). Science and social studies for students with disabilities. *Focus on Exceptional Children*, 41, 1-25.
- Simpkins, S. D., Davis-Kean, P. E., & Eccles, J. S. (2006). Math and science motivation: A longitudinal examination of the links between choices and beliefs. *Developmental Psychology*, 42(1), 70-83.
- Sullivan, Peter, Tobias, Steve, & McDonough, Andrea. (2006). Perhaps the decision of some students not to engage in learning mathematics in school is deliberate. *Educational Studies in Mathematics*, 62(1), 81-99.
- Tyler-Wood, Tandra, Knezek, Gerald, & Christensen, Rhonda. (2010). Instruments for assessing interest in STEM content and careers. *Journal of Technology and Teacher Education*, 18(2), 341-363.
- Tyson, Will, Lee, Reginald, Borman, Kathryn M., & Hanson, Mary Ann. (2007). Science, technology, engineering, and mathematics (STEM) pathways: High school science and math coursework and postsecondary degree attainment. *Journal of Education for Students Placed At Risk*, 12(3), 243-270.
- Waters, John K. (2011). Will the real digital native please stand up? *Campus Technology*, 25(2), 26-28.

About the Author

Kimberly Davis is an assistant professor of special education in the School of Teaching and Curriculum Leadership at Oklahoma State University. Her research interest include increasing the access of STEM content and careers to students with mild disabilities.

Intentionally Left Blank

A Researcher's Story of Assessing Motor Skills of Children with Autism Spectrum Disorder

**Casey M. Breslin
Temple University**

**Alice M. Buchanan
Auburn University**

Abstract

The purpose of this study was to explore and interpret a researcher's experiences while conducting motor skill assessments of children with autism spectrum disorder (ASD). The first author and participant-researcher was, at the time of the study, a kinesiology doctoral candidate studying motor behavior. The second author, an associate professor of kinesiology, was the interviewer. Data were captured through interviews, transcribed, and analyzed by bracketing, constructing, and contextualizing (Denzin, 1989). The three major themes that emerged were Participant Emotions, Research Protocols, and Children's Behavior. The participant-researcher experienced enjoyment and frustration for the research process, and sympathized with the children. A second theme matched the three protocols in the dissertation: traditional-full sentences, picture schedule, and task cards. Finally, a third theme addressed her perceptions of children's behaviors.

A Researcher's Story of Assessing Motor Skills of Children with Autism Spectrum Disorder

The purpose of our study was to explore and interpret my experiences while conducting quantitative research examining motor skill assessments of children with ASD. This paper will examine my reflections and observations while conducting research to develop a better way to assess the motor skills of children with ASD using the Test of Gross Motor Development (Second Edition; TGMD-2) when picture task cards and picture activity schedules are and are not used.

Self-Study

There is a well-established body of research on self-study in the field of teacher education (Louie, Drevdahl, Purdy, & Stackman, 2003), as teacher educators explore ways to contribute to theory and to improve practice through reflection and study of their own teaching (e.g., Bullock & Ritter, 2011; Loughran, 2007; Lunenberg & Samaras, 2011; Zeichner, 2007). As teachers, we broaden the scope of self-study to include examination of one's own research with children with ASD. In other words, this is a study of the research process itself and how particular difficulties in research settings examining ASD can be overcome. Bullough and Pinnegar (2001) say the following regarding self-study:

It is the balance between the way in which private experience can provide insight and solution for public issues and troubles and the way in which public theory can provide insight and solution for private trial that forms the nexus of self-study... (p. 15).

Having another voice in research facilitates extending self-study beyond the personal alone. The participant-researcher is challenged to seek solutions and to impact the broader community of practice (Loughran, 2007). Similarly, Clandinin and Connelly (2004) maintain that self-study is not restricted to simply learning about the self. They state that such narrative scholarship is a means to learning about the context in which we are engaged. In doing so, we can construct ways to improve it. Ultimately, doing self-study research demands quality and accountability as practitioner-researchers produce and articulate knowledge for advancing practice in their respective communities (Lunenberg & Samaras, 2011).

The Interpretive Process

In their guidelines for self-study Bullough and Pinnegar (2001) caution that while “the label ‘self-study’ makes evident the centrality of the researcher self in the article and in the methodology, the standards of scholarship of the embraced tradition still must be met” (p. 15). In the present study, we employed an interpretive design (Denzin, 1989) using self-study (Bullough & Pinnegar, 2001) to examine the researcher’s perceptions of the research process while conducting motor skill assessments on children with ASD.

We conducted our research in a small city in the southeastern United States. The open-ended, semi-structured interviews utilized in this study were conducted with me as the participant-researcher and my co-author as the interviewer-researcher.

Participant

The participant-researcher. At the time of data collection, I was a doctoral candidate in the motor behavior program. I had taken classes in special education and applied behavioral analysis procedures for children with ASD. As a result, I viewed behaviors exhibited by children with ASD under the antecedent-behavior-consequence model, and I also believed visual supports served as a very powerful communicative aide for children with ASD. During this self-study, I was conducting dissertation research examining the effects of visual supports on the performance of the TGMD-2 (Ulrich, 2000).

A trusting relationship already existed between my co-author and me. She was my professor in a graduate class and a member of my dissertation committee. We were both affiliated with the same academic department at the university. Our relationship enabled me to feel comfortable sharing my experiences and perspectives in a supportive and nonthreatening environment.

The context of the original dissertation research. The children and their caregivers gave consent to participate in my quantitative dissertation research study examining the effectiveness of three different visual supports on children’s performance of the TGMD-2 (Breslin & Rudisill, 2011). However, they were not actual participants in this interpretive study. I was and thus all quotes in this paper are mine. That being said, the children about whom I talk in the interviews are the 22 children who participated in the dissertation research (with identities protected through the use of pseudonyms).

The Interviewer

My co-author served as the instrument of the research, for she conducted the interviews. She was the professor of the graduate adapted physical education course that I took to fulfil degree

requirements. She was known as the departmental “expert” in disability issues. She had been working with children with ASD and sitting in on classes taught by autism experts in the special education department. There was no “getting around” the hierarchical relationship between us as professor and student, but she did all she could to level the nature of it. Despite her general knowledge, my co-author claimed no expertise in ASD, and in fact deferred to me as more of an expert in the specific area of ASD. She had administered the TGMD-2, the assessment used for the quantitative dissertation study, to children with and without disabilities. While she was familiar with the TGMD-2, she had not used it as much or in as many contexts as I had. Thus, I was more of an expert than my co-author in ASD and in the TGMD-2, and the otherwise hierarchical nature of our relationship was somewhat balanced.

However, my co-author was also a member of my dissertation committee. We agreed to do the interview process separate from the dissertation itself, and thus it would have no bearing on the quality of my dissertation research, nor on whether or not I passed my defense. In fact, the current manuscript was written after I graduated. Another way she tried to ameliorate the power differential between us as student and dissertation committee member was by inviting me into her home to conduct the interviews. The small audio recorder she used was fairly unobtrusive, and I did not give any attention to it once it was turned on.

Capturing the Data

My co-author and I met once a week for open-ended, semi-structured interviews to discuss dissertation data collection and examine my perceptions of working with children with ASD and my interpretations of the children’s preferences toward the three different visual support protocols used in the TGMD-2 assessments. Interviews were conducted three times over the course of a month, lasting approximately seventy-five to ninety minutes each, and each interview was recorded using a digital voice recorder. A student worker transcribed the interview data. Both authors were accessible to the student transcriber, who consulted us with questions as needed. Both of us retained transcripts of the interviews, and I had full access to read them and member check. When the transcriber or my co-author encountered something that they did not understand, I was asked to clarify my statement. In addition to the interviews, my co-author and I were in frequent contact with one another, including chance encounters in our department at the university. These chance encounters and journal entries documenting anything unusual or interesting that happened during each assessment provided additional information as needed. The journal entries were made by a research assistant after each assessment while the child was being returned to the classroom, and were reviewed each day to ensure nothing had been omitted.

Because we employed self-study as framework, the interview questions focused on me and my experiences during the process of collecting my dissertation data; that is, my experiences performing motor skill assessments of children with ASD. Loughran and Northfield (1998) note that because self-study is a participant study of his or her own experience, it has raised questions regarding its veracity as research. They go on to say:

....we contend that it is working with an important “other” that matters. Otherwise, self-study may simply be seen as rationalizing or justifying one’s actions or frames of reference. ...The experience of an individual is the focus of the study but the individual

need not be, and should not be, the sole participant in the process. (Loughran & Northfield, 1998, p. 8)

Thus, my co-author took the lead on bracketing the data.

Bracketing the Data

The data were first taken out of the context of the interview and broken into units of meaning and separated within the transcripts (Denzin, 1989; Lincoln & Guba, 1985). Then my co-author and a graduate assistant read the bracketed data, sorting them into tentative categories as we read. They re-read and re-sorted and came up with categorical themes. In the meantime I did a similar analysis and found six categories, all very similar to the ones found by the graduate assistant and my co-author. Independently we continued searching for repeated data, and coding data into categories that were evidence-based (Creswell, 2007). The last step of the process was done repeatedly until we agreed on finalized categories.

Construction

Three major themes emerged, with subthemes. The first major theme was Participant Emotions – enjoyment, frustration, and empathy. The second theme was Research Protocols from the Dissertation – traditional-full sentence, pithy language-picture schedule, and pithy language-task cards. The third major theme was Perceptions of Children’s Behavior – stereotypical movements, sensory issues, and distractions.

Participant’s Emotions

I had previous experience working with children with ASD as the supervisor of a physically active motor skills program at a preschool for children with ASD. I was excited for the opportunity to work with children with ASD on a daily basis during an extended school year program lasting three hours in duration each morning for one month. During this program, each student had an individualized education plan targeting social, communication, and academic goals. Participation in the research project examining the influence of visual supports on children’s performance on the TGMD-2 was optional; however, it was the children’s only opportunity for physical play during the educational program. I recruited stellar research assistants to help conduct a study that I believed would have positive effects for children with ASD. In noting my perspectives conducting this research, my emotions included enjoyment of the research process, but I also experienced frustration and sympathy for the children’s struggles.

Enjoyment. I was very grateful for the experience. As a researcher I understood the unique opportunity the extended school year programming represented. When asked how I felt about it, I said “... Yeah, it is such a cool research opportunity. Forty two kids with Autism ... every day for a month, awesome.” The children intrigued and challenged me, and I loved working with the children. I was excited to be a part of a group of teachers working in the extended school year program and I enjoyed a community of practice with them (Lave & Wenger, 1991; Lieberman, 2000). The director of the program was an associate professor of special education and member of my dissertation committee. The assistant directors and teachers were graduate students in special education with whom I had taken classes. These relationships created a supportive, collaborative environment in which I could conduct the assessments for my dissertation data

collection. The teachers in the program were excited about the research project and very cognizant of how their behavior might impact the research being conducted.

When I was in the process of assessing a child's motor skills, the teachers were careful to stay out of the assessment area. They did not want to impact the children's behavior. Even Mr. Dennis, the custodian where this summer program was being held, understood the importance of his staying out of sight for these children. He did his best to stay out of the way, but his office was adjacent to the targets on the wall that right handed children would use, and he would sometimes need to go into his office. Both the teachers and the custodian understood from their experiences working with children with ASD that a child could be distracted by seeing their teacher or a familiar adult in a new space. The collaborative and cooperative nature of the staff and faculty at the site helped me feel supported and excited to work each day.

Frustration. Although I was grateful and excited for this opportunity, I also had moments of frustration with the dissertation process. Part of the frustration came from the behaviors of the children I was assessing for my data collection.

Glory was a three year old girl who had been diagnosed with ASD seven months prior to data collection and had attended the preschool where I taught the motor skills program. She had a beautiful personality, and would ham it up to get attention from the teachers and other students. She would get tired easily, and often when she became tired she would begin to cry. Because of our prior relationship, when I took her out of the classroom to assess her motor skills for the dissertation study she would excitedly run out of the classroom. Yet each day, approximately 17 minutes into the assessment, she would cross her arms and refuse to make eye contact with me:

“Glory, a girl who is adorable, was very excited. She would cry when I would go into her classroom to get another child, not her - because she wanted to play. Real sweet, , but it was the day that I had to speak to her in complete sentences, and she got so defiant by the end of the assessment that she threw herself on the floor and refused to look at me.”

It kind of hurt my feelings because she [Glory] has never been defiant before. That day was the first day that something like that had really happened. I wasn't quite ready for that feeling and I was upset about it.

Unfortunately, Lauren, a very challenging nine year old immediately followed Glory for her assessments.

“... after Glory left, we had this little girl named Lauren and I think she was heavily medicated. It was real depressing, she got an activity schedule that day, which I felt was the best condition. And she totally didn't respond to anything.”

Thus, I found myself dealing with crying or complete disinterest from my research participants. In the quantitative study examining the differences in performance when picture task cards and picture activity schedules were or were not used, I wanted to see distinct changes in the children's behavior on the quantitative assessment criteria. I was frustrated and afraid that the

girls' behavioral responses would not enable me to see differences on the quantitative criteria. When we were finally done that day, Dr. Elizabeth [my advisor] had to remind me that it was going to be okay, because I was really cranky.

Sympathy. Although I cannot truly understand what it means to have ASD, I can be sympathetic to the frustration and pain a child with ASD may experience when having difficulty communicating with others. The feeling of sympathy I had for the children with ASD is best illustrated by my reference to an eight and a half year old boy named Taylor: "The thing is...there are kids with autism that strike me as happy kids, and then there are tormented kids with autism. He is definitely a tormented kid with autism."

I met Taylor earlier in the summer at a two day long respite care camp for families of children with ASD. I spent a day as Taylor's counselor, and I came to realize that he whimpered and cried often or requested his mother and father using a whiny voice. While I worked with him to assess his motor skills later that summer, he seemed very lethargic and would drool on himself. When he would speak during these assessments, it was often to cry or to ask for his mother. One day, his behavior was markedly different during the assessments, and he bit himself repeatedly while crying constantly. Taylor did not seem happy, but rather constantly battling his emotions and the environment. It was hard for his despondency not to affect my own emotions. Watching him bite himself, and cry out repeatedly, as if in pain, stirred a sense of compassion in me. No child should ever feel that upset! It was rare for me to see children upset while given the opportunity to engage in movement settings. My heart really broke for him as he seemed unable to express his feelings in a way that was clearly understood by others. I wanted nothing more than to understand his pain, and try to remove it.

Research Protocols

There were 3 research protocols used in the dissertation study. These protocols were methods in which the students were assessed as to their motor skills. The three protocols were traditional-full sentences, picture schedule-pithy language, and task cards-pithy language.

Traditional-full sentences. My prior experiences teaching children with ASD caused me to feel both dread and delight when looking ahead at my dissertation schedule. I delighted in the opportunity to assess the children using pithy language and visual supports, but I dreaded any day where I would be using complete sentences. From my experiences in the classroom, using complete, conversational sentences was a very unnerving process for the children. During one of the interviews, I mentioned the upcoming schedule for data collection to my co-author: "Tomorrow I am finishing up with C.D.; he is getting his last condition tomorrow. I hate ending on this but I have to talk to him in conversational sentences." C.D. is ordinarily a pleasure to work with, joyful and compliant, but I hated having to end my experience with him with what may be a negative experience for him.

A similar experience happened with Zach. Zach was a very happy nine year old boy with pervasive development disorder, not otherwise specified (PDD-NOS). He usually was very compliant and would perform the skills upon request. During the day that he received the traditional protocol he seemed distracted and less interested in the assessment.

“I talked to Zach in complete sentences. He is usually pretty interested in it. He was not interested in the assessment and didn’t really listen to anything I was saying.”

Greg’s behavior provides another example of the effect that using conversational speech can have on a child with ASD. Greg was an almost nine year old boy diagnosed with both autistic disorder and PDD-NOS. He had limited functional verbal communication skills, although he could greet people and count in several languages. Greg’s limited communication skills made him challenging to work with regardless of conditions, but he seemed to become even more challenging on the traditional protocol day. On previous days, he seemed to be engaged with the equipment being used in the assessment. On the traditional protocol day, when he engaged in a light filtering behavior, he was no longer engaging with the assessment equipment.

“After Jacob yesterday, we assessed Greg using complete sentences, and he light filtered with his hands... he kept doing it during the assessment. He did it a little bit today, but he did it a lot yesterday. He was really off task for most of the assessment. He kept not following directions, but complete sentences for an individual with severe autism...”

I can see myself shaking my head as I trailed off the last sentence. Remembering how the children responded to the conversation settings frustrates me. Although I had a professional obligation to administer assessments utilizing the different protocols in my dissertation, I was exhausted by the personal and moral burdens this obligation caused. It was difficult for me to do something with the children in which I did not believe.

Pithy language-picture schedule. Using the picture activity schedule, in which the pictures were arranged vertically and the verbal instructions were limited to short, two word commands, I saw behaviors indicating a preference from the children.

Peter was a very verbal four and a half year old boy diagnosed with autism. The summer educational program was his first time in an intensive educational setting designed for children with ASD. He was assessed during the second week of the program, and therefore had only been exposed to a picture activity schedule for six days prior to the start of his assessments. In spite of this, I believe he immediately understood the meaning conveyed by the “schedule” (or “squares”) and expressed his desire to have them when working with me.

“Peter worked his way through the schedule and when he got to the end he was all done, and he said ‘can I have more squares please?’ He wanted more task cards! Another time he was getting the traditional protocol when he immediately asked ‘where is the black schedule?’ He really wanted a schedule...”

I felt his inquiries regarding the location of these objects indicated that his anxiety was assuaged when provided with the picture activity schedule or picture task cards.

Another student, Sally, a ten and a half year old girl with autism, indicated her preference by refraining from a contextually inappropriate behavior. Sally was self-abusive in the traditional protocol, and would frequently bite herself with such force that she would draw blood and

develop scars on her hands. Her classroom teacher informed me that this behavior seemed to manifest when she was anxious, as it would happen more often when other students cried or expressed frustration verbally. To promote continuity, her teachers requested that if I believed Sally was about to bite her hands during the assessments, I should encourage Sally to “be sweet to her hands” and kiss them instead. Sally “kissed her hands” at least once on every day that I worked with her and bit herself several times during the traditional protocol. However, on the picture activity schedule day, she never bit herself. I recalled, “She [Sally] came in on Tuesday for the picture activity schedule condition and she’s not bitten herself at all during the assessment.” Perhaps the picture activity schedule gave her the information needed to understand the structure of the assessment environment.

Cara was an extremely quiet three and a half year old girl with autistic disorder. Often, she would get upset when it was time to transition from one activity to the next (for instance to leave the classroom to come complete assessments), but she calmed down quickly once the new activity started. In spite of this, Cara calmed down immediately after seeing the picture activity schedule and we had previously only worked together once. On all other days we worked together, pictures activity schedules were not utilized, and Cara remained upset until the second trial of the first skill on the assessment. “Cara came in next, and she is a real sweet little girl, and she did real well. She got the picture activity schedule, and she was totally on task, and she got real excited to play.”

Kelly was by far the most skilled child that participated in my dissertation. Not only did she know all of her skills without a demonstration, but she performed them well. As a nine year old girl with Asperger’s syndrome, Kelly was extremely articulate and excited to play.

Recalling my experience with Kelly, I said:

“Kelly kept looking at me. She would pull the picture off the schedule I would hold my hand out so she could give it to me, and she goes “I’ll hold it so you can show me what to do!” I know! She would hold it for me while I showed her what she was supposed to do. Even though she was like, ‘I don’t need you to show it to me, I know what to do!’”

It was a pleasure to assess her, as she was so easygoing and confident, but her comments and behaviors made it clear to me that she did not need the level of visual detail that the picture activity schedule provided.

Pithy language-task cards. Amber was an intriguing case. She was extremely difficult during traditional protocol day, but I believed her behavior changed dramatically when I used the other protocols:

“Amber’s first day of assessment was kind of a frustrating day [with regard to the other participants’ behaviors, too]. She was not compliant; she ran away, she threw equipment under and over the curtain.... But that [behavior] stopped because she was getting task cards that day. Amber stopped crying and emoting sadness on the day that she was getting task cards.”

Amber had been noncompliant during our other meetings. She would cry, run away from assessments, and spit on my research assistant. Additionally, when Amber was spoken to using complete sentences on the traditional protocol day, she pulled her pants down and exposed herself. However, on the day that she received the task card protocol in which verbal language was minimized and a picture of the task at hand was displayed, Amber was much more compliant. Although she did throw equipment over and under the curtain used to divide the assessment space into a manageable size and attempted to run away from the area once, she smiled while engaging in these behaviors indicating playfulness. Furthermore, she was not crying or exhibiting sadness in her facial expressions. Even though she was still noncompliant for parts of the assessment, I saw this as a comparative improvement. I felt that she preferred this pithy language approach using picture task cards to the other approaches.

Sally's self-stimulatory behavior of biting her hands was mentioned earlier, but it is interesting that she did not bite herself and seemed more willing to engage when provided the picture task cards. It is almost as if by studying the cards, she became more comfortable with the assessment environment. This may have lessened her anxiety, and in turn made her not feel compelled to engage in self-injurious behaviors. While discussing the Sally's response to the picture task card day, I stated "Sally also seemed really interested in the cards; we got to the next day which was also a picture card day and she didn't bite herself again and she stayed on task."

While C.D.'s prior school experience was characterized by difficult behavior, he had never seemed so excited and interested in a task as he did during the assessments on the picture activity schedule day. His occupational therapist (OT), who had known him for years, had never seen him engage in an activity as long as the 12 minutes she watched C.D.'s assessment. I reported to my co-author, "On Wednesday, the occupational therapist was observing C.D. during the assessment, and she commented to Dr. Elizabeth that she (the OT) could not believe how on task he was. She said she had never seen him like that."

Some of the more verbal children commented on the absence of a picture schedule. Every child was exposed to an acclimation day in which the picture activity schedule was displayed on the wall, and the picture task cards were worn on my wrist. This was done to ensure that no child would be surprised by the existence of these objects on an assessment day. That being said, I believed that the children noticed the presence (and in turn, the absence) of the pictures on other days.

"But it has been really entertaining because Matt, when he came in on Thursday, the first thing he said was "where is the schedule?" That day was a picture task card day so I had the pictures on my wrists on a ring. But he immediately asked where the schedule was."

Matt wanted to know where the schedule was after only seeing the schedule on the wall during the acclimation day. On the final day of data collection with him, he received no pictures of any form and conversational sentences. At the beginning of the assessment on this traditional protocol day, he asked repeatedly where the schedule was and engaged in a spinning behavior throughout the assessment. Matt's inquiries as to the location of the picture activity schedule and his spinning behavior led me to believe he preferred the picture activity schedule to other

assessment protocols. I reported a similar experience with another child, Robert, who was also very concerned with the presence of the picture activity schedule.

“Robert did the same thing today [asking where the schedule was] when he came in. Then he saw them on my wrists, and he said ‘oh you don’t have them on a schedule, so I can see it. You have it right there. ‘It is going to be interesting on Monday to see what Robert says when he has no picture task cards to look at.’”

Robert talked incessantly during all three assessments and his acclimation day. Sometimes it was about the assessment, but usually it was about how a vacuum cleaner worked. When he entered the assessment space for his second day of assessments, he asked where the schedule was, but noticed that I was wearing the picture task cards on my wrist. He indicated that he understood that’s where the “schedule” was, even though it was not visually displayed for him to see all the assessment items at a glance. On his final assessment (the Monday referenced in the quote above), he received the traditional protocol. In the field notes recorded at the conclusion of each day of assessments, a research assistant recorded that Robert asked repeatedly where the schedule was during the assessment, and that he “seemed lost without the schedule”.

Perceptions of Children’s Behaviors

Stereotypical movements. Some children with ASD engage in stereotyped movements or repetitive and restrictive behaviors containing sensory stimulation but do not serve a functional purpose (Leekam, Prior, & Uljarevic, 2011). Jared was a five year old boy with autistic disorder who used an alternating double skip pattern to move through the hallways in the classroom. Upon entry into a new room, Jared would spin in a circle. In between trials Jared would again spin in a circle. While he was doing this he would look up at the ceiling. Jared had very limited ability to speak, but he was able to communicate using gestures and the Picture Exchange Communication System (Frost & Bondy, 2002).

One of Jared’s favorite things to do was to engage in a jumping activity. “He [Jared] spins, and he likes to jump.” Jared would jump and an adult supporting him at his waist would help pull him off the ground so that he “jumped” higher than he could on his own. While conducting the TGMD-2 assessments Jared would sometimes position my hands around his waist and assume his knee bend position. I would usually oblige this request because he would refuse to participate in the intended activity without first “jumping”. Upon completion of a “jump” Jared would then engage in the intended activity.

With some children the stereotypical behaviors were harmful to the child, the other children, or the researchers. For example, some children were “biters”, either of their own hands or others’ hands. Self-injurious behaviors are not uncommon in individuals with ASD (Minshawi, 2008), nor was it uncommon among the children participating in my dissertation research. Taylor would sometimes cry and often be despondent. I had prior experience with him, and during that time I came to realize that he expressed his displeasure in the events around him by biting others or himself. Thinking about my experiences with Taylor during the dissertation research, I said:

“Today is the first day that he [Taylor] bit me, which is pretty good because it is the third day together. He has bitten himself three times yesterday, and he bit himself once the day before. He is always biting himself, but he doesn’t break the skin.”

It was painful to see Taylor bite himself, but you could also see his face relax after he would bite himself. As a student of behaviorism, I took Taylor’s visible relaxation to mean that the biting behavior on some level was positively reinforced. That feeling of “relaxation” must have been the reason for that behavior. I knew a causal relationship between self-injurious behaviors and anxiety has been suggested by psychologists and others working with children with ASD (Guess & Carr, 1999).

Sensory issues. A common symptom amongst individuals with ASD is difficulties with perceptual and sensory processing (Pfeiffer et al., 2011). An individual with ASD might exhibit a heightened or reduced response to sensory stimulation. In this study, many of the children with ASD exhibited issues related to sensory processing. Many of the children participating in the dissertation study were found to either seek additional sensory input or seek to restrict sensory input while having their motor skills assessed. For example, I noticed:

“...he [Peter] would drag his feet along the carpet, as if he wanted extra sensory. When he was running he would drag his feet, and he was barefoot the whole time we did assessment because he wore CrocsTM all week.”

Peter, a four year old boy, arrived to the summer program each day wearing CrocsTM sandals. As such, when the child entered the assessment space, he removed his CrocsTM and set them outside of the assessment area. While running, he would take the first few running steps with proper running form, but then he would drag his feet along the floor for the remainder of the trial. This behavior persisted on all three days of data collection, even following an additional demonstration. As this behavior perplexed me, I allowed Peter to return to his classroom barefoot one day, because I wanted to see if he would drag his feet while walking down the hallway. He dragged his feet while barefoot, but when shod, he did not drag his feet. This observation led me to believe it was the sensory stimulation that Peter sought while locomoting from one place to another without shoes.

Distractions. When working with individuals with ASD, it can be very challenging to keep them on task and engaged in contextually appropriate activities (Schneider & Goldstein, 2010). Teachers are encouraged to minimize extraneous information and provide calm, focused workspace by arranging the physical environment to maximize student learning and participation (Fittipaldi-Wert & Mowling, 2009). In spite of the teachers’ best intentions to do so, they cannot always control the environment.

To minimize distractions during the assessments my research assistants and I wore plain, undecorated neutral colored outfits. I created a very large white curtain to divide the large multipurpose room. This curtain extended across the entire room, from wall to wall, allowing only a six foot opening to access the space where the assessments were conducted. I covered the windows looking outside. On the walls just outside of the assessment space, signs were posted stating “Quiet please-Assessments in Progress”. Within the space, nothing was displayed on the

walls except a target for children to aim at while performing the assessments. In spite of these efforts, I was not able to control for everything that could be distracting.

One of the biggest distractions was the sound of children crying. Sometimes a child would become so upset that he or she would disrupt other students in the classroom by having a tantrum involving loud crying or yelling. When this happened, the upset child would exit the classroom with an assistant teacher and be provided an opportunity to calm down in the hallway. Thus, some of the children could hear this while they were being assessed and made facial expressions indicating sympathy or empathy for the upset child. I believed Amber, a five year old girl with autism, found the crying to be very distracting.

“Amber she would hear other children cry and she would shut down. You could see that she’d be upset about other people. When that would happen I would hug her and tell her it would be okay because it is okay to be sad when other people are sad too. Because it was obvious that her shutting down was in response to other people crying. She would look around to see if she could locate the source of the crying.”

When Amber could not locate the source of the crying she seemed more withdrawn and less cooperative. It was almost as if she was retreating into her own mind to escape from the source of suffering, even though she was not crying. Recalling that other children were influenced by physical objects in the environment, such as bugs, data collection equipment, or lighting, I said:

“Jared does NOT like the sky light. We assess him now in the dark. We turn the lights off for him, because one day he came in covering his eyes and ears. ...Because there were bugs in the lights, so we just flipped the lights off. That made it a little better.”

Jared directed his attention to the overhead lights in the ceiling rather than the relevant stimuli in the environment. When the lights were shut off Jared was able to direct his attention more to the research. He was distracted by the lights, and that distraction interfered with his ability to perform.

Some of the trials used tennis balls, and one boy, Greg seemed to be enchanted with the fuzz on the tennis ball. I remembered “...he was playing with it, walking around holding the ball by the fuzz. And he is running away from me, and playing with the tennis ball fuzz.” To me a tennis ball is a boring, everyday item, but Greg seemed enthralled. Greg played with the fuzz of the tennis ball for three or four minutes between each trial, which was very frustrating. Therefore, we tried a different ball, the same size and color, but it was a soft, rubber ball. Unfortunately, I do not believe this solved the problem, as I said:

“Now he was fascinated by the squishy aspect. So again, three to four minutes between trials, I am standing there just silently praying, ‘Please, let Greg throw the ball! Please let him throw the ball so we can move on.’”

Thus, changing balls did not help the situation. Greg was distracted by whatever equipment we tried. I was glad that he was interested in the equipment used to complete the assessment, since other participants were interested in items in the environment completely irrelevant to

completing the task including the video camera used to record the children's behaviors. Thinking about those types of distractions, I said "Then Jacob was really distracted by the camera...he was right up in her [the camera operator's] face... He would push it and he would look for people in the little view finder. He was fascinated by it."

Lindsay, the research assistant responsible for the camera did not speak to the children or engage with the children during the dissertation data collection. She pulled her hair back and wore plain navy clothing and simple make up each day. As a result, most children did not pay any attention to her or the tripod she stood behind. However, Jacob was fascinated with the camera. He would stand directly at Lindsay's toes and look up at her until she would step away from the camera. Then he would play with the camera, pushing buttons and looking for movement on the camera screen. Although this behavior was contextually inappropriate, it was a welcome change to the tantrums he often threw when he was asked to perform skills on the assessments.

My experiences may not be the same others have had working with children with ASD, but there are some similarities. Celebrating the little milestones and feeling frustration and empathy for the children when observing some of the difficulties in communication and social interaction were part of my experiences, and they are universal experiences for special educators working with children with ASD. That being said, there is variability in how these experiences may be interpreted. As motor development experts, we acknowledge the paradox of universality and variability in every human's developmental trajectory (Haywood & Getchell, 2008). Observing the individual differences in my perceptions of the children's behavior was part of the project, while sharing my experiences contributes to the universality of the experience working with children with ASD.

Contextualization

We present this research as a self-study (Bullough & Pinnegar, 2001); an interpretation of my experience through my voice as informant, researcher, and writer. Self-studies are typically conducted by individuals, pairs of collaborators, or small teams of researchers (Gallagher et al, 2011). This paper tells the story of my emotionally charged experience conducting quantitative research exploring motor skill assessments with children with ASD. My co-author served as co-researcher. She facilitated the interpretation through asking questions and engaging in the research process. We did not dwell on the fact that I was doing a dissertation, which is another body of literature in its own right. We focused on the process of working with a group of children that many consider to be very challenging. Throughout this process, my co-author and I continuously communicated to ensure collaboration. In this collaboration, we co-constructed a story of my experiences during my dissertation research process. We captured the data, constructed the themes, and conceptualized the story. Our results yielded three major themes: Participant Emotions; Protocols from the Dissertation; and Perceptions of Children's Behavior. Through the lens of self-study, we further contextualize the findings by exploring how visual supports and communication, and communities of practice impacted my experience.

The self-study presented here allows the findings of my "private" research endeavor become a resource for teachers and other clinicians working with individuals with ASD. Likewise, as this work is made public it also facilitates greater understanding and awareness, and thus solution, to

those who feel isolated in their “private trial(s)” (Bullough & Pinnegar, 2001, p. 15). Such is the cyclical nature of self-study.

Similarly, our findings are interrelated on many levels. For example, the “Participant Emotions” rose and fell as the “Children’s Behavior” changed. The “Research Protocol” impacted the “Children’s Behavior.” Just anticipating the child’s reaction to the traditional protocol often filled me with sadness at having to use it, thus evoking compassion and other emotions. Because of such interrelatedness, we will discuss the findings in the context of visual supports and communication, and communities of practice.

Visual Supports and Communication

The use of visual supports is firmly endorsed by those who work with individuals with ASD (Tissot & Evans, 2003), and this study resoundingly upholds the notion. I learned from my prior research that children with ASD have preferences, and that my experiences may provide valuable insights into preferences and behavioral tendencies of the children. Communication and language is fundamental to our humanity; our environment revolves around speech production. I remarked to my co-author regarding the traditional protocol: “I just feel really guilty to be the first adult to speak to him in a language he does not understand.” I liken it to my experience traveling in non-English speaking countries. The difference between being an individual with ASD and me taking that trip is that I know that I will be home again with people who speak my language. Looking at our communicative differences that way, it is difficult for me to imagine being anything but compassionate. Throughout the process, I would communicate with a child using a picture and the child would perform the task. If I communicated with the child without a picture, the child would exhibit a contextually inappropriate behavior (e.g., spitting, crying, and running away). For example, Amber’s noncompliance escalated to her dropping her pants when presented with the traditional protocol. Sally’s willingness to refrain from biting her hand exemplified her preference for visual supports and her frustration with the traditional protocol.

Knowing what I knew about the importance of visual supports as a communication device, I felt frustrated when I was unable to use them due to the dissertation research design. My frustration was due to the children engaging in contextually inappropriate behavior. Tissot and Evans (2003) state that communication problems may be an underlying reason for disruptive behavior in children with ASD. As communication can be both verbal and nonverbal, lack of speech does not necessarily mean that a child with ASD is not able to communicate. As the dissertation design required intermittent use of conversational speech and visual supports, I often experienced frustration, and further sympathized with the children as they struggled to understand my instructions.

Communities of Practice

The data collection site was an extended school year program for children with ASD and behavior disorders, as well as a training opportunity for graduate students in special education. As a result, after the kids left school each day, a brief meeting was held for all members of the staff to discuss what worked and what did not. This “community of practice” helped me to cope with my frustration, by providing a supportive group of listeners and learners interested to know how things were proceeding in each other’s experiences with the children with ASD.

Lave and Wenger (1991) describe a community of practice as a group of people with a common passion, and that often find themselves coming together to learn as they engage in the matter of interest. Such coming together may or may not be intentional, and is often incidental, yet the social aspect of it makes the learning more meaningful. In the present case I – a graduate student in kinesiology – found myself incidentally engaged in a community of practice with graduate students in special education due to our shared interest in learning about and improving the lives of children with ASD. We all had a responsibility at the program, and as we encountered one another on a daily basis I formed a tacit understanding of the value of having like-minded people with whom to interact. This understanding became more evident through the process of writing this self-study, as I came to realize the importance of my empathetic peers.

Many of us worked with the same children, and we would share the same small victories (“Jacob FINALLY used the toilet by himself!” or “Beckett yelled ‘I NEED A TIMEOUT’ and walked out of the classroom before beginning his temper tantrum”). We all worked for the same goal, and that was to help children with autism. They were excited about the opportunity of assisting in important “research” as many of them failed to recognize that the data they collected each day regarding the individualized education plans was also research. They supported me, and I was excited to help them.

A community of practice is an important support mechanism for a practitioner working with children with ASD. The community of practice provides a safe place to celebrate the small victories, cry over the major defeats, and laugh over the unusual interactions one may have while working with children with ASD. The emotions I experienced throughout the dissertation data collection process were varied and extreme, often fluctuating widely throughout the day. As a result other practitioners working with children with ASD should prepare for these emotions by having a series of healthy coping strategies in place. Engaging in a community of practice is one healthy coping strategy recommended to special educators in particular (Elledge Cook & Leffingwell, 1982). Other coping strategies include self-care activities such as and taking good physical care through adequate medical screenings, adequate diet and exercise, and adequate rest (Merluzzi, Philip, Vachon, & Heitzmann, 2011).

Conclusion

The importance and usefulness of visual supports is highly accepted and is not a new notion. However, the impact on the individual communicating with the person with ASD has not been studied. An act of compliance that replaces a tantrum may go a long way in quelling burnout in teachers, parents, and other caregivers. As burnout is a common occurrence amongst individuals working with special needs populations, future research should study the role of visual supports on the stress levels of the practitioner working with children with ASD. Until that research is undertaken, it is important for practitioners to recognize the range of emotions as a normal response to the experience of working with children with ASD. Additionally, it is important for practitioners to cope with their stress in healthy ways by finding a community of practice with whom to discuss these emotions, and to engage in a routine of self-care.

References

- Breslin, C.M., & Rudisill, M.E. (2011). The effect of visual supports on performance of the TGMD-2 for children with autism spectrum disorder. *Adapted Physical Activity Quarterly*, 28, 342-353.
- Bullock, S., M., & Ritter, J., K. (2011). Exploring the transition into academia through collaborative self-study. *Studying Teacher Education: A Journal of Self-Study of Teacher Education Practices*, 7(2), 171-181. doi: 10.1080/17425964.2011.591173
- Bullough, R. V., & Pinnegar, S. (2001). Guidelines for quality in autobiographical forms of self-study research. *Educational Researcher*, 30, 13-21. doi: 10.3102/0013189X030003013
- Clandinin, D. J., & Connelly, F.M. (2004). Knowledge, narrative, and self-study. In J. J. Loughran, M. L. Hamilton, V. K. LaBoskey, & T. Russell (Eds.), *International handbook of self-study of teaching and teacher education practices* (pp. 575–600). Dordrecht, The Netherlands: Kluwer.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks, CA: Sage Publications.
- Denzin, N. K. (1989). *Interpretive interactionism*. Newbury Park, NJ: Sage Publications.
- Elledge Cook, J.M. & Leffingwell, R.J. (1982). Stressors and remediation techniques for special educators. *Exceptional Children*, 49, 54-59
- Fittipaldi-Wert, J., & Mowling, C.M. (2009). Using visual supports for children with autism in physical education. *Journal of Physical Education, Recreation, and Dance*, 80(2), 39-43.
- Frost, L., & Bondy, A. (2002). *The Picture Exchange Communication System: Training Manual (Second Edition)*. Newark, DE: Pyramid Educational Products.
- Gallagher, T., Griffin, S., Parker, D. C., Kitchen, J., & Figg, C. (2011). Establishing and sustaining teacher educator professional development in a self-study community of practice: Pre-tenure teacher educators developing professionally. *Teaching and Teacher Education*, 27, 880-890. doi:10.1016/j.tate.2011.02.003
- Guess, D., & Carr, E. (1991). Emergence and maintenance of stereotypy and self-injury. *American Journal of Mental Retardation*, 96, 299–319.
- Lave, J., & Wenger, E.(1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press. ISBN 0-521-42374-0.
- Leekam, S. R., Prior, M. R., & Uljarevic, M. (2011). Restricted and repetitive behaviors in autism spectrum disorders: A review of research in the last decade. *Psychological Bulletin*, 137(4), 562-593. doi: 10.1037/a0023341
- Lieberman, A. (2000). Networks as learning communities: Shaping the future of teacher development. *Journal of Teacher Education*, 51, 221-227. doi: 10.1177/0022487100051003010
- Loprinzi, P.D., & Cardinal, B.J. (2011). Measuring children's physical activity and sedentary behaviors. *Journal of Exercise Science & Fitness*, 9, 15-23. doi: 10.1016/S1728-869X(11)60002-6.
- Loughran, J. (2007). Researching teacher education practices: Responding to the challenges, demands, and expectations of self-study. *Journal of Teacher Education*, 58, 12-20. doi: 10.1177/0022487106296217
- Loughran, J., & Northfield, J. (1998). A framework for the development of self-study practice. In M. L. Hamilton (Ed.) *Reconceptualizing Teaching Practice: Self-Study in Teacher Education*. Bristol, PA: USA Falmer Press.

- Louie, B., Drevdahl, D., Purdy, J., & Stackman, R. (2003). Advancing the scholarship of teaching through collaborative self-study. *Journal of Higher Education*, 74(2), 150-171.
- Lunenberg, M., & Samaras, A. P. (2011). Developing a pedagogy for teaching self-study research: Lessons learned across the Atlantic. *Teaching and Teacher Education*, 27(5), 841-850.
- Merluzzi, T.V., Philip, E.J., Vachon, D.O., & Heitzmann, C.A. (2011). Assessment of self-efficacy for caregiving: The critical role of self-care in caregiver stress and burden. *Palliative and Supportive Care*, 9, 15–24. doi:10.1017/S1478951510000507
- Minshawi, N.F. (2008). Behavioral assessment and treatment of self-injurious behavior in autism. *Child and Adolescent Psychiatric Clinics of North America*, 17, 875-886. doi:10.1016/j.chc.2008.06.012
- Pfeiffer, B., Koenig, K., Sheppard, M., Henderson, L., & Kinnealey, M. (2011). The effectiveness of sensory integration interventions in children with autism spectrum disorders: A pilot study. *American Journal of Occupational Therapy*, 65, 76-85.
- Schneider, N., & Goldstein, H. (2010). Using social stories and visual schedules to improve socially appropriate behaviors in children with autism. *Journal of Positive Behavior Interventions*, 12, 149–160.
- Tissot, C., & Evans, R. (2003). Visual teaching strategies for children with autism. *Early Child Development and Care*, 173(4), 425–433.
- Ulrich, D. (2000). *Test of Gross Motor Development (2nd ed.) Examiner's Manual*. Austin, TX: Pro-Ed.
- Zeichner, K., (2007). Accumulating knowledge across self-studies in teacher education. *Journal of Teacher Education*, 58, 36-46. doi: 10.1177/0022487106296219

About the Authors

Casey M. Breslin is an Assistant Professor in the Department of Kinesiology at Temple University. Her research interests explore the fundamental motor skill development, motor planning, and physical activity habits of typically developing children and children with autism spectrum disorder.

Alice M. Buchanan is an Associate Professor in the School of Kinesiology at Auburn University. Her research, teaching, and outreach are exemplified in programs that she conducts with school-age children in schools and after-school programs. Most of her work is with populations that are considered underserved. Her scholarly agenda involves service-learning and issues of social justice in movement settings; and the use of positive behavior supports in physical education.

Intentionally Left Blank

The Impact of Video Modeling on Improving Social Skills in Children with Autism

Dr Mohammed Alzyoudi
Professor AbedAlziz. Sartawi
&
Dr. Osha Almuhihi
UAEU
Al Ain-United Arab Emirates

Abstract

Children with autism often show a lack of the interactive social skills that would allow them to engage with others successfully. They therefore frequently need training to aid them in successful social interaction. Video modeling is a widely used instructional technique that has been applied to teach children with developmental disabilities such as autism. Previous research involving children with autism has shown that video modeling can be effective in teaching a variety of skills. The aim of this study is to evaluate the impact of video modeling on social skills development in children with autism. A small sample of five boys with autism was chosen to participate in this study. The boys ranged in age between five and seven years. Each child was asked to watch a video tape which presented two individuals interacting in a role play setting. One person portrays a therapist giving cues, whilst the second portrays a child acting appropriately and demonstrating correct social behaviors. The boys were then asked to complete a social task and their performance was compared against baseline assessment measures. The results of this study indicate this method is an effective method for instruction. Results are discussed and implications for further research and practice are provided.
(Key words: Autism, social skills deficits, intervention program, and video modeling)

The Impact of Video Modeling on Improving the Social Skills of Children with Autism

Autism is a developmental disorder that involves impairment in social interaction and communication development as well as patterns of repetitive behaviors and/or restricted interest (Al Zyoudi, 2008).

Children with autism show significant difficulty in building social relationships. Many children with autism resist and reject human contact and social interactions from a very early age. They show deficits such as; a lack of orientation towards a social stimulus, inadequate use of eye contact, problems initiating social interaction, difficulty interpreting both verbal and / or non-verbal social cues and inappropriate emotional response (Bellini & Akullian, 2007; Hine & Wolery, 2006; Zriqat & Amam, 2009).

Social skills are defined as observable, definable and learned behaviors. To be accepted by society an individual must behave appropriately. Appropriate and positive behaviors can be

taught in a systematic manner using specific teaching methods (Teteault & Lerman, 2010; Wilson, 2012).

Several researchers have developed social skills interventions to address the needs of children with autism (Baker, 2007; MacDonald, Sacramone, Mansfield, Wiltz & Ahern, 2009). Participants of varying age groups from preschool to adult have been studied. Social, academic and functional skills have also been evaluated (McCoy & Hermansen, 2007; Reichow & Volkmar, 2010). Similar strategies have been used to teach and remediate a variety of defined skills including; play skills (Bellini & Akullian, 2007; D'Ateno, Mangiapanello, & Taylor, 2003; MacDonald et al, 2009), self-help skills (Shipley-Benamou, Lutzker & Taubman, 2002), academic instruction skills (Kinney, Vedora, & Stromer, 2006), and communication skills (Wert & Neisworth, 2003). Researchers and practitioners have used methods including; direct teaching, social reinforcement, feedback, cooperative learning, providing cues, shaping, modeling, peer tutoring, social stories, and video modeling (Cotugno, 2009).

According to social learning theory most humans learn by watching others. This theory of learning through observation has two fundamental processes – modeling and imitating. Modeling is the demonstration of a desired behavior to an observer who can then reproduce the behavior in imitation. The use of video tape to present modeling is based on social learning theory (Al Zyoudi, 2008), and has been shown to be an effective method of teaching social skills (Baker, 2007, Bellini & Akullian, 2007; MacDonald, Sacramone, Mansfield, Wiltz & Ahern, 2009, Wang, Cui & Parrial, 2011; Shukl-Mehta, & Callahan, 2010).

In recent years, researchers and practitioners have applied video modeling in a variety of settings with participants ranging in ages from preschool to throughout adulthood. This method has been used to teach various social, academic, and functional skills to children with autism (McCoy & Hermansen, 2007; Reichow & Volkmar, 2010). Video modeling has also been used successfully to help remediate the social skills deficits of children with autism. Furthermore, this strategy was used to help establish a variety of other skills including play skills (e.g., Bellini & Akullian, 2007; D'Ateno, Mangiapanello, & Taylor, 2003; MacDonald et al, 2009), self-help skills (e.g., Shipley-Benamou, Lutzker & Taubman, 2002), academic instruction skills (e.g., Kinney, Vedora, & Stromer, 2006), and communication skills (Wert & Neisworth, 2003).

There are four styles of video modeling:

- (i) Modeling with video - where the individual watches video recordings of all sub-steps of a skill displayed by a peer, adult, or the child herself/himself and then the child repeats these behaviors (Banda, Matuszny, & Turkan, 2007).
- (ii) Feedback with video - where the individual watches her/his own performance in a non-edited videotape which helps the individual notice her/his appropriate and inappropriate behaviors and allows the individual to discuss these behaviors with the practitioner and make adjustments in future performance (Maione, & Mirenda, 2006)
- (iii) Cue with video - which provides individuals with the opportunity to carry out the skill immediately after the cue is given by the role model. It actively involves the individual in the process (Mechling, 2005).

- (i) Computer-aided video teaching - which presents texts, graphics, animations, sound, music, slides, films and movie recordings within a single system (Scattone, 2008; Mechling, 2005; Shukl-Mehta, & Callahan, 2010).

The research literature shows the majority of studies of video modeling investigated social skills instruction and focused on relatively simple behaviors. Different video modeling types used with children with autism were examined by; Delano, 2008; McCoy, and Hermansen, 2007; Mechling, 2005; and Wang et al., 2011. Video models with contingent praise were used by Bidwell & Rehfeldt (2004) and used by Paterson and Arco (2007) to teach adults with severe disabilities to initiate an interaction by bringing a cup of coffee to an adult peer. Nikopoulos & Keenan (2007) demonstrated that using video models alone was sufficient for teaching three autistic children to initiate an interaction by gesturing or vocally requesting an adult to join the child in play.

This research study is designed to evaluate the impact of video modeling on improving the social skills of children with autism. It differs from the studies reviewed in the literature in the following six ways: Firstly, it is based on studies conducted with individuals diagnosed with autism. Secondly, this study aims to examine the benefits of using a video modeling intervention to increase the social skills of children diagnosed with autism. Thirdly, this study analyses the video model practices used in social skills training in terms of factors such as subjects, environment, the research model and also the reasons the particular social skills were selected, whether they have social validity and whether the skills are maintained or generalized. Thus the practice and its' effectiveness are evaluated. Fourthly, this study focuses on social engagement in a natural setting. Fifthly, the present study addresses a limitation of existing research by studying the effect of video modeling alone without the use of other intervention strategies. Finally, according to the research teams' knowledge, no such study has been conducted either in the UAE or Arab countries.

Method

Procedure for participants' selection

The participants were selected from a Centre-Based Program that provides behavioural interventions for children with autism located in Al Ain, United Arab Emirates. The children display deficits in social interaction skills as observed and reported by teachers, therapists, and parents.

A Multi-disciplinary team of special educators, social workers, psychologists and administrators screened male students aged between five and seven years using the DSM-IV-TR (American Psychiatric Association, 2000), the Autism Behavior Checklist (Arab version) and the Autism Rating Scale. Five participants were subsequently selected for this study because they all displayed deficits in socially expressive behaviors (e.g. social initiation, conversational skills, appropriate nonverbal communication, and answering/asking informational questions).

Participants

The names of the children used in this research are pseudonyms to protect the identity of the participants and the families. All the children have been diagnosed with autism based on the above selection criteria.

- Ali is 6 years old and was referred by specialists. He displays specific behaviors: aggression, making loud unintelligible sounds and screaming, repetitive hand slapping, head beating and staring at the ceiling. He has limited receptive language and responds by screaming when he hears his name. He speaks less than 25 words.
- Salem is 5.5 years old, He frequently engages in a few stereotyped behaviors such as hand flapping and also displays self-injurious behavior. He lacks eye contact, does not interact with other children and is generally unresponsive to people, preferring solitary activity. He needs to be supervised and directed most time.
- Hossien is 7 years old. He has some speech, mainly words in response to visual prompts, but he can make simple requests. He likes playing with toys, painting, puzzles and a few games on the computer. He does not make eye contact, interact with other children or respond to people.
- Falah is 6 years old and he has inappropriate speech. He displays a variety of challenging behaviors and needs to be supervised and directed most of the time. He engages in stereotypical and repetitive behaviors. He has a limited concentration span and transfers from one activity to another very quickly.
- Mohamed is 6 years old and he displays a variety of challenging behaviors including a lack of social behavior and lack of interaction with other children. Most of his speech consists of delayed echolalia phrase and his receptive language is limited to a few words and very simple instructions. He engages in a few stereotyped behaviors, mainly spinning objects and playing with pens.

Research Environment

The participant children were evaluated in the school, a familiar environment where they would be comfortable. However this presented the researchers with some barriers:

- 1) Limited Space – since the classroom was not conducive for individual testing, the hallway was identified as the most suitable location to work with the participants.
- 2) Diagnostician - The teacher was the only appropriate person to carry out the individualized testing and therefore had to be taught the methodology by the researchers who then observed and recorded the responses of teacher and participant.

Dependent and Independent Variables

The dependent variable consisted of the number of tasks that the student correctly modelled from the video. A response was correct when the students performed the task without error, consistent with the visual and auditory model from the video. The student was expected to respond by modeling only the four types of behavior demonstrated in the video (social initiation, conversational skills, appropriate nonverbal communication, and answering/asking informational questions). The response was incorrect if the participant didn't perform the task consistent with the video model.

The mastery criterion was met when a participant completed 80% of tasks correctly by displaying the four responses and maintaining this level for a minimum of three sessions during the intervention plan. The correctly modelled tasks were presented as a percentage of the total number of target tasks based on the task analysis. The percentage of correct tasks completed was calculated by summing the correct tasks completed and dividing by the maximum total target tasks and multiplying by 100.

The independent variable was the presentation of the video model of the teacher to each participant. The video model included a clear narration of the correct tasks, such as saying hello or playing with others. The narration was developed to encourage/ enable the participants to attend to the visual and auditory input from the video.

Experimental Design

An A-B baseline design across participants and settings was used to evaluate the impact of video modeling. Baseline measurements of the social skills of each student participant were made before they were shown the video modeling. During intervention, each student first viewed the video model and was then directed by the teacher to imitate the model. Each student then had to demonstrate the ability to imitate the social skill behaviors observed in the video of social skills with an 80% or greater accuracy in four response types (social initiation, conversational skills, appropriate nonverbal communication, and answering/asking informational questions). As in any A-B design, skill levels at baseline and intervention phases were compared. A comparison between participants was made by noting the changes in the percentage of the correctly completed tasks.

Baseline

During the baseline assessment, the teacher observed the students in different situations. The children's social initiation, conversational skills, appropriate nonverbal communication, and answering/asking informational questions were assessed. One of the researchers documented the number of correct tasks completed by the participant.

Video Modeling Procedure

In this study, technological equipment for the viewing and recording of a video was required. Prior to the study, a training video of a special education teacher modeling the appropriate social skills behavior was created. The social skills training sessions were selected in consultation with the psychologists, social workers, counsellors and a centre supervisor and incorporated into the free-play times available during breaks from instructional time.

Each script regarding the four responses (social initiation, conversational skills, appropriate nonverbal communication, and answering/asking informational questions) was modelled on the video tape At the beginning of each session, the child was asked to sit quietly and watch the television. The experimenter sat next to the child to ensure that the child attended to the video. If the child looked away from the video, the experimenter would say “pay attention”. Two sessions were conducted each day for six weeks. Each session was scheduled to last 3-5 minutes. During that time, the experimenter’s behavior was similar to the behaviors which have been shown in the videotapes.

Results

The results of this study indicate that the use of video modeling is effective in improving the social skills of children with autism. Table (1) displays the students’ scores at pre-intervention (baseline) and post-intervention.

Table 1- Students’ scores on pre-intervention (baseline) and post (intervention).

Test	Ali	Salem	Hossien	Falah	Mohamed
Pre-intervention (baseline)	27	29	25	24	28
Post-intervention	38	40	37	35	39

As can be seen in Table 1, the results indicate that the post-test (intervention) group mean of 37.60 is substantially greater than the pre-test (baseline) group mean of 26.60.

A Wilcoxon test was carried out to compare mean difference of the two tests (pre-and-post) for significance. The results were summarized in table 2.

Table 2- Means, standard deviations of pre & post intervention scores and (Z) score.

Test	Mean	SD	Z	α
Pre-	26.60	1.92	-3.52	0.52
Post-	37.60	2.30		

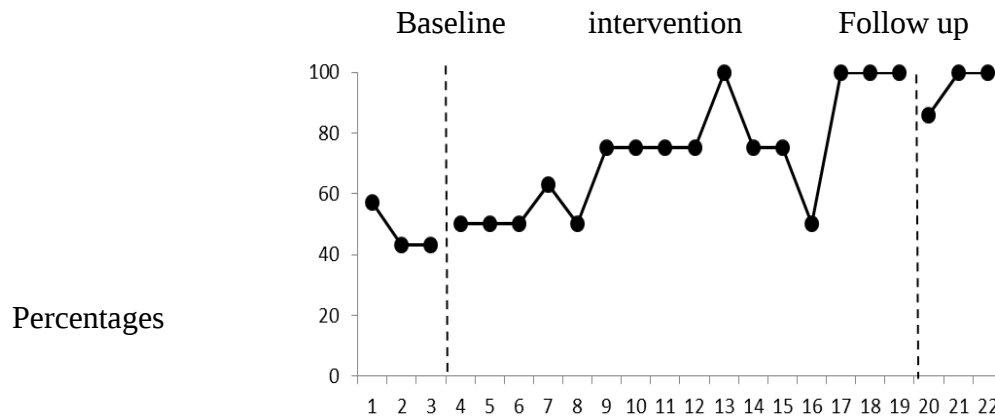
The results of the Wilcoxon test indicate the post-intervention score is significantly higher ($p < .05$) level than the mean of the pre-intervention score, since Z equals -3.52
[What is α here?]

The results for each of the participants are discussed and graphically represented in figures individually, followed by an overall summary of the group results.

Ali. Ali was selected as the first participant to begin the intervention phase because his baseline data showed a stable level (see Figure 1). During baseline assessment, 48% of tasks were correctly completed. During intervention the overall mean percentage of correct tasks completed was 73%, with an increasing trend and level. Ali reached the mastery criterion in 16 sessions. Since Ali demonstrated 100% correct tasks completed in intervention sessions 10, 14, 15, and 16, it might be inferred that he was able to learn the skill due to the video modeling

intervention. The potential effectiveness of the intervention is exemplified by the increasing trend level during the intervention and by Ali's ability to successfully generalize his use of the social skills learned in a natural setting during the follow up phase.

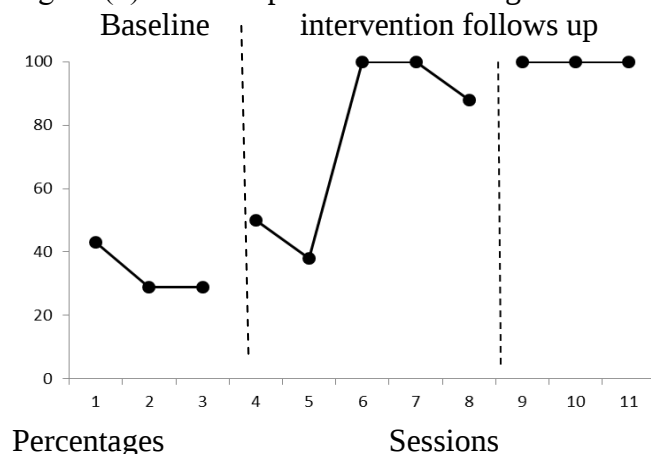
Figure (1). Ali's performance during the baseline, intervention and follow up



Salem

Salem completed 34% correct tasks during baseline assessment. In 5 sessions he reached the mastery criteria for the intervention and had an overall mean of 75% of tasks correctly completed during intervention. Salem correctly completed 100% of target tasks in intervention sessions 3 and 4, and 88% in intervention session 5. He was able to complete the follow up tasks 100% correctly, indicating that he was able to use these skills in novel settings.

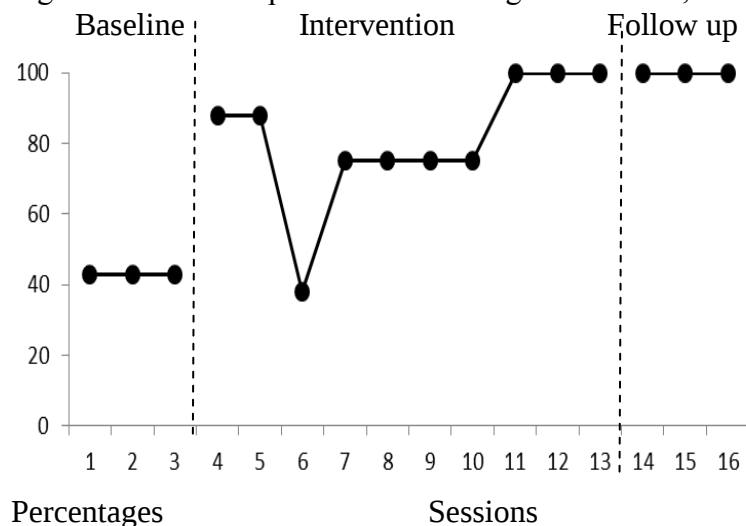
Figure (2). Salem's performance during the baseline, intervention and follow up



Hossien

During baseline assessment, Hossien completed 43% of target tasks correctly. He showed substantial improvement during the intervention phase and over 10 sessions his mean percentage of correctly completed target tasks increased to 81%. His performance in the second intervention session dropped markedly because he was playing (peeking through his hands at the teacher). However, for the remainder of the intervention sessions (4 to 10), his mean score of correctly completed tasks was 86% which is above the mastery criterion. His three subsequent scores of 100% in the follow up sessions show Hossien was effectively trained to learn a new skill in a natural setting using this method.

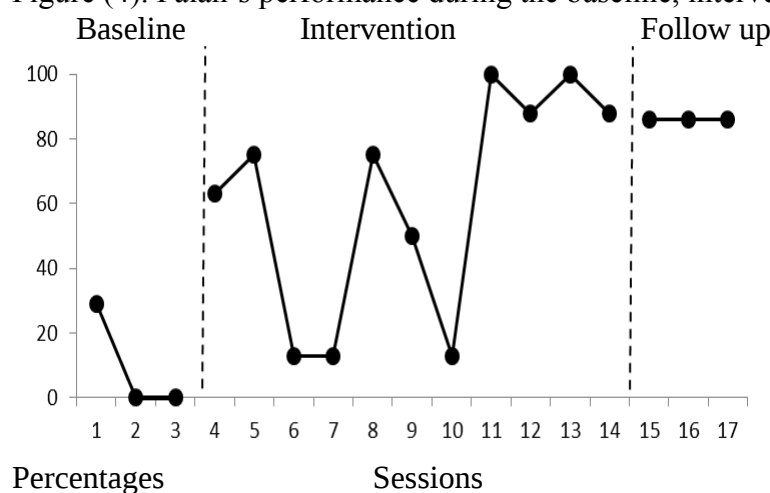
Figure 3. Hossien's performance during the baseline, intervention and follow up



Falah

Although Falah's baseline scores decreased, sessions 2 and 3 were consistent at 0% of correctly completed tasks, as he refused to imitate some behaviors. After viewing the video, the mean scores for intervention sessions 1 and 2 were 69% for correctly completed tasks. However, performance in intervention sessions 3 and 4 dropped to 13%, and after an improvement to 13% in intervention session 5, his performance again dropped to 13% in intervention session 7. The four subsequent intervention sessions averaged 94% for correctly completed tasks. Data from the overall intervention phase showed great variability. The fluctuations from 13% to 100% of correctly completed tasks between intervention sessions 7 and 8 are unlikely to be due to a skill deficit, but more probably explained by Falah's poor concentration and possible efforts to gain attention from the other students or the teacher.

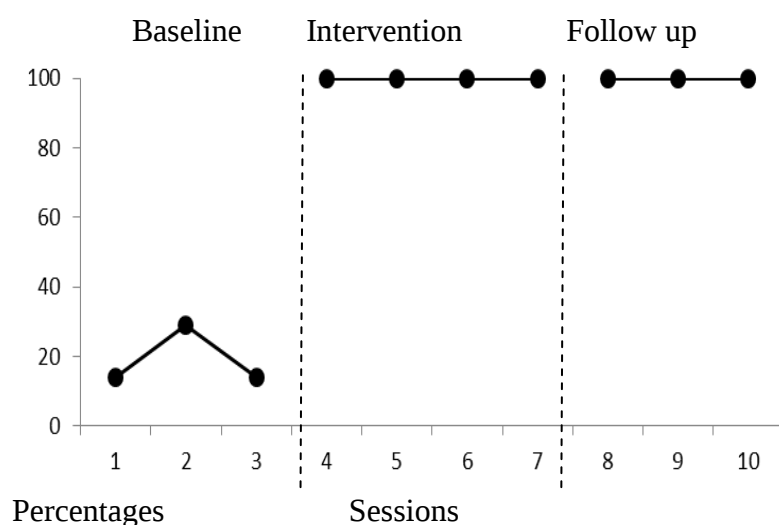
Figure (4). Falah's performance during the baseline, intervention and follow up



Mohamed

Mohamed's baseline scores were stable with a mean of 19% of correctly completed tasks. After his initial viewing the video model, Mohamed repeated many of the words from the narration. His performance increased significantly to 100% correctly completed tasks for all the intervention and follow up sessions, suggesting this was a very effective method of teaching Mohamed social skills.

Figure 5. Mohamed's performance during the baseline, intervention and follow up



Discussion

The main objective of this study was to examine the impact of video modeling on teaching children with autism social skills. The results show that video modeling may be an effective procedure for improving and promoting social skills for all five participant students with autism. All the children in this study reached the mastery criterion for the acquisition of the target

skills/behaviors. These results are similar to some extent to those in previous studies (Shukl-Mehta, & Callahan, 2010; MacDonald, et al., 2009; Cloak, 2007).

Literature shows that children with autism typically lack social skills (e.g. Zrigat & Amam, 2009; Soliman, 2008). The prognosis for the development of these children is related to their acquisition of good social skills. It is important, therefore, that any treatment program for children with autism includes the teaching and promotion of valuable social skills, as this study aimed to do with the participants.

The positive results of this study could be explained if video modeling incorporated a reinforcing element during teaching. Children often enjoy watching videos. If watching a video is in itself a rewarding activity, then children with autism may be more motivated to learn to imitate the modelled activity from a video. Furthermore, it has been well documented that children with autism may have enhanced ability in processing visual stimuli (e.g. Wang et al., 2011; Palechka et al., 2010; Macdonald et al., 2009; Akmanlog, 2008; Nikopoulos & Keenan, 2007).

There are several reasons why video modeling may be helpful in the acquisition of social skills in children with autism. Firstly, video modeling incorporates an acceptable activity into teaching; children often enjoy watching TV and videos. If watching a video is an enjoyable activity, then children with autism may be more motivated to attend to the video and more likely to learn or imitate the modelled activity (MacDonald, et al., 2009; Wang, et al., 2011). Secondly, video modeling takes advantage of the visual processing strengths of children with autism (Shukl-Mehta and Challahan, 2010; Wang, et al., 2011). It has been documented that children with autism can greater enhance their abilities by processing visual stimuli such as video modeling than by traditional methods of teaching (Hine & Wolery, 2006; Reichow & Volkmar, 2010). Thirdly, video modeling can draw a child's attention to the most relevant cues. Children with autism often have difficulty attending to more than one stimulus at a time, and if they attend to wrong or irrelevant stimulus, acquisition of the target behavior may be delayed (MacDonald, et al., 2009; MacMcCoy & Hermansen, 2007). In the present study, the video modeling helps students to focus only on the important information.

The present study may be viewed as a relatively pure intervention in that no other treatment procedures such as promoting or additional reinforcements were used. The only rewards used were in effect the natural reinforcement that occurred as a function of the child's behaviors.

There were a number of limiting factors to this study; the small sample size, the limited research on the competencies and cognitive processes which may influence social skill development, limited resources and the difficulty in crafting a video model to avoid the inclusion of extraneous variables that might distract viewers from the modelled behavior.

The results of this study have several implications for special education teachers and specialists: Firstly, children with autism who can attend to a videotape for several minutes without exhibiting disturbed behavior may respond very well to video modeling. Secondly, video modeling often facilitates rapid skill acquisition across settings, people and materials. This is particularly important to note because generalization is rarely attained by children with autism using promoting methods. Thirdly, the use of adult models has been shown to be effective in

teaching social skills to children with autism and may simplify the process of making videotapes. Fourthly, video modeling tapes are relatively easy to create. Lastly, video modeling may be useful in treating some of the core deficits found in children with autism (e.g. communication skills, and challenging behaviors).

In conclusion, researchers have successfully used video modeling interventions to improve social skills (Bellini & Akullian, 2007; D'Ateno, Mangiapanello, & Taylor, 2003; MacDonald et al, 2009; Shukl-Mehta and Challahan, 2010; Wang, et al., 2011). The acquisition of these skills is vital for children with autism. Researchers are beginning to examine the use of video modeling to address deficits in social skills and improve these skills. The present study adds to the literature by demonstrating that social skills can be taught to children with autism using video modeling. Furthermore, based on the results of this study, teachers, psychologists, and social workers working with children with autism might consider using video modeling as reinforcement when teaching social skills to these students. Additionally, video modeling may be preferred for students with whom traditional teaching methods are ineffective. More research needs to be conducted by using larger samples.

Future research into the social validity of video modeling interventions should involve teachers, psychologists and social workers. In addition, a comparative analysis should be conducted to determine whether video modeling is limited in its capacity to teach these or other behaviors (e.g. academic, communication and language skills).

References

- Al Zyoudi, M. (2008). *Selected topics in special education*. Dar Alshroq. Amman. Jordan.
- Baker, J. (2007). *Social skills training for children and adolescents with Asperger syndrome and social communication problems*. Kansas: Autism Asperger Publishing.
- Banda, D., Matuszny, R., & Turkan, S. (2007). Video modeling strategies to enhance appropriate behaviors in children with autism spectrum disorders. *Teaching Exceptional Children*, 39 (6), 47-52.
- Bellini, S., & Akullian, J. (2007). A meta-analysis of video modeling and video self-modeling interventions for children and adolescents with autism spectrum disorders. *Exceptional Children*. 73, 264-287.
- Bidwell, M., & Rehfeldt, R. (2004). Using video modeling to teach a domestic skill with an embedded social skill to adults with severe mental retardation. *Behavior Interventions*, 19, 263-274.
- Cotugno, A. (2009). Social competence and social skills training and intervention for children with autism spectrum disorders. *Journal of Autism and Developmental Disorders*. 39, 1268-1277.
- D'Ateno, P., Mangiapanello, K., & Taylor, B. (2003). Using video modeling to teach complex play sequences to a pre-schooler with autism. *Journal of Positive Behavior interventions*, 5, 5-11.
- Delano, M. (2008). Video modeling interventions for individuals with autism. *Remedial and Special Education*, 28 (1), 33-42.

- Hine, J., & Wolery, M. (2006). Using point of view modeling to teach play to pre-school children with autism. *Topics in Early Childhood Special Education*, 26, 83-93.
- Kinney, E., Vedora, J., & Stromer, R. (2006). Computer generated video models to teach generative spelling to a child with autism spectrum disorders. *Journal of Positive Behavior interventions*, 5, 22-29.
- MacDonald, R., Sacramone, S., Mansfield, R., Wiltz, K., & Ahern, W. (2009). Using video modeling to teach reciprocal printed play to children with autism. *Journal of Applied Behavior Analysis*, 42, 43-55.
- Maione, L., & Mirenda, P. (2006). Effects of video modeling and video feedback on peer directed social language skills of a child with autism. *Journal of Positive Behavior interventions*, 8, 106-118.
- McCoy, K., & Hermansen, E. (2007). Video modeling for individuals with autism: A review of model types and effects. *Educational and Treatment of Children*, 30 (4), 183-213.
- Mechling, L. (2005). The effect of instructor created video programs to teach students with disabilities. A literature review. *Journal of Special Education Technology*, 20 (2), 25-36.
- Nikopoulos, C., & Keenan, M. (2007). Using video modeling to teach complex social sequences to children with autism. *Journal of Autism and Developmental Disorders*, 37, 678-693.
- Paterson, R., Arco, L. (2007). Using video modeling for generalizing toy play in children with autism. *Behavior Modification*, 31 (5), 660-681.
- Reichowm, B., & Volkmar, F. (2010). Social skills interventions for individuals with autism: Evaluation for evidence-based practices within a best evidence synthesis framework. *Journal of Autism and Developmental Disorders*, 40, 149-166.
- Scattone, D. (2008). Enhancing the conversation skills of a boy with Asperger's disorder through social stories and video modeling. *Autism Development Disorder*, 38, 395-400.
- Shipley-Benamou, R., Lutzker, J., & Taubman, M. (2002). Teaching daily living skills to children with autism through instructional video modeling. *Journal of Positive Behavior interventions*, 4, 165-175.
- Shukl-Mehta, M., & Callahan, K. (2010). Evaluating the effectiveness of video instruction on social and communication skills training for children with autism spectrum disorders. A review of the literature. *Focus on Autism and Other Developmental Disabilities*, 15 (1), 23-36.
- Teteault, A., & Lerman, D. (2010). Teaching social skills to children with autism using point-of-view video modeling. *Education and Treatment of Children*. 33, (5), 395-419
- Wang, S., Cui, Y., & Parrila, R. (2011). Examining the effectiveness of peer-mediated and video modeling social skills interventions for children with autism spectrum disorders: A meta-analysis in single-case research using HLM. *Research in Autism Spectrum Disorders*. 5, 562-569.
- Wert, B., & Neisworth, J. (2003). Effects of video self-modeling on spontaneous requesting in children with autism. *Journal of Positive Behavior interventions*, 5, 30-34.
- Wilson, K. (2012). Incorporating video modeling into a school based intervention for students with autism spectrum disorders. *Language, Speech, and Hearing Services in Schools*. 31, 105-117.
- Zriqat, E., & Amam, A. (2009). *Autism*. Dar Alshroq. Amman. Jordan.

Author Guidelines for Submission to JAASEP

JAASEP welcomes manuscript submissions at any time. Authors are completely responsible for the factual accuracy of their contributions and neither the Editorial Board of JAASEP nor the American Academy of Special Education Professionals accepts any responsibility for the assertions and opinions of contributors. Authors are responsible for obtaining permission to quote lengthy excerpts from previously-published articles.

Authors will be notified of the receipt of their manuscripts within 14 business days of their arrival and can expect to receive the results of the review process within 30 days.

All submissions must have a cover letter indicating that the manuscript has not been published, or is not being considered for publication anywhere else, in whole or in substantial part. On the cover letter be sure to include your name, your address, your email address, and your phone number

As much as possible, typescript should conform to the following:

- Method of Manuscript Submission: Send Manuscripts should be submitted electronically with the words "Submission" in the subject line.
- Language: English
- Document: Microsoft Word
- Font: Times New Roman or Arial
- Size of Font: 12 Point
- Page Limit: None
- Margins: 1" on all sides
- Title of paper: Top of page Capitals, bold, centered,
- Author(s) Name: Centered under title of paper
- Format: Feature Manuscripts should follow the guidelines of fifth edition of the Publication Manual of the American Psychological Association (APA).
- Figures and Tables: All should be integrated in the typescript.
- Abstract: An abstract of not more than 150 words should accompany each submission.
- References: Insert all references cited in the paper submitted on a Reference Page

Submission of Articles: Submissions should be forwarded by electronic mail to the Editor, Dr. George Giuliani at editor@aasep.org

Copyright and Reprint Rights of JAASEP

JAASEP retains copyright of all original materials; however, the author(s) retains the right to use, after publication in the journal, all or part of the contribution in a modified form as part of any subsequent publication.

JAASEP is published by the American Academy of Special Education Professionals. **JAASEP** retains copyright of all original materials; however, the author(s) retains the right to use, after publication in the journal, all or part of the contribution in a modified form as part of any subsequent publication.

If the author(s) use the materials in a subsequent publication, whether in whole or part, **JAASEP** must be acknowledged as the original publisher of the article. All other requests for use or re-publication in whole or part should be addressed to the Editor of **JAASEP**.