JAASEP

JOURNAL OF THE AMERICAN ACADEMY *of* SPECIAL EDUCATION PROFESSIONALS

FALL 2018

ISSN 2325-7466 (Online)

American Academy of Special Education Professionals
AASEP

JOURNAL of the
AMERICAN ACADEMY
of
SPECIAL EDUCATION PROFESSIONALS
(JAASEP)
Fall, 2018

Volume 13, Issue 3

Table of Contents

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

Dana Reinecke, Ph.D.
Denise Rich-Gross, Ph.D.
Benjamin Riden, ABD - Ph.D.
Clarissa E. Rosas, Ph.D.
Audrey C. Rule, Ph.D.
Pamela Mary Schmidt, M.S.
Edward Schultz, Ph.D.
Diane Schwartz, Ed.D.
Emily R. Shamash, Ed.D.
Dr. Mustafa Serdar KOKSAL
Cynthia T. Shamberger, Ph.D.
Gregory W. Smith, Ph.D.
Emily Sobeck, Ph.D.
Ernest Solar, Ph.D.
Trisha Spencer, M.S.Ed.
Michelle Stephan, Ed.D.
Gretchen L. Stewart , Ph.D. Candidate
Kristine Lynn Still, Ph.D.
Roben W. Taylor, Ed.D.
Amanda D. Tedder, M.ED.
Jessie S. Thacker-King, Ed.D
Raschelle Theoharis, Ph.D.
Vicki A. Urquhart, M.Ed.
Joseph Valentin, M.S. Ed., B.C.S.E
Julia VanderMolen, Ph.D.
Cindy Widner, Ed.D. Candidate
Kathleen G. Winterman, Ed.D
Perry A. Zirkel, Ph.D., J.D., LL.

Understanding the Removal of Classroom Auditory Distractors: An Interactive Design

Gregory W. Smith, Ph.D.
University of Southern Mississippi

Audra I. Classen, Ph.D.
University of Southern Mississippi

Paul J. Riccomini, Ph.D.
Pennsylvania State University

Robyn R. Brewer, Graduate Student (BCBA Program)
University of Southern Mississippi

Abstract

Students with a specific learning disability (SLD) have unique learning needs that must be met. Thus, it is imperative for teachers to incorporate flexible instructional materials, techniques, and strategies for academic progress to take place. One way teachers can be flexible is by allowing students with disabilities to take standardized (i.e. high stakes tests) in removed, quieter settings rather than the typical classroom. Therefore, this naturalistic inquiry study sought to understand what happens when noise reducing headphones were introduced to students, specifically those with SLD, in an elementary classroom. Student descriptions and perceptions of wearing headphones during a reading comprehension assessment indicated student participants seemed to enjoy the experience. Student explanations for this response focused on three principles: (a) internal (i.e. to help the individual internally), (b) external (i.e. to reduce external distraction), and (c) internal and external (i.e. to help the individual internally by reducing external distraction).

Keywords: Learning disability, classroom distractions, noise, classroom environment, qualitative, teacher education, accommodations

Understanding Potential Classroom Auditory Distractors: An Interactive Approach

According to the National Center for Education Statistics (2015), students with disabilities accounted for nearly 13 percent of all students served in U.S. public schools during the 2010-2011 academic year. Specific learning disabilities (SLD; 36%) make up the largest of the 13 categories identified in the Individuals with Disabilities Education Improvement Act (2004) with the next largest category being speech or language impairments (21%) (U.S. Department of Education, 2013a). Additionally, it is estimated that 2% of students in the United Kingdom (UK) have some form of learning disability (British Institute of Learning Disabilities, 2017), while it is indicated that 10-16% of students in Australia have learning difficulties (Learning Difficulties Australia, 2017). Students with SLD have distinctive learning needs (Igo, Riccomini, Bruning, & Pope, 2006) that must be met in order to assure students successfully progress in the general education curriculum.

It is essential for all teachers to recognize the varied needs of students with and without disabilities. For academic progress to take place it is imperative for teachers to meet the diverse needs represented in each classroom by incorporating flexible instructional materials, techniques, and strategies (CAST, 2009).Effective teachers acknowledge diversity and adapt their teaching methods according to individual student needs (Erten & Savage, 2012, p. 228) by providing choices, flexibility in groupings, and various teaching strategies. One way teachers can be flexible is by allowing students with disabilities to take standardized (i.e. high stakes tests) in removed, quieter settings than the typical classroom. Testing accommodations are changes in the testing procedures enabling students to demonstrate their knowledge without restrictions (Kettler, 2012). This process is employed to ultimately reduce the negative effect auditory distracters have on academic performance. Auditory distraction impedes all students' (e.g., with and without disabilities) performance and functioning.

Literature Review

Researchers have been studying effects of noise on physiology, psychology, social interactions, and academics since the early part of the twentieth century (e.g., Laird, 1927; Laird, 1929; Morgan, 1916; Morgan, 1917; Harmon, 1933; Poyntz, 1933). Morgan's (1917) seminal work first established the adverse noise effects on academic performance. Participants attempted to learn novel information in both noisy and quiet surroundings. Results from this study demonstrated that participants in noisy environments had shorter attention spans and were less likely to retain information. Researchers have replicated similar results indicating the negative effect of auditory distraction on learning.

The Negative Effects of Noise

In 2003, Shield and Dockrell conducted a comprehensive literature review on the effects of noise on children while in the school setting. Thus, a new literature review on noise and academic performance beginning with the year 2002 permitted the researcher of this study to "catch" articles not included in the most recent literature review by Shield and Dockrell. The new search yielded 13 articles, three of which were printed in either 2002 or 2003 and not in the Shield and Dockrell review. Results from this literature review demonstrated noisy environments impacted participants' (a) performance on academic tasks; (b) attention or ability to concentrate; and (c) memory or ability to recall information. Articles are grouped by these categories below.

Performance on Academic Tasks. Nine studies controlling the environments' noise level in various ways found significant changes in participants' ability to perform specific tasks such as reading comprehension, (Boman, 2004; Smith & Roccomini, 2013; Stansfield et al., 2005); arithmetic tasks (Dockrell & Shield, 2006), standard academic practice tests (Furnham & Strbac, 2002); computer generated cognitive tasks (Gumenyuk, Korzyukov, Alho, Escera, & Naatanen, 2004; Jamieson, Kranic, Yu, & Hodgetts, 2004; Soderlund, Sikstrom, & Smart 2007); picture word identification (Nelson, Kohnert, Sabur, & Shaw, 2005). Greater detail for each of these studies are presented below by specific cognitive tasks measured.

Reading comprehension was negatively impacted, in the study conducted by Boman (2004), when three auditory conditions (i.e., road traffic noise, meaningful irrelevant speech, silence)

were present during reading assessments conducted with 96 children (age range=13-14). Findings from this study indicate that students processed material semantically when in the presence of traffic noise or irrelevant speech, reducing their ability to comprehend text. Similarly, reading assessments were given while 254 participants (i.e., participants with disabilities, n=52; participants without disabilities, n=202) were wearing and not wearing noise reducing headphones. Results indicated a positive correlation between test scores and noise reducing test accommodations for students with disabilities (Smith & Roccomini, 2013). Finally, Stansfield and colleagues (2005) found aircraft and road traffic noise had a significant negative effect on reading comprehension measured by standardized tests for 2844 children (i.e., ages 9-10, attending 89 schools).

Arithmetic performance of students with special needs was negatively affected, in Dockrell and Shield's (2006) study exploring the effect of noise on performance in the classroom. Three separate classrooms were randomly assigned to be used for one of three distinct noise conditions (a) *base*: no talking, no additional noise, (b) *babble*: noise consisting of children's babble, and (c) *babble and environmental noise*: children's babble plus intermittent environmental noise. Assessment measures were done on student completion of non-verbal tasks, verbal tasks, and arithmetic tasks. Results varied for both verbal task and arithmetic task completion. However, poor overall performance on non-verbal tasks was shown to be affected by noise conditions.

Standard academic tests (i.e., reading comprehension, prose recall, mental math) were were given while 66 participants (age, M=17) were exposed to typical city noises on CD, contemporary garage-style music on CD, and silence (Furnham & Strbac, 2002). Results demonstrated performance declined for introverts and extroverts on all tasks when in the presence of noise and music. Furthermore, there was no difference in performance tasks between typical city noises and music.

Three studies used a computer screen that presented pictures and/or directions to the participants (Gumenyuk, Korzyukov, Alho, Escera, & Naatanen, 2004; Jamieson, Kranic, Yu, & Hodgetts, 2004) while being exposed to typical sounds found in the environment (Gumenyuk, Korzyukov, Alho, Escera, & Naatanen, 2004; Soderlund, Sikstrom, & Smart 2007) or real-life classroom noise (Jamieson, Kranic, Yu, & Hodgetts, 2004). The 26 participants (age range, 8-13) were asked to ignore the sounds and respond to the tasks presented on the computer screen (Gumenyuk, Korzyukov, Alho, Escera, & Naatanen, 2004). Data was collected on performance tasks when noises were present as well as during silent phases. Results showed that auditory distractions, in the form of environmental sounds, increased reaction time and decreased performance accuracy (Gumenyuk, Korzyukov, Alho, Escera, & Naatanen, 2004). Similarly, 40 participants (age range, 5-8) sat in front of computers wearing headphones playing real-life classroom noise at typical auditory levels were simultaneously given directions to follow on the computer (Jamieson, Kranic, Yu, & Hodgetts, 2004). This study showed that children performed better while no noise was being played through the headphones. Results indicated the youngest participants, ages five and six, were more effected by the noise than older participants. Finally, 42 participants with ages ranging between nine to thirteen (Control group those without ADHD, n=21; participants with ADHD, n=21) were asked to perform cognitive independent verbal tasks while different levels of white noise found in the environment were presented via headphones (Soderlund, Sikstrom, & Smart 2007). Results from this study demonstrated white noise had a

negative effect on cognitive performance on the control group with a positive effect on the ADHD group

Picture word identification was significantly decreased for both English speaking and English language learners (ELL) participants (*N*=22; ELL students, *n*=15; three classrooms) when exposed to classroom noise (Nelson, Kohnert, Sabur, & Shaw, 2005). Participants were given a list of spoken words in English during both noise and quiet conditions. The participants were then asked to match the word with the corresponding picture. Results of this study show auditory stimuli had no effect on student's on-task behavior.

Attention: The Ability to Concentrate. Two studies found attentiveness and concentration levels to be effected when noise level in the environment was manipulated (Fosnaric & Planinsec 2008; Norlander, Moas, & Archer, 2005). Twenty male participants (age, M=13) were exposed to an artificially created learning environment, called a "climate chamber", where sights, sounds, and climates were manipulated by researchers (Fosnaric & Planinsec 2008). Participants were presented with 360 measures during 18 different working combinations. Results indicated noise decreases work efficiency and increases stress levels. It was also shown that alterations to the physical environment affects attentiveness on cognitive exercises. Similarly, Norlander, Moas, and Archer (2005) examined noise, stress, and concentration levels in primary and secondary school children. Measures of noise levels in five primary and secondary classrooms were given before and after the implementation of a short, consistent exercise and relaxation program. Overall results indicate reduced noise levels in classrooms where students took part in the exercise and relaxation program (Norlander, Moas, & Archer, 2005). Results from a teacher questionnaire showed students in the experimental group had an increase in concentration level.

Memory: The Ability to Recall Information. Three studies explored the effects of different noise sources and sound levels on long-term recall (Elliot, Bhagat, & Lynn, 2007; Hygge, 2003; Hygge, Evans, and Bullinger, 2002). In the first study, a computer, computer software (i.e., Cool Edit and E-Prime), and Radio Shack headphones were used to assess performance on immediate span task and serial recall (Elliot, Bhagat, & Lynn, 2007). This study was conducted with 1358 children (age range, 12-14). The computer program Cool Edit handled the onset and offset of irrelevant sounds. The computer program E-Prime selected digits one through nine for the immediate span task and serial recall procedures (Elliot, Bhagat, & Lynn, 2007). Results demonstrated that irrelevant sound disrupts memory performance significantly for all children. Similarly, Hygge (2003) conducted ten noise experiments (single and combined), presented for 15 minutes per experiment, in the children's ordinary classrooms, during silent reading, and followed up one week later with an assessment. Results from this study indicate significant negative effects of noise on recognition and long-term recall (Hygge, 2003). The third study, tested 326 students between the ages of eight to 12 (participants living near the old airport, *n*=108; participants living near the new airport, *n*=218) while living away from and in the region of an airport due to the study taking place before and after construction of the new airport (Hygge, Evans, & Bullinger, 2002). Attention and speech perception was tested using evidence-based assessments; memory was tested using a national standardized reading test. Results demonstrated (a) reading and long-term memory were lessened for the group at the new airport, (b) reading, long-term memory, and short-term memory increased for the group at the old airport, and (c) speech perception was lessened at the new airport (Hygge, Evans, & Bullinger,

2002). Results from this study emphasize the damaging impact living in an area with large amounts of aircraft traffic has on learning.

Summary of Literature Review

Researchers in the field of cognitive psychology and education have demonstrated the negative effects of noise on academic performance for almost a decade. The information gained from previous research is significant and critical to this research because it shows how reducing auditory distractions in the educational setting could increase academic performance. Furthermore, a beneficial insight to both student and teacher would be qualitative research focused on how people behave when they are captivated by life experiences occurring in natural settings (Lincoln & Guba, 1985), of students' experience using noise reducing headphones as a test accommodation in the real classroom.

Typically, qualitative research is motivated by the researcher's curiosity and excitement about a specific topic (Moustakas, 1994). The current research study stems from the author's previous positive experience using noise reducing headphones as a student. Therefore, this study sought to understand what happens when headphones were introduced to students with and without disabilities, in an elementary classroom. Thus, exploring student descriptions and perceptions of wearing headphones during a reading comprehension assessment.

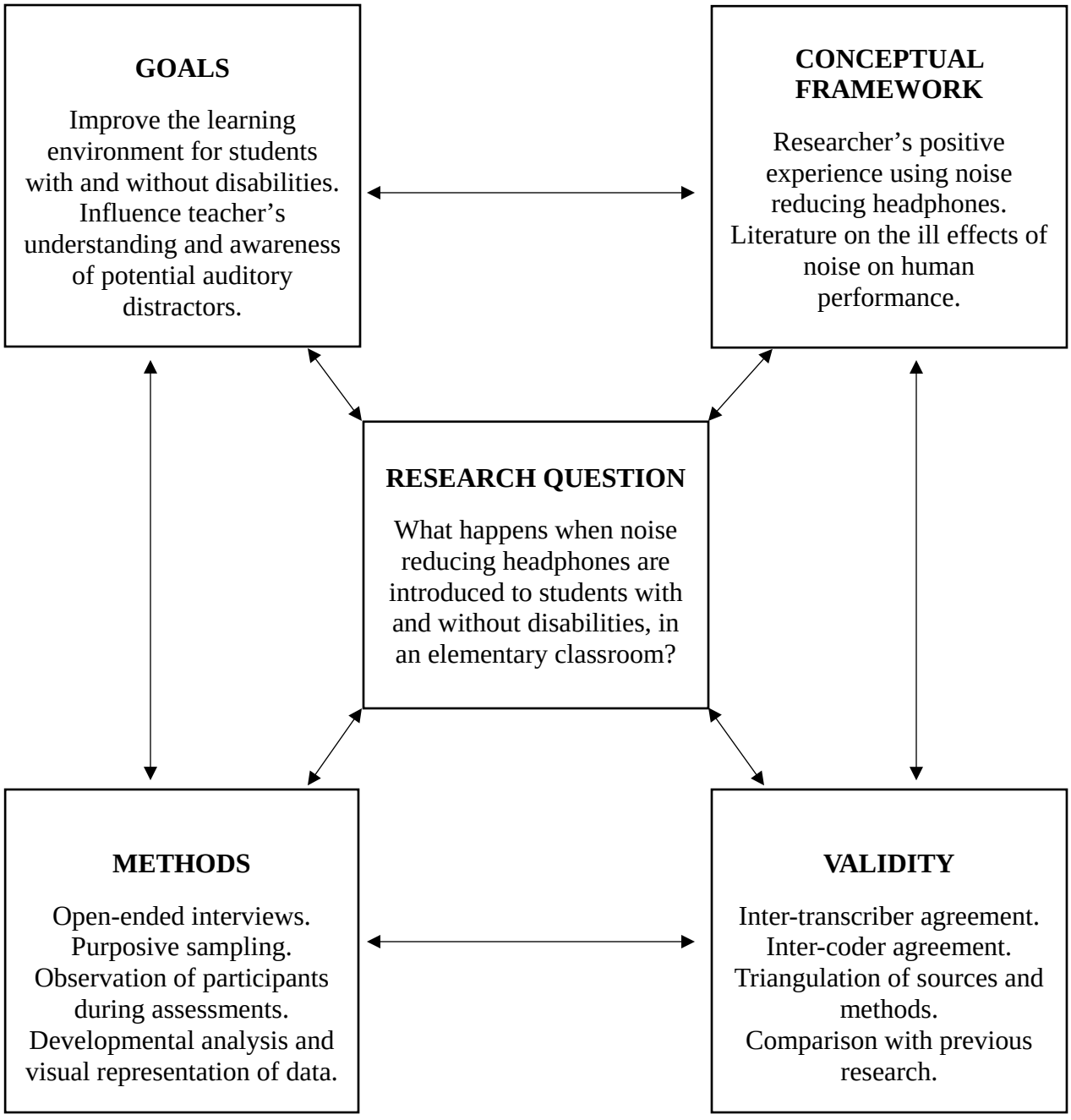

Figure 1. An Interactive Research Design Model.

**Adapted from Maxwell (2005).*

Method

This qualitative inquiry was a part of a large mixed-methods study exploring how noise reducing headphones used as a testing accommodation effected a reading comprehension assessment for elementary students with and without disabilities. Quantitative results were analyzed and disseminated separately. Qualitative research is distinguished by three assumptions. One is a holistic view of "situations in their uniqueness as part of a particular context and interactions" occurring there (Merriam, 2002, p. 5). Two, the researcher must be involved in order to understand a phenomenon (Merriam, 2002). Finally, the researcher seeks a thorough description of the phenomena so hypotheses can be generalized.

An Interactive Approach

Researchers followed Maxwell's (2005) *Qualitative Research Design: An Interactive Approach* that utilizes an interconnected and flexible structure to conduct qualitative research. The five components of this "Interactive Approach" include (a) developing goals for the study, (b) using a conceptual framework, (c) developing research questions, (d) designing the methods of the study, and (e) assuring processes are in place to ensure validity (Maxwell, 2005). However, the relationship between each of the components mentioned above are critical because they are closely linked to each other. See figure one for an example of the five components specific to this study. All five components of the Interactive Approach are embedded throughout the Method and Results sections.

Participant Demographics

To achieve maximum variation, twenty-four students were purposively selected to participate in interviews for this qualitative inquiry, mirroring the participants sampled in the quantitative component (i.e. students represented two schools, all three grades, and all four groups). Table 1 presents demographic variables for all participants. As was the case in the quantitative study, over half of all students selected to take part in the interviews were eligible for free or reduced lunch status (n=15). Also similar to the quantitative study, general education students (n=13) represented the largest group interviewed, and students with other disabilities (n=2) embodied the smallest number of participants.

Table 1
Qualitative Participant Demographics

	General Education	At-Risk	Learning Disabilities	Other Disabilities	All Groups
N	13	4	5	2	24
Gender					
n Female	6	2	3	1	12
Grade Level					
n 3rd	3	1	1	0	5
n 4th	4	1	2	1	8
n 5th	6	2	2	1	11
Reading Level					
Mean	5.00	4.37	3.06	3.09	4.36
SD	1.67	.618	.687	.664	1.50
Range	1.4-8.7	3.7-4.9	2.1-4.0	3.4-3.5	1.4-8.7
Lunch Status					
n Free	6	2	3	1	12
n Reduced	3	0	0	0	3
n Pay	4	2	2	1	9

Data Collection Procedures

Twenty-four elementary students were given two reading comprehension assessments each lasting five to twenty minutes. Each student was afforded the opportunity to wear the headphones during one of the two assessments. The primary researcher observed participants while taking the assessment and collected interview data after the assessments were administered. As Bogden and Biklen (2007) recommend, qualitative researchers should conduct all investigations in the natural setting. Therefore, the interviews took place in the hallway directly outside the classroom where the researcher presented this question "Would you choose to wear the noise reducing headphones during class if you were allowed to do so?" and a follow up question of "Why?" or "Why not?"

Observations of participants. The primary researcher observed participants during the assessment phase of this study. As previously stated, all participants took a reading comprehension assessment in their natural classroom environment. The primary researcher entered the classroom and (after a brief introduction) randomly selected students to wear noise reducing headphones during the first assessment. After the first assessment, students that were not chosen to wear the headphones during the first assessment were afforded an opportunity to do so during the second assessment. As recommended by Maxwell (2005), the primary researcher kept a written log (e.g. notes) of the observations (what was seen and heard). Observational data is presented in the results section below (see: participant specifics).

Interview transcriptions. Following the conclusion of the larger mixed-methods, the researcher transcribed all of the interviews utilizing the Olympus VN-6000 Digital Recorder and Microsoft Word via a laptop. Each of the 24 interviews were listened to, and transcribed in their entirety. Playback of interviews occurred until the researcher was confident all data was transcribed accurately. A trained doctoral student listened to 12 interviews (50%) to ensure accuracy; inter-transcriber agreement on transcription accuracy was achieved (100%), as both the researcher and doctoral student transcribed identical data. Inter-coder agreement was also achieved (100%); both the researcher and trained doctoral student developed similar topics and supporting statements.

Data Analysis Procedures

After all of the data was transcribed verbatim, the researcher began analyzing the data to (a) develop emergent themes, (b) refined codes, (c) developed code definitions with examples, and (d) compare relationships between codes. The next step was to code the data so the evidence reflected increasingly broader perspectives. Thus, the researcher began to highlight significant statements (quotes) that provided an understanding of how the students experienced the phenomenon of wearing the headphones. From the 24 interview transcripts, significant statements were extracted and topics were developed. This coding process is the main categorizing strategy in qualitative research (Maxwell, 2005).

Results

Three topics were developed from 24 significant statements extracted from the transcriptions. The three topics identified were internal, external, and both internal and external. Statements describing students' ability or inability to focus, concentrate, or think were coded as internal. For example, an internal code was assigned to the quote "I could focus more. I think it helped me." Statements describing how the noise reducing headphones reduced noise and sound both positively and negatively were coded as external. An external coded statement was, "People are always talking and making noise." Finally, statements describing the students' level of concentration, distraction along with mention of noise and sound being reduced were coded as both internal and external. An internal and external code example was, "It would keep the noise out, and I would have no interruptions. I can hardly concentrate when the class is noisy." The topics along with the best supporting statements representing the essence of the topics can be found in the Comparison Matrix (Table 2). The organizing framework for this qualitative component culminates in a comparison matrix; the qualitative data are displayed and visually represented in a manner allowing others to easily compare statements coded for each topic. The use of a matrix helps to display the logical connections between the research questions and the analysis of the data (Maxwell, 2005).

Table 2
Comparison Matrix

Topic	Answer	Significant Statements
Internal	Yes	"It keeps me focused on my work, not anyone else."
	Yes	"I could do better on my test than I do now."
	Yes	"I could focus more. I think it helped me."
	Yes	"I could concentrate more, get better grades."
	Yes	"It makes me focus better, it makes me want to stay on-track whenever I'm reading and writing."
	Yes	"I could concentrate better, and listen better, and get my work done faster."
	No	"It was hard to think about"
External	Yes	"People are always talking and making noise."
	Yes	"It blocks out all of the sound."
	Yes	"Sometimes other people are so loud."
	Yes	"If someone else is talking when you are going your work, you won't be able to hear them."
	Yes	"I liked not hearing people read out loud. They bother me."
	Yes	"Other kids make noise."
	Yes	"The other people in the class, they be loud."
	No	"I like talking to Jessie, and if I wore the headphones I would not be able to hear what she says."
Internal and External	Yes	"So I can't get distracted by other things. I sit next to the window and the heater, and I always get distracted by them."
	Yes	"It would keep the noise out, and I would have no interruptions. I can hardly concentrate when the class is noisy."
	Yes	"I usually get distracted and in trouble because of the people around me."
	Yes	"It's like if you're taking a test, and somebody right beside you is making noise, and you wanna get them out of your head, you could just put on the headphones."
	Yes	"It helped me do better because a lot of people talk in class. It would drown out distractions and I kind of get distracted real easy."
	Yes	"I usually get distracted by other things, and the headphones would make me focused."
	Yes	"People make a lot of noise, and I can't concentrate."
	Yes	"I hate sitting next to people. They are always noisy, and I can't get anything done."
	No	"Sometimes the people around me help with my work."

Participant Specifics

Observations of participants included: (a) students visually pleased (e.g. facial expressions) when selected to wear the headphones, (b) students visually displeased when not selected to wear the headphones, and (c) clear physical signs of amusement and wonder (e.g. facial expressions) when placing the headphones on for the first time. Additional information regarding: (a) group category, (b) reply, (c) grade level, (d) reading level, and (d) assessment score is provided in Table 3. Interestingly, two of the three students that answered, “No” to the question, “Would you choose to wear the headphones during class if you were allowed to do so?” scored better when wearing the headphones. Conversely, six of the 21 students that replied, “Yes”, scored worse when wearing the headphones. These findings are imperative, especially when taking into consideration whether or not to allow students to make their own decision when choosing a specific learning or test-taking accommodation.

Table 3
Participant Specifics

Category	Reply	Grade Level	Reading Level	Assessment Score		Score Difference
				W/O Headphones	W/ Headphones	
Gen. Ed.	Yes	3	4.9	8	6	-2
Gen. Ed.	Yes	3	1.4	3	3	0
Gen. Ed.	Yes	3	1.4	3	3	0
SLD	Yes	3	3.3	4	6	2
At-Risk	Yes	3	3.7	4	4	0
Gen. Ed.	Yes	4	5.2	6	7	1
Gen. Ed.	Yes	4	3.9	6	6	0
Gen. Ed.	Yes	4	3.3	2	3	1
Gen. Ed.	Yes	4	6	6	7	1
Gen. Ed.	Yes	4	5.5	6	6	0
SLD	Yes	4	2.9	2	3	1
SLD	Yes	4	2	0	0	0
At-Risk	Yes	4	2.6	4	5	1
Other	Yes	4	3.1	6	1	5
Gen. Ed.	Yes	5	8.7	7	7	0
Gen. Ed.	Yes	5	5.9	4	3	-1
Gen. Ed.	Yes	5	5.6	7	6	-1
Gen. Ed.	No	5	3.4	2	7	5
Gen. Ed.	No	5	4.7	6	6	0
Gen. Ed.	No	5	4.9	4	6	2
SLD	Yes	5	2.1	4	1	3
SLD	Yes	5	5	4	5	1
At-Risk	Yes	5	5	8	4	-4
At-Risk	Yes	5	4.9	0	1	1
Other	Yes	5	3.4	0	0	0

Note. Gen. Ed.=General Education; SLD=Specific Learning Disability; Other=Other Disability
W/=With; W/O=Without

Summary

From the interview data, overall findings indicate student participants seemed to enjoy the experience of wearing the headphones, and taking part in the study. The replies to the proposed question, "Would you choose to wear the noise reducing headphones during class if you were allowed to do so?" followed by "Why?" or "Why not?" were answered by a total of 24 elementary students. Twenty-one of the 24 students that participated in the interviews responded with a, "Yes." Student explanations for this response focused on three principles: (a) internal (i.e. to help the individual internally), (b) external (i.e. to reduce external distraction), and (c) internal and external (i.e. to help the individual internally by reducing external distraction).

Discussion

Findings from the current study indicate that many more students preferred to use (n=21) the noise reducing headphones during a reading comprehension task than students who did not (n=3). Additionally, students' preference to use the headphones revolved mostly around the idea that they believed the reduction in noise helped them better preform the task (e.g., keeps me focused, could concentrate, and reduces distraction). The headphones were used in a whole class setting during a routine reading comprehension task and were overwhelmingly positively received by the students. Interestingly, some students that scored better while not wearing the headphones would still choose to wear them if given the opportunity to do so.

Another important finding of this current study is what students did not say; no students reported that while wearing the headphones, it was too quiet and attributed the lack of noise for performing poorly on the task. This is interesting for at least two reasons: (1) not all students performed better using the headphones (n=8 scored the same), and (2) some students actually performed worse using the head phones (n=5 scored worse). Since, students were not provided feedback on the completion of their tasks (i.e., scores with and without headphones), students perceived experiences of using the headphones do not necessarily match their performance (n=13). This finding could be explained because the sample in this study purposefully targeted students with learning disabilities and those students at-risk; student with learning difficulties as a group are often are not effective at self-regulating their own learning. This ability to demonstrate self-regulation awareness is connected to improved performance; in other words, students who are more strategic learners will perform better than non-strategic learners (see Berkeley & Riccomini 2013; Garner & Alexander, 1989; Pressley & Ghatala, 1990).

From a teaching and learning perspective, this finding has important implications for teachers. A major responsibility of educators is to improve student performance, it is central to their effectiveness as a teacher that they properly match students learning needs to activities or accommodations in this case. This idea of an appropriate match was also evident in the quantitative aspect of this project (see Smith & Riccomini, 2013) where the overall findings demonstrated a positive impact on student performance, but it also demonstrated that not all students benefited from the use of the headphones. A main recommendation from the larger empirical study was to determine who might benefit

from the use of the headphones. The findings from this qualitative inquiry further extends the importance of this determination [of who might benefit] being made in a systematic way by the teacher and not necessarily by allowing the student to make the determination (i.e., choice).

References

Berkeley, S., & Riccomini, P. J. (2013). QRAC-the-code: A comprehension monitoring strategy for middle school social studies textbooks. *Journal of Learning Disabilities*, *46*, 154-165. doi:10.1177/0022219411409412.

Boman, E. (2004). The effects of noise and gender on children's episodic and semantic memory. *Scandinavian Journal of Psychology, 45*, 407-416.

British Institute of Learning Disabilities (2017). *Information about learning disabilities.* Retrieved from http://www.bild.org.uk/resources/faqs/#How-many-people-have-learning-disabilities.

Center for Applied Special Technology. (2009). Universal design for learning guidelines (Version 1.0). Retrieved from http://www.cast.org/udl/index.html.

Creswell, J. W., & Clark, V. L. P. (2007). *Designing and conducting mixed methods research.* Thousand Oaks, CA: SAGE

Dockrell, J. E., & Shield, B. M. (2006). Acoustical barriers in classrooms: The impact of noise on performance in the classroom. *British Educational Research Journal, 32*(3), 509-525.

Elliott, E. M., Bhagat, S. P., Lynn, S. D. (2007). Can children with (central) auditory processing disorders ignore irrelevant sounds? *Research in Developmental Disabilities, 28*, 506-517.

Erten, O., & Savage, R.S. (2012). Moving forward in inclusive education research. International *Journal of Inclusive Education, 16*, 221-233.

Fosnaric, S., & Planinsec, J. (2008). Prediction of work efficiency in early adolescence under the effects of noise. *Adolescence, 43*, 165-175.

Furnham, A., & Strbac, L. (2002). Music is as distracting as noise: The differential distraction of background music and noise on the cognitive test performance of introverts and extraverts. *Ergonomics, 45*, 203-217.

Garner, R., & Alexander, P. A. (1989). Metacognition: Answered and unanswered questions.
Educational Psychologists, 24, 143-158.

Gumenyuk, V., Korzyukov, O., Alho, K., Escera, C., & Naatanen, R. (2004). Effects of auditory distraction on electrophysiological brain activity and performance in children aged 8-13 years. *Psychophysiology, 41*, 30-36.

Harmon, F. L. (1933). The effects of noise upon certain psychological and physiological processes. *Archives of Psychology, 147*, 3-81.

Hygge, S. (2003). Classroom experiments on the effects of different noise sources and sound levels on long-term recall and recognition in children. *Applied Cognitive Psychology, 17*, 895-914.

Hygge, S., Evans, G. W., & Bullinger, M. (2002). A prospective study of some effects of aircraft noise on cognitive performance in school children. *Psychological Science,*

13, 469-474.
Igo, L. B., Riccomini, P. J., Bruner, R. J., & Pope, G. G. (2006). How should middle-school students with LD approach online note taking? A mixed-methods study. *Learning Disability Quarterly, 29*, 89-100.
Individuals with Disabilities Education Improvement Act, H.R. 1350, 108th Congress (2004).
Jamieson, D. G., Kranic, G., Yu, K., & Hodgetts, W. E. (2004). Speech intelligibility of young school-aged children in the presence of real-life classroom noise. *Journal of the American Academy of Audiology, 15,* 508-517.
Kettler, R. J. (2012). Testing accommodations: Theory and research to inform practice. *International Journal of Disability, Development and Education, 59,* 53-66.
doi: 10.1080/1034912X.2012.654952.
Laird, D. A. (1927). The measurement of the effects of noise upon working efficiency. *Journal of Industrial Hygiene, 9*, 43.
Laird, D. A. (1929). Experiments on the physiological cost of noise. *Journal of the National Institute of Industrial Psychology, 4,* 251-58.
Learning Difficulties Australia (2017). *Learning difficulties, disabilities, and dyslexia.* Retrieved from https://www.ldaustralia.org/disabilities-and-dyslexia.html.
Lerner, C. S. (2004). "Accommodations" for the learning disabled: A level playing field or affirmative action for elites? *Vanderbilt Law Review, 57*, 1043-1124.
Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. London, United Kingdom: SAGE.
Merriam, S.B. (2002). *Qualitative research in practice.* San Francisco, CA: Jossey-Bass.
Morgan, J. J. B. (1916). The overcoming of distraction, and other resistances. *Archives of Psychology, 35,* 84.
Morgan, J. J. B. (1917). The effects of sound distraction upon memory. *American Journal of Psychology, 28,* 191-208.
Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage Publications, Inc.
National Center for Education Statistics (2015). *Students with Disabilities*. Retrieved from https://nces.ed.gov/fastfacts/display.asp?id=64.
Nelson, P., Kohnert, K., Sabur, S., & Shaw, D. (2005). Classroom noise and children learning through a second language: Double jeopardy? *Language, Speech, and Hearing Services in Schools, 36*, 219-229.
Norlander, T., Moas, L., & Archer, T. (2005). Noise and stress and primary and secondary school children: Noise reduction and increased concentration ability through a short but regular exercise and relaxation program. *School Effectiveness and School Improvement, 16,* 91-99.
Olympus, (2010). *VN-6000 Product Reviews.* Retrieved from http://www.olympus america.com/cpg_section/product.asp?product=1460 on February 16, 2010.
Poyntz, L. (1933). The efficacy of visual and auditory distractions for preschool children. *Child Development, 4*, 55-72.
Pressley, M., & Ghatala, E. S. (1990). Self-regulated learning: Monitoring learning from text. Educational Psychologist, 25, 19-33.
Shield, B. M., & Dockrell, J. E. (2003). The effects of noise on children at school: A review. *Building Acoustics, 10*, 97-116.

Soderlund, G., Sikstrom, S., & Smart, A. (2007). Listen to the noise: Noise is beneficial for cognitive performance in ADHD. *Journal of Child Psychology and Psychiatry, 48,* 840-847.

Smith, G.W., & Riccomini, P.J. (2013). The effect of a noise reducing test accommodation on elementary students with learning disabilities. *Learning Disabilities Research & Practice, 28*(2), 89-95.

Stansfield, S. A., Berglund, B., Clark, C., Lopez-Barrio, I., Fischer, P., Ohrstrom, E. et al. (2005). Aircraft and road traffic noise and children's cognition and health: A cross-national study. *The Lancet, 365,* 1942-1949.

U.S. Department of Education, Office of Special Programs, Individuals with Disabilities Act (IDEA) database, retrieved May 21, 2014, from http://www.ideadata.org/PartBdata.asp. See *Digest of Education Statistics 2013,* table 204.30.

About the Authors

Gregory W. Smith is an Assistant Professor in the Department of Curriculum, Instruction, and Special Education at the University of Southern Mississippi. Dr. Smith earned his Ph.D. in Curriculum & Instruction – Special Education from Clemson University. His research interests include high-incidence disabilities, cognition, memory, and lived experiences.

Audra I. Classen is an Assistant Professor in the Department of Curriculum, Instruction, and Special Education at the University of Southern Mississippi. Dr. Classen graduated from the Special Education program at the University of Kansas. Her research interests and expertise lie in supporting young children's emotional literacy development, instruction design, and preparing educators to use evidence-based practices.

Paul J. Riccomini is an Associate Professor in the Department of Educational Psychology, Counseling, and Special Education at the Pennsylvania State University. His research focus is on effective instructional approaches, strategies, and assessments for students who are low achievers and students with learning disabilities in mathematics.

Robyn R. Brewer is a graduate student in the Board Certified Behavior Analysis (BCBA) program in the Department of Psychology at the University of Southern Mississippi.

Communication in Support of Students with Disabilities Attending Career Technical Education

Christine Powell, Ed.D.

Abstract

This qualitative study investigates information sharing practices between comprehensive high schools and an offsite Career Technical School with a focus on Students With Disabilities (SWD). The case study approach examined how student information is communicated in support of new federal and state policies related to college and career preparedness. Bolman and Deal's Four Frame Model for Organizational Change serves as the theoretical framework. The study participants included Special Education teachers, Career Technical Teachers and Administrators of Curriculum and Instruction. Findings included organizations operate separately, resulting in minimal CTE teacher input in IEP development and implementation; lack of targeted professional development for teachers at both organizations; and lowered expectations of SWD. Implications and suggestions for education leadership to align structures and promote collaboration to facilitate SWD learning are examined.

Keywords: Students with Disabilities, Career Technical Education, CTE, Communication, IEP, Information Sharing, Organization Leadership, Bolman and Deals Leadership Change Model

Communication in Support of Students with Disabilities Attending Career Technical Education

Current education reform policies are responding to labor market needs by accentuating support for academic and vocational training that prepares public school graduates for both college and workplace opportunities (White House Report, 2015; Ravitch & Mathis, 2010). Schools collectively must address all students' needs, especially students with disabilities who will require additional support as new legislation frames how schools will address learning expectations. Educational organizations that share students, particularly Students With Disabilities (SWD), must form an intentional, collaborative relationship between agencies to meet the needs of students and provide accountability to achieve the intentions of legislation.

Two pieces of contemporary legislation, Every Student Succeeds Act (ESSA) (White House Report, 2015), and the Common Core State Standards (CCSS) initiative (Meeder & Suddreth, 2012), include language strongly in support of college and career readiness objectives. These policies are in place to provide educational organizations with a framework to structure their programs to meet the dual objectives of college and career preparedness for their students.

The first policy, ESSA, requires states to align their academic standards with college entrance requirements and to address career technical education in public schools

(Darling-Hammond, Bae, Cook-Harvey, Mercer, Podolsky, & Stosich, 2016). ESSA is an educational plan to ensure students graduating high school are college and career ready and emphasizes high-quality academic standards (White House Report, 2015). ESSA has the support of the Alliance for Excellent Education, a national policy organization working to advocate for high-risk, marginalized students, who are at greater peril of not completing school due to disengagement and lack of achievement (Achieve Inc., 2012). The second initiative, adopted at the state level, is the Common Core State Standards. These standards offer a clear set of academic goals and expectations for students in grades K-12. The standards align with ESSA, "so that many more students than at present can meet requirements of college and career readiness" (Common Core State Standards Initiative, 2010). Forty-two states, the District of Columbia, four territories, and the Department of Defense Education Activity (DoDEA) have adopted the CCSS with the goal of ensuring high school graduates have the skills to succeed in a competitive labor market and are prepared for the global workforce (Mathis, 2010).

Accordingly, education organizations are working to align programs to address the shift in focus to career and college readiness. CTE is delivered through various educational organizations, to include comprehensive high schools, regional career centers, statewide technology institutions, and community colleges (Brand, B., Valent, A., & Browning, 2013), and at each organization where direct teaching and student learning are taking place there is a responsibility and accountability related to student achievement (Elmore, 2000). Understanding how communication between agencies is taking place is needed to address alignment with the intention of informing student needs.

Statement of the Problem

The current shift towards an integrated educational approach focused on college and career readiness requires schools to analyze how they are meeting the needs of students with disabilities (SWD). The current reform agenda means secondary schools still face the challenge of providing SWD access to general education opportunities in both curricula and experiential learning opportunities (Harvey & Koch, 2004). Often CTE is delivered through various educational organizations, so more than one organization is involved in ensuring student achievement. Understanding how comprehensive high schools and career technical schools communicate and share information in support of students with disabilities is a crucial component in assisting and promoting student achievement. With CTE serving a key role in the success of SWD, there is a need to explore current information sharing and communication between sites serving this group of students. Limited research currently addresses how comprehensive high schools and career technical schools communicate to meet the needs of SWD enrolled in CTE. To address this gap in the literature, a multi-case study inclusive of three school sites explored the themes of communication, information sharing, and current practices.

Overview of the Literature

The benefits of special education and general education teacher communication and collaboration are abundant in the literature (Brownell, Ross, Colón, & McCallum, 2005;

Ripley, 1997; Sharpe & Hawes, 2003; Van Garderen, Stormont, & Goel, 2012; Winn & Blanton, 2005). The models typically presented include collaborative consultation, co-teaching, and cooperative teaching; they offer examples of special education teachers and general education teachers working together to meet the needs of SWD in the same educational setting (Van Garderen et al., 2012). However, there exists a lack of confirmation about how communication is occurring between special education teachers at comprehensive high schools and CTE teachers located at off-site career technical schools working with SWD.

In a survey study by Schmalzried (2010), current practices related to communication and dissemination of information concerning SWD between stand-alone CTE centers and high schools participating at these CTE centers. The study found that there was no standard protocol utilized to share information related to SWD, and there was a general lack of understanding of whose obligation it was to share and provide data associated with SWD. A high rate of respondents reported having limited knowledge of how student data was shared. Additionally, many respondents did not hold the belief that regular correspondence occurred between standalone career technical schools and high schools to support SWD.

In another study, Cotton (2000) addressed the nature of the interaction between 527 CTE teachers and various support personnel, including special educators. While the results indicated that interaction among the different groups of support persons was occurring, there was an identified need by CTE teachers that "indicated a strong desire for additional training for working with students with special needs" (p. 37). The highest area of need was in understanding their role and involvement in the special education IEP process for their students.

Furthermore, challenges to the communication process were examined in a study by Casale-Giannola (2011). The qualitative research examined CTE instructors teaching in over ten career path classrooms. The findings indicated that many CTE teachers did understand who to communicate with for information associated with working with SWD. Over half of the respondents did not fully understand the labels associated with special education classifications, and many of the CTE teachers lacked the knowledge of the useful application of support strategies for inclusion of SWD.

Legislative Underpinnings

Several federal mandates underpin the full inclusion of SWD in CTE by explicitly addressing equal access to education. Three legal directives bolster the presence of SWD in career technical education. First, ESSA, supports critical safeguards for students characterized as high-need, as well as underscores, increased academic rigor in line with college and career readiness standards. Second, the Individuals with Disabilities Education Act (IDEA), seeks to provide the needed services and accommodations to SWD to offer an appropriate educational setting. A third act, the Carl D. Perkins Career and Technical Education Improvement Act (IV), affords SWD equal access to a full range of career and vocational education opportunities (Kornhaber, Griffith & Tyler, 2014). All three federal mandates require a free, appropriate, public education for SWD and appropriate accommodations and modifications to access the curriculum.

Benefits of Career Technical Education Participation

Participation in a CTE program by SWD has shown to have multiple positive outcomes associated with school engagement: (1) the enrollment and successful completion of a career technical education course has proven to be an efficient way of engaging SWD in occupational skill development; (2) enrollment in a CTE program by SWD leads to a decrease in the high school dropout rate for this subgroup; and (3) there is an increase in high school graduation rates when participation in CTE is a factor (Harvey, 2003; Harvey, Cotton & Koch, 2007; Wagner, Newman & Javitz, 2015). Involvement in CTE also has a positive impact on student's post-graduation. The research indicates that SWD who participate in a career technical education (CTE) program significantly increase their opportunities for postsecondary achievement in both academia and employment (Harvey, Cotton, Koch, 2007). Additionally, these students also showed an increased tendency to vie for competitive wage jobs and to work full time after high school (Wagner, Newman & Javitz, 2015; Wehlage & Rutter, 1986).

Roles and Responsibilities

T**he Special education teacher**. Teacher perceived stress and heavy workload appear to be recurring refrains in studies of special education teachers (Brownell et al., 1999; Mastropieri, 2001). One can speculate that adding any more tasks to this existing workload would be resisted, particularly ones that require spending time to figure out a process, or that are not a requirement of the organization. This information contributed to an understanding of possible teacher attitudes that influenced the overall findings.

The role of the CTE teacher. The role of the CTE teacher is critically important in this study because he/she is providing practical experience that would facilitate employment for individual students who take these classes. Wonacott (2001) identified two key job responsibilities. First, CTE teachers must provide direct instruction to SWD in the classroom. CTE teachers are unique as they instruct students in work-based activities as part of the instructional component of the course. Secondly, CTE teachers provide unique information on student progress toward IEP goals, information on the needed supports to increase access in a vocational curriculum, and can serve as the career component in the IEP transition process (Wonacott, 2001). Accordingly, bringing the two teachers together in a timely manner to discuss the collective interest and subsequent accountability of a student they have in common is best practice and in agreement with the law of IDEA 1997 (Menlove, Hudson, & Suter, 1999). The law calls for at least one of the student's general education teachers to be present at the IEP meeting if the student participates in a general education class.

Teacher Perceptions

A quantitative study conducted in Utah by Menlove et al. (1999) surveyed 123 teachers in both general education and special education in grades K-12 to rate their level of satisfaction with the IEP process. The results show general education teachers were least likely to be satisfied with the IEP process overall. General education teachers also reported feeling it was a misuse of time associated with additional work. Surprisingly,

results showed that most teachers felt additional training in the IEP process would not be helpful. This finding is meaningful as it may be the result of existing stress associated with working with SWD, and the general education teachers' input not being valued in the IEP process. In another study, Liu (2015) also investigated teacher perceptions of the IEP. The findings show a commonality of each teacher expressing concern associated with the implementation of accommodations and modifications in agreement with the IEP into their classroom. The themes of time and increased workload were consistent in both studies, with general education teachers having a mostly negative perception of the IEP and its implementation. Also notable is the negative perception of the secondary school general education teachers regarding the IEP.

Leadership Challenges

The current leadership in the form of program directors, stakeholders, and policymakers in CTE programs face challenges related to a variety of issues and difficulties. Studies by Watba and Farmer (2006) and later by Clark, Farmer, and Welch (2010) utilized program reports to distinguish and classify career technical education issues as understood by the CTE leadership in Pennsylvania. These studies explored what CTE leadership views as current major leadership problems to inform decision-making. The more recent study by Clark et al. (2010) queried 60 CTE administrators. Twelve significant issues emerged, which researchers then grouped into four categories: professional development, leadership, curriculum and instruction, and image and perception. The highest rated issue was that of professional development to provide training for CTE teachers to engage learners and to increase success for SWD. Professional development, direct instruction, as well as CTE image and perception, are current areas of focus for CTE leadership (Schmalzried, 2010).

Purpose of the Study

This study sought to discover the current practices of communication and information sharing occurring between two comprehensive high schools in one Southern California district that send students, including SWD, to one offsite career technical school. The study concentrates on the perceived strengths, problems, and gaps in meeting the needs of SWD at these sites with the intention of providing the necessary support and resources to address their issues and challenges. The following questions facilitated further understanding of communication and information sharing between sites:

Research Question 1: What are the current policies and practices occurring at two comprehensive high schools and an offsite Career Technical School concerning information sharing for students with disabilities who attend both sites?

Research Question 2: How is communication currently taking place between comprehensive high schools and an offsite Career Technical School and who are the participants involved?

Research Question 3: What are the strengths, problems, and gaps identified by staff at comprehensive high schools and an offsite Career Technical School about the needs of students with disabilities and their Individual Education Plans?

Theoretical Framework

Bolman and Deal's Organization Change Model (2002) was the theoretical framework of the study. Using the four frames: political frame, symbolic frame, structural frame, and human resource frame, this model delineates a structured approach to exploring organizational structure, mission statements, and learning objectives. The model permitted scaffolding for understanding and interpreting organizational structures, ideas, and processes that make them dynamic (Knights & McCabe, 2003).

Methodology

This study intended to develop meaning of the constructs involved in organization information sharing and collaboration through qualitative interviews with the participants (Hyett, Kenny, & Dickson-Swift, 2014). A qualitative research design provided an in-depth description, analysis, and explanation of the context and participants (Lee, 1999). A purposive sampling scheme was chosen based on information from Onwuegbuzie & Leech (2007) to make this multi-case study more explicit and to make the "data and explanatory schemes as public and replicable as possible" (Denzin, 1978). The researcher recruited a homogenous group of "information rich" participants whose job responsibilities included working with special education students attending two sites. (Patton, 2002). Participant pool size was based on recommendations from Morse (1994), who suggests interviewing six or more participants when exploring a shared experience. Participants included six special education teachers, three CTE teachers, and three vice principals. The two comprehensive high school sites were in the same Southern California school district, and each school averaged 2,500 full-time equivalent students. This researcher interviewed three special education teachers at each site, and the assistant principal responsible for Curriculum and Instruction. Participants at the career technical school included three teachers, as well as the assistant principal responsible for Curriculum and Instruction. The career technical school served students from both comprehensive high schools. Pseudonyms are used for the schools throughout the study.

Organization of Study

The researcher explored three organizational units in Southern California to include: two comprehensive high schools in the same district and one career technical school. The career technical school offers career technical classes for high school students during the day, and enrollment was available to all students attending both high schools in the study. Structurally, all three organizations functioned as separate systems (Figure 1). They had a similar bureaucratic hierarchy, their mission statements aligned, and there was a common charge of educating some of the same students. All three locations functioned as traditional campuses with students attending classes during the day, and all following similar school calendars. At each of the three educational sites, the overall mission

statements were analogous and had the goal of empowering and preparing students for academic endeavors, and to succeed in the 21st century's competitive global economy by promoting quality instructional opportunities and partnerships. This idea falls squarely in Bolman and Deal's human resource frame in that it examines how the organization's mission is in alignment with human needs.

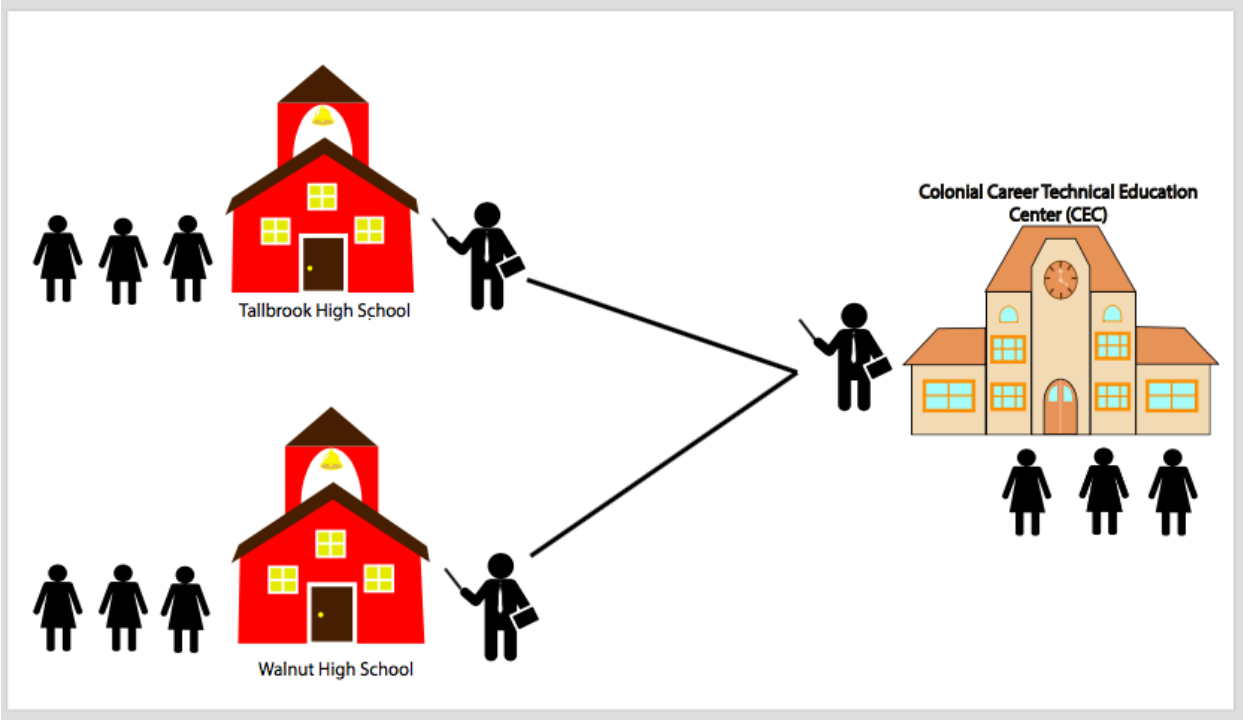

Figure 1. Communication and information sharing related to students with disabilities attending a comprehensive high school, while concurrently attending the Career Technical School.

Results

Overall, finding included organizations operate separately, resulting in minimal CTE teacher input in the Special Education Individual Education Plan (IEP) development and implementation; lack of targeted professional development for teachers at both organizations; and lowered career expectations for SWD organizations operate separately, resulting in minimal teacher input in the Special Education Individual Education Plan (IEP) development.

Discussion

Organizations Operating Separately

The theme of organizations operating autonomously impacted how participants at each organization communicated with one another. The study found that despite laws requiring the sharing of information, and the opinion that communication was important, if not "vital," it seldom occurred promptly or did not happen at all due to a lapse in the information sharing process. The cause of this time lag was attributed to a lack of a formalized process or official practice for communication between organizational sites.

The literature supports that teachers of SWD believe that information sharing in support of this population is important, but it can be difficult to maintain (Walcott, 2007). In this study, the lack of information exchange among teachers was underpinned by several contributing factors: (a) the absence of a shared system between organizations impeding the tracking of student attendance, grades, and behavior in real time, (b) there was a lack of published and disseminated teacher contact information; and (c) the current process for obtaining student information was time-consuming and inconvenient for teachers. These issues impact the process a teacher will need to go through to engage in the information sharing process. The literature review confirms that Special Education teachers feel overwhelmed by the increasing demands of working with SWD and special education paperwork (Brownell, Miller & Smith, 1999; Mastropieri, 2001). Although there were a few instances of Special Education teachers and CTE teachers communicating on behalf of a student, "convenience" was mentioned as a reason for communication not occurring more often.

Disjointed Communication

The second research question addressed what communication was currently taking place between comprehensive high schools and one regional Career Technical School and who are the participants involved. The information showed that interaction between sites on behalf of SWD is occurring, although the degree to which it is happening is dependent upon the role of the participant; administrators stated there was more communication occurring than the teacher participants reported. The bulk of information sharing took place between school counselors and CTE registration support staff as part of the enrollment process when SWD were registered in career technical courses. Teacher participants at each organization had uncertainty in knowing the specific student paperwork shared between sites.

Best practices require that the information shared on behalf of SWD attending other organizations be the most up to date and informative documentation. This information serves to notify teachers they are working with SWD, assist them in preparing for any modifications in the curriculum and make them aware of required accommodations needed by SWD per their Individualized Education Plan (IEP). The literature supports that it is the responsibility of the CTE teacher to provide direct instruction to SWD in the classroom. Additionally, CTE teachers are responsible for providing information on student progress toward IEP goals, including the needed supports and accommodations utilized by the SWD in CTE, as well as be an educational team member in the IEP process (Wonacott, 2001). These responsibilities are substantial, especially given the study's findings that student information is arriving late to the Career Technical School site, routinely after classes have already started. Missing paperwork is at the core of the communication process. CTE teachers were often left to speculate about students' learning differences when they arrive in a CTE class with no paperwork identifying them as students receiving special education services. A lack of timely information translates into losing valuable time in the learning process.

The weight of the above issue is compounded by the study's findings and supported by the research indicating that CTE teachers lack proper training in educational pedagogy and teaching methodologies (Cotton, 2000; Dortch, 2012; Ruhland & Bremer, 2003). In this study, CTE teachers had positive attitudinal responses related to working with SWD despite operating in an educational capacity without necessary information and proper training.

Interestingly, communication between special education teachers and CTE teachers was negligible after the enrollment process of students at the Career Technical School. There existed a lack of understanding regarding whose duty it was to share and provide data related to students with disabilities, revealing a structural breakdown. If a problem occurred or information was needed, most teachers at the sites sought out counselors or administrative office staff to assist in tracking down the information or responsible party. When teachers did try to make contact to find out student information, participant responses illuminated an additional limiting factor in communication; the narrow funnel of transference of information through the high school counseling offices. Gaps were identified in the overall communication process being centered on counselors at the comprehensive high schools as they currently serve as the conduits between organizational sites. This shortcoming means the established communication process was not inclusive and left out key individuals who can assist in addressing student needs. The counselors were the nexus for information sharing between sites almost out of necessity, as there was also a lack of shared information in the form of a teacher contact list at any site to facilitate open communication between teachers. Most teachers at the different organizations had never met face to face, and in many instances, had never talked on the phone or corresponded through email. Research by Schmalzried, 2010, supports the need for concern if communication and information sharing is not taking place in support of SWD. This concern is even greater for students attending an educational organization

outside their high school setting, as communication and information sharing is a way of addressing student's educational needs and informing the IEP (Schmalzried, 2010).

Meeting the Needs of SWD

The third research question explored the strengths, problems, and gaps in the communication process identified by staff at comprehensive high schools and a regional career technical school to inform the education process. Findings included a lack of understanding among participants what information is shared between sites to inform the teachers of a student's needs. Additionally, the student information that is shared by the comprehensive school sites is not making it to the Career Technical School promptly, and this was a chief complaint echoed by all Career Technical School participants in the study. Additionally, a lack of CTE teacher involvement in the IEP process was a problem area noted by study members at each organization. Bringing teachers together to discuss the collective interest and subsequent accountability of a student they have in common is best practice and in agreement with the law of IDEA '97 (Menlove, 1999).

Furthermore, a lack of professional training was a critical issue for teachers in the study. Preparing CTE teachers to work with SWD and understand their diverse learning needs should be a component in all CTE certification programs (Harvey, 1999), yet it was not happening to a satisfactory degree. CTE teachers in the study stated classroom behavior was one of the reasons they sought out special education teacher input. Special education teachers indicated a lack of knowledge on CTE course requirements, rigor, and curriculum. An interesting finding was that no special education teacher participant noted that additional training or professional development was needed for him/her to understand what was required of SWD in these courses. This response contradicted what several special education participants said about not knowing the rigor and requirements of many CTE courses. The Human Resource Frame of Bolman and Deal's Model (2002), emphasizes human involvement as a primary catalyst for organizational effectiveness.

Key Recommendations

The following three steps are suggested for leadership to begin to address the communication chasm. The lack of formalized policy and practices in the information sharing process is a current educational leadership challenge (Clark et al., 2010). To address this issue, organizational alignment between education systems will take purposeful and determined leadership. Educational leadership from both organizations should work towards supporting SWD across systems in line with current legislation; compare organizational policies and practices with current capabilities; combine available resources; structure and promote best practices in information sharing, and work towards their shared educational mission.

First, the recommendation for school leadership to take in increasing communication in support of SWD is to work collaboratively with other organizations to align current policies and practices. Per Bolman and Deal, this step concentrates on a strategy; a plan that sets measurable goals for increasing communication between organizations by creating and putting into place systems and procedures needed to align organizational

structures. The Bolman and Deal's Organizational Change Model from the orientation of the structural frame assumes that "schools work best when goals and roles are clear and when diverse efforts are tightly coordinated through authority, policies, and rules" (Bolman & Deal, 2010, p. 4). The plan will need to outline a clear structure of functional relationships or connections through which teachers, administrators, and counselors can solicit teacher guidance, input on IEP's, and receive professional development on best teaching practices. Leadership also needs to address responsibilities and provide a framework of rules and regulations that have a tiered level of responsibility to ensure system checks.

The lack of communication currently taking place between organizations is a leadership challenge. Alignment across organizations is not an easy task, but having a similar organizational structure and educational mission makes it less convoluted. The organizations in the study had comparable mission, goals, and objectives that were in harmony with one another and spoke to a shared purpose of preparing students for their futures, yet there was a dearth in communication between sites on behalf of shared SWDs, attending both sites. Remarkably, career technical education leadership has acknowledged gaps in coordinating CTE to meet rigorous scholastic guidelines, staff professional development needs, and providing meaningful educational capacity for all students (Clark, Farmer & Welch, 2010). Participants in the study were candid as to what needed to happen to address the communication disjointedness. Participants' narratives aligned with findings from Schmalzried (2010), indicating a need for additional effort in building up and actualizing more predictable coordination of efforts between CTE and comprehensive high schools. Making communication between sites a priority would require purposeful leadership. In looking at the job descriptions for CTE teachers, and special education teachers there lacked clarity concerning the roles and responsibility for the engagement of these individuals in cooperative and collaborative relationships. By being informed of a communication chasm between organizations, educational administrations can now act on and garner input though strategies that set objectives and coordinate resources.

The second recommendation for leadership to increase communication between organizations serving SWD falls within the Human Resources Frame of Bolman and Deals Four Frame Leadership Model; garnering and promoting the participation of stakeholders. Eliciting the collective knowledge between and amongst CTE teachers, special education teachers, counselors, support personnel, and Vice Principal Administrators at each organization to assist in coordinating efforts in support of SWD is paramount to student success. Research by Waters, Marzano, & McNulty, (2003) identified leadership practices that directly impacted student achievement, which included increasing communication among staff and stakeholders and establishing order in the form of predictable, structured roles and procedures. Communication problems and gaps require CTE leadership to involve the very stakeholders, the individuals that work directly with SWD, in the analysis of the issues. This supposition is underpinned by Bolman and Deal's (2002) assertion that educators and principals preferred the human resource frame as it accentuates a cooperative ‘family' image; one in which individuals function best in a caring, supportive environment; and one that requires buy-in from

teachers in connecting the communication gap. Utilizing this frame emphasizes individuals within an organization, and sees human buy-in and involvement as the needed factor for effective organizational change. When people are provided opportunities to participate in decision-making actively, this promotes commitment. Conversely, when individuals have no voice in the decision-making process, and their input is not valued, organizations are less likely to have committed and engaged employees.

Professional development was a highlighted area of need in career technical education, specifically in working with SWD (Clark et al., 2010). CTE teachers have stated they need and want to have access to information and to understand special education law to support working with SWD. There are challenges in establishing autonomy and interdependence; in this case, CTE teachers have too much independence, which manifests itself as a perceived lack of support. By providing training to CTE teachers in working with SWD, teachers will have the resources to meet an expressed need.

Under the direction of leadership, school sites need to adopt a team approach to the goal of supporting SWD attending two organizations with the intent of having a positive impact on student achievement. The team should consist of stakeholders previously mentioned who are involved in the planning, scheduling, enrolling, monitoring and success of SWD. The recommendation for forming a team would include administration from both organizations, the comprehensive school site guidance counselor, administrative support from the career technical school, the special education teacher, the CTE teacher, parents, community liaisons responsible for job placement and students. The recommendation is made that a "teacher on special assignment" (TOSA), head up the team and serve as the liaison between organizations to facilitate open communication amongst stakeholders and optimize organizational alignment.

Bolman and Deal discuss the challenges of moving separate organizational structures in tandem by identifying the common viewpoints of numerous stakeholders as a term known as "conceptual pluralism: a jangling discord of multiple voices" (Bolman and Deal, 1997, p. 11). Under the direction of leadership, school sites need to adopt the team approach mentioned above as a way of supporting SWD attending two organizations. The diversity of group stakeholders provides multiple viewpoints that address "conceptual pluralism," offering a variety of perspectives. The TOSA will be responsible for establishing lines of communication which foster rapport between education professionals working with shared students. This forged partnership, in turn, will increase the opportunity for teacher feedback centered on student achievement. Finding time for participants from both organizations to come together when an IEP is held may still present issues regarding convenience, but this problem can be creatively addressed through teleconferencing, video input or group email. The critical focus is on creating dialog on behalf of the students and centered on meeting their needs, and an increase in communication would be a significant improvement.

The third recommendation for increasing communication is for leadership to work collectively towards coordinating technology and tasks across systems. This task is accomplished by creating district protocols that extend past the walls of the brick and

mortar schools, and that encourage and promote the use of technology to inform and support SWD across organizations. Local control funding and Every Student Success Act (ESSA) is permitting states, and local districts increased autonomy, as well as flexibility in setting goals with a focus on improving student achievement. ESSA provides for measuring student success and progress through other indicators besides standardized test scores in math and Language Arts. With the literature supporting the benefits of attendance in career education for SWD, the emphasis on assuring that communication is productively occurring between organizations will have positive outcomes for not only students but also for school accountability purposes. The lines of communication should be open and fluid, allowing for seamless access to student attendance, grades, counselors, and teacher emails. Open lines of communication would require a combined effort from both organizations to design protocols and align systems in support of the shared communication effort. These issues will need leadership to look carefully at coordinating technology and tasks across systems.

Career technical schools and comprehensive schools currently operating in different silos need to make the technology leap and work towards an integrated system between organizations. Per Yang and Maxwell (2011), "Information sharing is considered an important approach to increasing organizational efficiency and performance. With advances in information and communication technology, sharing information across organizations has become more feasible" (p. 164). An initial step in promoting communication may include making teacher contact information more accessible to staff, teachers, and guidance counselors working at each site; starting with the dissemination of a contact list through a shared online server that is regularly updated to keep pace with changes in student's schedules. This step is a small change, but given current technological advances related to informing individuals across organizations, an aligned data system would be a positive move towards organizational alignment.

Limitations

This study was exploratory and looked at communication between three educational sites working with and on behalf of SWD. With the intended purpose of providing a baseline for other districts and educational sites with a similar structure, this material can be informative; however, any broad suppositions cannot be made beyond the boundaries of this study. A limited number of participants were in the study as only selected teachers and administrators operating in specific organizations were asked to participate. This limitation impacted the breadth and depth of feedback, as the researcher did not query additional CTE instructors, special education teachers, and administrators. Further limitations to this study included a strong regional focus, data collection confined to three educational sites, and the utilization of qualitative methodology in the form of personal interviews, which have the highest chance of interview bias (Merriam, 2014).

Conclusion

This study focused on exploring communication and information sharing on behalf of SWD attending two educational organizations in Southern California and may assist

other agencies with similar organizational models in responding to the needs of SWD. The findings from this study are consistent with other research in this field and provide added understanding and insight into what is occurring to support SWD attending two educational organizations as they work to gain career knowledge and skills. The perspectives of the participants in the study aid in an overall understanding of current information sharing practices between organizations, with the goal of increasing support for SWD attending both sites. Applying what was learned in this study and creating pilot protocols that address communication between educational organizations and speak to participants' concerns would be a valuable exploration to undertake.

This study contributed to the existing body of knowledge in the field of communication and information sharing practices between organizations in support of SWD attending more than one site in an educational context. However, broad generalizations need to be made with caution. The study findings suggest several recommendations for district agencies, comprehensive high schools, and local Career Technical Schools. Additional recommendations are also relevant to state policymakers, the Special Education Local Plan Area (SELPA) office, and school boards responsible for ensuring a free appropriate public education to all students with identified disabilities according to the Individuals with Disabilities Education Act PL 94-142 (amended by PL 108-446, 2004).

The relevance of and need for increased communication between educational sites sharing SWD has been established in peer-reviewed research and supported by this study's findings, there is communication, but it is limited and fragmented at best. Schools are accountable for student achievement (Elmore, 2000) and there exist a responsibility and liability for addressing student success. New educational policies and statutes are changing the way education leadership needs to address student achievement in CTE programs. Schools should no longer be operating in silos and should instead utilize reform policies to bolster their accountability measures; this can be done by following models of communication practices which increase CTE involvement in individual education planning for SWD. The research illuminates the need for special education and CTE leadership to address the multiple issues impacting a disjointed system to increase student achievement and providing the supports necessary for career attainment in an increasingly specialized labor market.

References

Achieve Inc. (2012). Common Core State Standards & career and technical education: Bridging the divide between college and career readiness. Washington, DC: Author. Retrieved from http://www.achieve.org/files/CCSS-CTE-BridgingtheDivide.pdf

Bolman, L., & Deal, T. (1997). *Reframing organizations: Artistry, choice, and leadership*. San Francisco: Jossey-Bass.

Bolman, L.G. & Deal, T.E. (2002) *Reframing the path to school leadership: A guide for teachers and principals.* Thousand Oaks, CA: Corwin Press.

Bolman, L. G., & Deal, T. E. (2010). *Reframing the path to school leadership: A guide for teachers and principals*. Thousand Oaks, CA: Corwin. Retrieved from

https://books.google.com/books?id=0LBv4Sg71jMC&printsec=frontcover&dq=Bolman and Deal%E2%80%99s (2010)&hl=en&sa=X&ved=0ahUKEwj4q9HE5JzZAhVL4WMKHQkBDt4Q6AEIKTAA#v=onepage&q=Bolman%20and%20Deal%E2%80%99s%20(2010)&f=false

Brand, B., Valent, A., & Browning, A. (2013). *How career and technical education can help students be college and career ready: A primer.* College and Career Readiness and Success Center.

Brownell, M. T., Miller, D. M., & Smith, S. W. (1999). Factors that predict teachers staying in, leaving or transferring from the special education classroom, *Exceptional Children*, 65, 45–51.

Carl D. Perkins Vocational and Technical Education Improvement Act of 2006. *Pub L*, (109-270), 120. Retrieved from https://www.congress.gov/109/plaws/publ270/PLAW-109publ270.pdf

Casale-Giannola, D. (2011). Inclusion in CTE-What works and what needs fixin'. *Tech Directions*, *70*(10), 21-23.

Clark, R. W., Farmer, E. I., Welch, S. M. (2010). An examination of leadership issues facing Pennsylvania career and technical administrators. *Career & Technical Education Research, 35*, 47-62. Clark, R., Farmer, E., & Welch, S. (2010). An examination of leadership issues facing Pennsylvania career and technical administrators. *Career and Technical Education Research*, *35*(1), 47-62. https://doi.org/10.5328/cter35.104

Common Core State Standards Initiative. (2010). Common Core State Standards for English Language arts & literacy in history/social studies, science, and technical subjects. Retrieved from http://www.corestandards.org/assets/CCSSI_ELA%20Standards.pdf Google Scholar

Cotton, S. E. (2000). Professional development needs assessment for secondary vocational and technical education teachers related to students with special needs. Academic Exchange Quarterly, 4(2), 33–40.

Darling-Hammond, L., Bae, S., Cook-Harvey, C.M., Lam, L., Mercer, C., Podolsky, A., & Stosich, E.L. (2016). *Pathways to new accountability through the Every Student Succeeds Act*. Palo Alto, CA: Learning Policy Institute and the Stanford Center for Opportunity Policy in Education.

Denzin, N. K. (1978). *The research act: A theoretical orientation to sociological methods*. New York, NY: McGraw-Hill.

Dortch, C. (2012). Carl D. Perkins Career and Technical Education Act of 2006: implementation issues. Washington, DC: Congressional Research Service. Retrieved from https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Dortch%2C+C.+%282012%29.+Carl+D.+Perkins+career+and+technical+education+act+of+2006%3A+implementation+issues.&btnG=

Elmore, R. (2000). *Building a new structure for school leadership*. Washington, DC: The Albert Shanker Institute.

Every Student Succeeds Act (ESSA. (2015). Retrieved from https://www.ed.gov/essa?src=ftFinch, C. R., & Crunkilton, J. R.

(1992). *Curriculum development in vocational and technical education: Planning, content and implementation* (5th ed.). Boston: Allyn and Bacon.
Haber, G. D., & Sutherland, L. (2008). The four A's of managing the placement and service of students with disabilities in the CTE classroom. *Journal for Vocational Special Needs Education, 30,* 4-8.
Harvey, M. W. (1999). "Perceptions of vocational special needs: Concerns and comparisons from Area Vocational Technical Center and comprehensive highs school educators." *Workforce Education Forum, 26*(1), 40-57.
Harvey, M. (2003). Employment opportunities and enrollment patterns of students with disabilities in CTE: The Pennsylvania perspective. *Workforce Education Forum, 30*(1), 1-21.
Harvey, M. W., Cotton, S. E., & Koch, K. R. (2007). Indiana secondary CTE instructors' perceptions of program expectations, modifications, accommodations, and postsecondary outcomes for students with disabilities. *Journal for Vocational Special Needs Education*, *29*(2), 16-32.
Harvey, M. W., & Koch, K. R. (2004). No Child Left Behind: Policymakers need to reconsider secondary career and technical education for students with special needs. *Workforce Education Forum,* 31, 1-17.
How career and technical education can help students be college and career ready: A primer. (2013, March). Retrieved from http://www.aypf.org/wp-content/uploads/2013/04/CCRS-CTE-Primer-2013.pdf
Hyett, N., Kenny, A., & Dickson-Swift, V. (2014). Methodology or method? A critical review of qualitative case study reports. International journal of qualitative studies on health and well-being, 9(1), 23606.Individuals with Disabilities Education Improvement Act of 2006, Pub. L. 108-446, 20 U.S.C. 1400.et seq. (2006). Retrieved from https://sites.ed.gov/idea/statuteregulations/
Kornhaber, M. L., Griffith, K., & Tyler, A. (2014). It's not education by zip code anymore--but what is it? Conceptions of equity under the Common Core. *Education Policy Analysis Archives*, *22*(4).
Knights, D., & McCabe, D. (2003). Governing through teamwork: Reconstituting subjectivity in a call centre. *Journal of Management Studies*, *40*(7), 1587-1619. doi:10.1111/1467-6486.00393
Kraska, M. F. (1996). Trade and Industrial Teachers' Knowledge Related to Special Populations. *Journal of Industrial Teacher Education*, *33*(2), 47-59.
Lee, T. W. (1999). *Using qualitative methods in organizational research*. Sage. Retrieved from: https://books.google.com/books?hl=en&lr=&id=ipPUy90VHfgC&oi=fnd&pg=PR13&dq=Lee,+T.+W.+(1999).%C2%A0Using+qualitative+methods+in+organizational+research.+Sage.&ots=o_pBnboid5&sig=zBv00DLsAaM9K69exgmnwCamMGQ#v=onepage&q&f=false
Mastropieri, M. A. (2001). Is the glass half full or half empty? Challenges encountered by first-year special education teachers. *The Journal of Special Education, 35*(2), 66–74.
Mathis, W. J. (2010). The "Common Core" standards initiative: An effective reform tool? Boulder, CO: National Educational Policy Center. Retrieved from http://epicpolicy.org/publication/common-core-standards Google Scholar

Meeder, H., & Suddreth, T. (2012). Common Core State Standards & career and technical education: bridging the divide between college and career readiness. *Achieve, Inc.* Retrieved from https://www.achieve.org/files/CCSS-CTE-BridgingtheDivide.pdf

Menlove, R. R. (1999). Individualized education program (IEP) team member satisfaction with the IEP development process for students with disabilities. Unpublished doctoral dissertation, Utah State University, Logan.

Merriam, S. B. (2009). Qualitative research: A guide to design and implementation. San Francisco, CA: Jossey-Bass.

Morse, J. M. (Ed.). (1994). *Critical issues in qualitative research methods*. Sage.

Morse, J., & "Think Tank" Symposium (1992.11. Oakland, Calif.). (1999). *Critical issues in qualitative research methods*. Thousand Oaks, Calif.: Sage

Onwuegbuzie, A. J., & Leech, N. L. (2007). Sampling designs in qualitative research: Making the sampling process more public. *Qualitative Report*, *12*(2), 238-254.

Patton, M. Q. (1990). *Qualitative evaluation and research methods.* SAGE Publications, Inc. Retrieved from: http://psycnet.apa.org/record/1990-97369-000

Ravitch, D., & Mathis, W. J. (2010). A review of college-and career-ready students. *The Obama education blueprint: Researchers examine the evidence*, 1-11. Retrieved from: http://nepc.colorado.edu/files/Blueprint-College%20and%20Career_0.pdf

Ruhland, S., & Bremer, C. (2004). Perceptions of traditionally and alternatively certified career and technical education teachers. [Electronic Version]. *Journal of Vocational Education Research, 28*(3), 285-302.

Schmalzried, J. E. (2010). Special education and career and technical education collaboration and communication: Process, practice, and perception (Doctoral dissertation, Ball State University).

Schmalzried, J. E., & Harvey, M. W. (2014). Perceptions of special education and career and technical education collaboration and communication. *Career Development and Transition for Exceptional Individuals, 37*(2), 84-96.

Wagner, M. M., Newman, L. A., & Javitz, H. S. (2015). The benefits of high school career and technical education (CTE) for youth with learning disabilities. *Journal of learning disabilities*. Retrieved from: http://journals.sagepub.com/doi/abs/10.1177/0022219415574774

Wagner, M., Newman, L., Javitz, H. (2015). The benefits of high school career and technical education (CTE) for youth with learning disabilities. *Journal of Learning Disabilities*. Retrieved from: http://journals.sagepub.com/doi/abs/10.1177/0022219415574774

Wahlage, G., Rutter, R. (1986). Evaluation of model program for at-risk students. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA Retrieved from: https://scholar.google.com/scholar_lookup?hl=en&publication_year=1986&pages=13&issue=36&author=G.+Wahlage&author=R.+Rutter&title=Evaluation+of+model+program+for+at-risk+students

Walcott, W. H. (2007). Knowledge, competence and communication: Chomsky, Freire, Searle, and communicative language teaching. Montreal, Canada: Black Rose Books.

Watba, U., & Farmer, E. I. (2006). *Job tasks performed by career preparation systems administrators: Implications for leadership development* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses. (UMI No. 3246328)

Waters, T., Marzano, R. J., & McNulty, B. (2003). Balanced leadership: What 30 years of research tells us about the effect of leadership on student achievement. Aurora, CO: Mid-continent Research for Education and Learning.

White House Report: The Every Student Succeeds Act. (2015). Retrieved from https://www.whitehouse.gov/the-press-office/2015/12/10/white-house-report-every-student-succeeds-act.

Wonacott, M. E. (2001a). Leadership development in career and technical education. Eric Digest, 225.

Wonacott, M. E. (2001b). Leadership development in career and technical education. ERIC Clearinghouse on Adult, Career, and Vocational Education, Center on Education and Training for Employment, College of Education, the Ohio State University.

Yang, T. M., & Maxwell, T. A. (2011). Information-sharing in public organizations: A literature review of interpersonal, intra-organizational and inter-organizational success factors. *Government Information Quarterly, 28*(2), 164-175.

Zirkle, C., Parker, R., & McCaslin, N. L. (2005). The changing state of career and technical education leadership development. In J. Gregson & J. Allen (Eds.), Leadership in career and technical education: Beginning the 21st century (pp. 63-94). Columbus, OH: University Council for Workforce and Human Resource Education.

About the Author

Dr. Christine Carrington Powell is a career special educator currently working in Southern California as a high school teacher, teacher trainer, and adjunct professor at California Lutheran University. As a special education practitioner, she works with individuals and organizations on increasing access and equity in educational programs for marginalized populations and individual students. Her focus areas include policy and practice, organizational leadership, and best teaching practices for students served in special education and English Language Development programs.

Strategies for Supporting Students Diagnosed with Autism Spectrum Disorders in STEM Education

Amelia K. Moody, Ph.D.
Dennis S. Kubasko, Ph.D.
Allison R. Walker, Ph.D.

University of North Carolina Wilmington

Abstract

Educators and employers are working together to promote students diagnosed with autism by developing skills related to the STEM fields. Students diagnosed with autism spectrum disorders (ASD) are showing high levels of interest in STEM fields. This paper will review STEM and ASD literature and offer methods for improving student access to education through transition services and using a Universal Design for Learning (UDL) framework in efforts to encourage a blend of evidence-based instructional methods and supports for STEM educators working to include students diagnosed with ASD in their classrooms.

Keywords: Autism Spectrum Disorders, STEM education, transition, UDL

Strategies for Supporting Students Diagnosed with Autism Spectrum Disorders in STEM Education

It is critical that educators consider ways to enhance Science, Technology, Engineering and Mathematics (STEM) education for individuals diagnosed with Autism Spectrum Disorders (ASD) who show preference for the field. The publication, Rising Above the Gathering Storm (Committee on Prospering in the Global Economy of the 21st Century (U.S.), & Committee on Science, Engineering, and Public Policy (U.S.), 2007), details an initiative by federal policymakers to develop concrete steps, recommendations and strategies to strengthen efforts in the United States to develop talent to serve the growing science and technology initiatives. The committee developing the report asserted that the United States is falling short in international evaluations and specifically recommended improving STEM education in compulsory K-12 schooling and higher education. Recent efforts to promote research and practice in STEM education have increased. The White House alone has devoted substantial financial resources (2.9 billion dollars) to research based STEM education efforts leading to effective practice (Office of Science and Technology Policy, 2014). STEM education approaches seek to break down the traditional silos that separate the four disciplines and thereby emphasizing the intersection of disciplines leading to interdisciplinary solutions to existing real-world problems (Breiner, Johnson, Harkness, & Koehler, 2012). Broad educational reform efforts include the development of a comprehensive national curriculum for science that reflected the need for an integrated STEM education approach (National Research Council, 2012). This document clearly argues the need for an inclusive curriculum that accentuates the need to reach all student populations.

Occupational fields that benefit from knowledge and practice in STEM education are undergoing rapid growth, and STEM-infused companies around the world are seeking ways to fill essential positions to meet the demands for scientific and technological knowledge (National Research Council, 2011; National Science Board, 2014). Educators are working steadily to prepare their students for enrollment in college programs across the STEM fields (National Research Council, 2012). However, for people with disabilities this career path often ends before program completion due to lack of consistency and predictability in higher education environments (Wei, Yu, Shattuck, McCracken, & Blackorby, 2013). Are we leaving behind a population of students capable of becoming the next Sal Kahn or Steve Jobs? Researchers are asking critical questions about how to educate community members diagnosed with disabilities in the area of STEM in the hope that all students can access employment and realize their full potential. This is specifically true of individuals with Autism Spectrum Disorders (ASDs) due to their unique abilities in STEM disciplines including a need for structure, predictability, and operating systems (Scientific American, 2013).

Literature Review

Why are so many individuals with ASD motivated and engaged with STEM education and integration efforts? Researchers are discovering that individuals diagnosed with ASD enjoy STEM activities because of systematic processing and logic skills (Baron-Cohen, Wheelwright, Burtenshaw, & Hobson, 2007). A recent study examining college enrollment rates indicates that individuals with ASD are increasingly choosing STEM majors when compared to their typically developing peers (Wei, Yu, Shattuck, McCracken, & Blackorby, 2013). As research is still emerging, the explanations as to why students with ASD are drawn to STEM education, currently focuses on how their unique abilities align with the external structure of the scientific inquiry and engineering design process. It is critical to understand both strengths and deficits related to the disorder so educational programs can be developed to support them as many STEM pre-service and in-service educators are woefully underprepared to address the unique needs of the population of students with ASD's in the content area classrooms.

One theory suggests that STEM preferences are related to strengths and weaknesses of the disability (Baron-Cohen, 2009). Social, behavioral, and communication impairments are identified characteristics of students diagnosed with autism. These deficits link to poor social and academic outcomes (e.g., Gest, Sesma, Masten, & Tellegen, 2006). Students have difficulties, engaging and collaborating, staying organized, completing tasks, yet demonstrate specific interests and focus on specific details. Hedges et al. (2014) asserts three themes of challenges that students with ASD experience in high school settings. There are intrinsic inconsistencies inherent to the secondary schooling environment, challenges for students in their interpersonal connections, and knowledge/process breakdowns. Baron-Cohen's (2009) cognitive theories apply to individuals diagnosed with ASD due to their immense behavioral features. The Empathizing–Systemizing (E-S) theory (Baron-Cohen, 2009), expanded from the Theory of Mind (ToM) (Baron-Cohen, 1995), indicates that individuals with ASD have greater

abilities to approach tasks that require thinking and information analysis when compared to social-emotional interactions which may make them viable candidates for the STEM field (Baron-Cohen, 2009). It notes specific deficits in empathy and social skills but also highlights strengths including following rules, questioning, exploring, and structuring systems. Baron-Cohen (2009) notes that some types of systems like collectible, mechanical, numerical, natural, social, and motoric are definite strengths for this population. STEM fields require a broad understanding of mathematical concepts, engineering principles, and scientific processes that directly parallel those desired skills (NGSS, 2013).

While student motivation to pursue STEM content knowledge is high, issues surround completion at the post-secondary level and college enrollment. Wei et al. (2013) completed a longitudinal study examining students with ASD and found they were one of the highest populations choosing STEM degrees, although their enrollment rates (31.95%) were the third lowest when compared to students in other disability categories (*average* = 55.55%). Very few individuals with disabilities are entering college prep programs. They are twice as likely to drop out of school that their typically developing peers and only 35% of people with disabilities maintain full or part time employment (Wagner, Newman, Cameto, Levine, & Garza, 2006). Data on employment rates of people with ASD are even lower, estimating students with ASD enrolled in college were between 0.7% to 1.9% with an 80% incompletion rate (VanBergeijk, Klin, & Volkmar, 2008).

Poor organizational, social, behavioral, and communication skills may serve as barriers to entering and sustaining employment in the work force since these are characteristics associated with the disorder. College and university educators are seeking answers about how to best prepare this population to reach their goals so they can be successful in STEM careers. Specifically, how can we enhance the success of individuals diagnosed with ASD who have above average skills in STEM? In order to answer this question, is important to consider the requirements of STEM programs, autism characteristics, critical skills, transition supports, and evidence-based strategies.

Science, Technology, Engineering, and Mathematics (STEM) Programs

STEM literacy is "the knowledge and understanding of scientific and mathematical concepts and processes required of personal decision making, participation in civic and cultural affairs and economic productivity" (National Research Council, 2011, p. 5). A scientifically literate population would be able to read, understand and value scientific research and mathematical modeling that speaks to, for instance, global climate change or whether or not it is a viable strategy to build harden structures (i.e. jetty's and terminal groins) to reduce erosion on the US coastline. In addition to scientific understanding, problem solving real world solutions require people to think holistically about the problem so they can address complex relationships (Paige, Lloyd, & Chartres, 2008).

As articulated in a student's Individualized Education Plans (IEP), regular education teachers make efforts to provide accommodations and modifications to the discipline

specific curriculum for children with special needs. Yet when general education students are compared with students with special needs, persistent achievement gaps in end of grade/course (EOG/C) test scores remain (Albus, Lazarus, & Thurlow, 2015). There clearly needs to be more of an effort made to prepare our future (and current) educators with strategies and resources to be successful with children in the classroom.

This is specifically true for educators who are serving students with ASD who prefer STEM over other disability categories, as incidence rates climb. It suggests that educators pay specific attention to this population; evidence based instructional supports, and transition supports can allow students to seek and sustain educational opportunities. The U. S. Autism and Asperger Association (2013) reported that a lack of self-identification paired with social, learning, and organizational challenges often affect college success rates. Gobbo and Shmulsky (2014) identified specific areas of deficit for individuals with ASD in the classroom including poor critical thinking skills, anxiety issues, and social skill difficulties. These studies indicate that educators can address barriers to successful college experiences in the K-12 classrooms.

For those students with ASD's that do graduate college, Baron-Cohen (2009) suggest that due to their abilities to think logically and systematically, there is a high propensity of adults with ASD working in STEM related fields. When researchers examine individuals with ASD in STEM and other fields, findings indicate higher levels of autism characteristics (measured using Autism Quotients), than those in other fields (Ruzik, Allison, Chakrabarti, Smith, Musto, Henry, et al., 2015).

Autism Characteristics and Skills Needed for STEM Careers

Hedges et al. (2014) conducted focus group research with 41 participants with ASD, across multiple community colleges. They assert three themes that highlight the challenges of the high school setting for students with ASD. These include: 1) Intrinsic inconsistencies inherent to the secondary schooling environment; 2) Challenges for students in their interpersonal connections; and 3) Knowledge/process breakdowns. We will examine each below.

Intrinsic Inconsistencies in Environment

As students enter secondary and post-secondary environments schedules become more complex, expectations can vary and this can cause discomfort in students with ASD. Hedges et al. (2014) found that differing teacher personalities, expectations, and schedules caused discomfort in individuals seeking consistency. Researchers have found that cognitive flexibility, the ability to switch rapidly between different tasks can be challenging for individuals with ASD (Monsell, 2003). Clear and consistent expectations across collaboration and settings may assist this population in succeeding in the STEM environment.

Furthermore, secondary educational settings are highly dynamic and require planning and organizational skills that are often demanding on students diagnosed with ASD

(Rosenthal et al., 2013). Simple changes to the environment can cause anxiety levels to rise in students who seek sameness.

Interpersonal Connections

Students diagnosed with ASDs often have difficulties engaging in classrooms (Keen, 2009). This may be due to deficits in social, communication, and behavioral skills (Wright & Wright, 2014). STEM programs often have fieldwork or collaborative components, which may increase social anxieties. Strategies to support collaboration and social interactions are one area of need for this population of students.

Knowledge/Process Breakdowns

Researchers describe issues related to deciphering between relevant and irrelevant content (Wainwright-Sharp & Bryson, 1996), attention difficulties (Goldstein, Johnson, & Mineshew, 2001), and challenges with gleaning concepts that are not explicitly taught (Klin, 2000). STEM processes require building on prior knowledge from multiple disciplines, working in collaborative teams to construct meaning, exploring the applications of new knowledge, employing innovative and creative approaches to solving complex challenges and effectively communicating those results to others. This may prove difficult for students with ASDs. Researchers examining memory in individuals with ASD indicate that the completion of intricate tasks is a deficit and suggest the use of explicit strategies as supports (Bowler, Gaigg, & Gardiner, 2010; Cheung, Chan, Sze, Leung, & To, 2010). Students diagnosed with ASD may also experience difficulties completing tasks that require attention to more than one concept (Koegel, Singh, & Koegel, 2010; Ozonoff & Strayer, 2001) and effective communication about the results of those trials. When confronted with these challenges, students will struggle in their efforts to design and conduct experiments, participate in discussions, troubleshoot and redesign a solution and share coherent solutions with their peers.

Shifts in thinking and development of new operations may also prove overwhelming for this population of students since structure, schedules, and repetition can be important (Goldstein et al., 2001). Teachers employing STEM educational strategies often require students to develop a plurality of understandings across multiple disciplines. This can prove challenging to mediate for classroom practitioners. Finally, student behaviors can interfere with learning and involvement in collaborative activities. Ozonoff and Strayer (2001) found that breaking down tasks into smaller steps and ensuring task each one is completed is often problematic. Teachers often employ constructivist and inquiry-based strategies where students are responsible for creating their own meaning from experiential pedagogies in STEM fields and educators need to consider how best to pair evidence-based reform minded strategies with supports so students can engage with the curriculum.

Transition Supports for Students with ASD Entering the STEM Field

Given the overwhelming need to prepare students with ASD for careers in STEM, educators should attend to the ways in which secondary schools are preparing them to pursue majors related to STEM in post-secondary education. Therefore, it is imperative

that the proper transition planning is available to successfully transition from high school to post-secondary education, employment, and independent living. According to the Individuals with Disabilities Education Act of 2004, transition is a requirement for all students with disabilities who turn 16, or younger if deemed appropriate by the Individualized Education Plan (IEP) team. Transition planning is an essential component to the educational programming for students with disabilities because it systematically uses activities and instruction to help students reach their annual goals that are aligned with their strengths, interests, preferences, and needs related to their post-secondary goals in post-secondary education, employment, and independent living. According to the National Technical Assistance Center on Transition, there are 20 identified predictors for post school employment and education, and independent living success (e.g., career awareness, inclusion in the general setting, interagency collaboration, occupational courses, work experience, parental expectations, parental involvement, and program of study, self–advocacy, self-care, social skills, student supports, transition programs, vocational education, and work-study) (National Technical Assistance Center on Transition, n.d.) Incorporating these skills in a high school curriculum can help ensure students' post school success in the STEM field. For example, STEM teachers can dedicate a portion of their curriculum to STEM careers to help strengthen students' career awareness as well as help them understand how their interests and strengths align with a particular career. In addition, teachers can include work study opportunities in the STEM field during high school so that students can have hands on experience with a particular job which will help them determine if the job within their chosen STEM field is right for them.

Deficits of individuals with ASD correlate with some of these indicators which may be a part of the reason that effective transition planning can be difficult to achieve at the secondary level to prepare students with ASD for post-secondary education and employment. For example, poor social skills, and lack of self-advocacy skills can be barriers because they require emphasis on social, communication, and behavioral skills that are discrepancies in this population; however, needed to be successful in post-secondary education and employment settings (Wright, Wright, Diener, & Eaton 2014). Therefore, it is critical that the needs of students with ASD are clearly identified prior to their transition to the employment setting so that they can receive the appropriate support to help them be successful.

Evidence-based Strategies to Support STEM Education

Students with ASDs benefit from several universally designed supports when preparing for STEM related college programs. Universal Design for Learning (UDL) highlights a set of principles that give all individuals equal opportunities to learn through multiple means of representation, expression, and engagement (National Center on UDL, 2014). Concurrently, a Framework for K-12 Education (National Research Council, 2012) asserts, "equity in science education requires that all students are provided with equitable opportunities to learn science and become engaged in science and engineering practices (p.28)."

Educators employing UDL supports in educational and employment settings can increase preparedness, productivity, social, engagement, communication, and behavioral skills in conjunction with evidence-based interventions for students with ASDs. The goal of UDL is to ensure that educators provide students with strategies that can improve learning within a setting versus individualizing education for only a few students. Therefore, educators can apply the UDL framework to STEM education by offering alternate methods for how the material is presented, how understanding is demonstrated, and how motivation is achieved, which can facilitate learning. Moreover, all students can benefit from UDL principles and strategies. For example, visual PowerPoints, speech–to-text software, asynchronous online discussion forums, in real time online interactions, web-based simulations, and video themed resources can help with productivity, understanding, and distance. Students diagnosed with ASDs benefit from hands-on learning opportunities, coaching, modeling, practice, and feedback (Swiezy, Stuart, & Korzekwa, 2008). STEM programs serve as a universal mechanism for engaging and maintaining student attention (NSTA position statement: Students with disabilities, 2004). It has been demonstrated that when engaged in hands-on activities, individual student knowledge (Markowitz, 2004) and motivation (Thompson & Windschitl, 2002) increase. Educators utilizing UDL supports can open connections for students to STEM programs but educators must also consider what individualization is required for students with ASD to be successful.

Research indicates that specific evidence-based strategies can help students, but are often absent in inclusive college classrooms. For example, a typical college student would likely not require conversational prompts for discussions or extended time for task completion. These deficits may be a result of executive functioning deficits in children with ASD (Ozonoff & Strayer, 2001). Executive functioning relates to the ability for individuals to coordinate goal-directed behaviors like shifting attention, planning, and self- monitoring (Ozonoff & Strayer, 2001). Schedules and task lists can improve understanding of expectations and offer structure (Mesibov, Shea, & Shopler, 2005).

Individuals with ASDs benefit from procedures and predictable routines in the classroom by prompting students (Wong & Wong, 2009), offering explicit procedures, and providing consistency (McIntosh, Herman, Sanford, McGraw, & Florence, 2004). For instance, an effective STEM infused classroom should structurally present itself the same way from day-to-day and week-to-week. The first 15 minutes of a 90-minute daily block class could be video infused (i.e. YouTube) and relational to accomplishing the day's objective. Educators should write each day's learning objectives on the board, in the same place, every day offering the learner consistency and predictability. Providing students with conversational prompts can assist them in discussing the main ideas, and allowing all students to respond to the prompts by first journaling their ideas in a notebook. Students can then orally share their responses as requested. Educators can build the next 60 minutes around disciplinary core idea delivery (i.e. PowerPoint or guided notetaking) and scientific and engineering practices (hands-on activities or experiential learning). The final 15 minutes of class should reinforce the concepts through a social skill activity. By easily embedding these supports into each classroom lesson, you encourage understanding and enhance learning.

Priming is another strategy that researchers indicate enhances content knowledge in individuals with ASD. Priming is a way to offer access to materials and procedures before carrying them out (Koegel, Koegel, Frea, & Green-Hopkins, 2003). For example, STEM educators could 'flip the classroom' and offer videos of experiments and materials to students prior to class so they can gain familiarity and improve understanding. It may be advantageous for educators to present a finished product to the students so they can visualize, touch and feel. Students can have input into identifying the science and engineering practices that may present some challenges. Simply drawing attention to items that are most important can assist to clarify relevant details (O'Connor & Klein, 2004).

Special interests are another way to ensure that students with ASDs are engaged in learning and motivated to complete work (Koegel et al., 2010; Mancil & Pearl, 2008; Winter-Messiers, Herr, Wood, Brooks-Gates, Houston, & Tingstad, 2007). STEM educators can use special interests as motivators. For example, if a student enjoys programming a Lego Mindstorm Robot but the assignment does not reflect its inclusion, he/she can have 15 minutes at the end of class upon completion of their work. It is imperative that STEM educators solicit from their students innovative and unique ideas related to their curricular goals and objectives. The value of STEM education is that all ill-structured problems require disciplinary, crosscutting concepts and therefore, present the learner with a multitude of solutions and outcomes. Problem based learning, typical of successful STEM programs, require students to generate unique solutions.

The explicit and transparent efforts to link learning across the STEM disciplines while providing relevant opportunities for students with autism to solve real world problems in generalized contexts does harbor hope for student learning moving forward. Missing from past reform efforts at the K-12 level has been opportunities for children to demonstrate their 'creativity' and their 'innovations' within a relevant context (NGSS Lead States, 2013). Engineering approaches to learning hold possibilities to change the dynamics for children who have traditionally not connected with a curriculum relevant to their situations. But, while engagement in engineering education strategies at the pre-collegiate levels have been rare, there is an increased emphasis among STEM educators to include those principals across grade levels (Katehi, Pearson, & Feder, 2009). Special attention to proven supports and strategies during course development and implementation aligned with emerging best practices in STEM may be the key to later success for these students.

Table 1 outlines to embed into STEM programs to support this growing population of students.

Table 1
Evidence based strategies and supports

Skills	Evidence-Based Strategy	Supports
Preparedness	Priming	Video modeling Demonstrating a tangible finished product/solution, Intentional instructional design
Productivity	Task lists Focused tasks	Continually monitor progress Daily and unit checklists
Social Skills/ Communication supports	Visuals	Social stories/Scripts Students acting out the content Multimedia tools and applications
Engagement	Special interests	Contextually relevant activities Place-based resources Citizen science
Organizational Skills	Visual maps	Graphic organizers Semantic maps Web-based tools
Task Completion	Reminders and deadlines	Deadline or reminder applications Classroom exit tickets Diverse assessment strategies

Evidence-based supports have been rigorously researched and shown to be effective for enhancing learning. Using the UDL framework to design and implement effective instruction for students with ASD's can align to a STEM learning environment (Basham & Marino, 2013). Supports in STEM education are outlined in the next section.

Supports to Promote Preparedness

The imperative for STEM infused learning experiences requires that students engage with ill structured problems crossing a multitude of academic disciplines where active learning takes place. All students are expected to move beyond passive learning and generalized lower order cognitive tasks to contextually relevant problem solving and critical thinking. Organization, understanding, and planning can be challenging for individuals with ASD. The following are evidence based supports that can enhance readiness.

Video Modeling. Research supports the use of video modeling to demonstrate specific behaviors that can be repeated later (Bellini & Akullian, 2007; Delano, 2007; Gelbar, Anderson, McCarthy, & Buggey, 2012). This intervention is implemented in STEM environments by modeling procedures via a video to increase the likelihood that an experiment, equation, or project is accomplished successfully.

Supports for Increasing Productivity. STEM education provides all students with opportunities to explore mathematics and science content in a problem based, inquiry educational environment using technology as a tool for learning. Engineering design draws upon a student's ability to think critically about solutions while generating approaches to solve a problem. To inquire effectively, students with ASD may need supports to increase their productivity on the task. The following are evidence based supports that can enhance productivity.

Task lists/ Focused Tasks. An educator's explicit explanation of tasks can offer students information about what work needs to be done, how many steps are involved, and what order to complete tasks. Task lists break large multi-step activities into small, meaningful and manageable steps. Research on memory, in individuals with ASD, suggests fewer prompts and "free recall" can uncover deficits and complicated, multistep tasks (Bowler, Gaigg, & Gardiner, 2010; Cheung, Chan, Sze, Leung, & To, 2010). Dermot, Gaigg, & Gardiner (2015) found that individuals with ASD perform better on tests that offer explicit tasks. By providing a breakdown of explicit steps, within a task, students with ASD may perform more effectively in STEM environments. STEM teaching and student learning benefit from a curriculum designed around problem based learning that incorporate inquiry based activities allowing there to be variability in student decision making. This may prove troublesome for students with ASD's engaged in an activity where the general directions simply ask student to design Lego Mindstorm robots to move from one location to another and then tap a ball. STEM educators should consider offering activity task lists with specific steps for students to follow when engaging in such an engineering assignment.

Checklists/ Schedules. Checklists can assist students diagnosed with ASD in production by offering them a way to self-regulate. Invariably, when students learn through individual or group inquiry, it can take students different periods of time to complete a

designed task and the learning environment should allow for this differentiation. These STEM infused learning environments encourage students to use trial and error strategies (with many learned failures) requiring a multitude of different approaches to solve the problem. Students with ASD may require a simple checklist that can remind them what task to complete and a schedule can assist in time management (*see* Figure 1.)

Expected time to spend on the task	Activity	Completed (mark with a ✓)
5 minutes	Read the assigned problem and brainstorm possible solutions.	
5 minutes	Design a diagram with written procedures to demonstrate a possible solution.	
10 Minutes	Build a Model or Prototype	
5 minutes	Test the model/prototype, collect data and evaluate results that either verify or refute the original design.	
10 minutes	Redesign the diagram and manipulate any variables used to generate another solution	
5 minutes	Re-test the model/prototype, collect data and evaluate results that either verify or refute the revised design.	
5 minutes	Record and report on a desired solution when reached.	
5 minutes	Demonstrate/share the finished product with your teacher and peers.	
Total: 50 minutes		

Figure 1. Example Schedule and Checklist for Solving an Engineering Problem

Communication/ Social supports

Students diagnosed with ASD often demonstrate deficits in social and communication domains. Let us say the activity in question asks a group of students to design a bottle rocket that when launched will stay aloft for as long as possible. Engineering solutions to problems like this employ STEM infused disciplines that require some debate, some critique and some analysis of ideas. This creative learning process, while iterative and systematic, requires the evidence based argumentation to both defend their ideas as well as highlight any limitations to a design (NGSS Lead States, 2013). Below are effective strategies for supporting student social and communication needs in STEM settings.

Social Stories/scripts. Social stories use visual and auditory input to provide a specific set of guidelines addressing social situations, skills, events, or concepts so individuals with autism understand the who, what, when, where, and why of specific situations (Gray & Garand, 1993). Research suggests that social stories are effective because they help individuals adjust to schedule changes, understand thoughts and feelings, learn problem-solving behaviors, and increase appropriate behaviors (Kuoch & Mirenda, 2003, & Charlop-Christy & Kelso, 2003). Scripts offer directions and rules for conversations (Gray, 2000; Kamps et al., 2002). When engineering a solution to the rocket design, a social story or script might include how to share information about what worked or possible future approaches to programming a rocket (see figure 2). Explicit instructions can provide what and how to state a hypothesis when conducting a scientific experiment but can be adapted for other fields.

Today, I am excited to work on building bottle rockets with my peers. We will design the bottle rockets, do a test run, and then discuss what changes we need to make with when re-designing. I will look at my peers when I talk because they will understand that I am interested in the project. I will:

1. Name one issue I noted in the trial run (e.g., "The rocket did not _____ successfully")
2. Provide one statement about why I think there was an issue (e.g., "I think that the rocket did _____ because of a design flaw").
3. Offer one suggestion for improving the design (e.g., "I think we can _____ ").

If I speak clearly and stay on topic, my friends will understand me more easily. Group experiments can be fun!

Figure 2. Social story for Sharing Information with Peers

Multimedia tools. Multimedia tools offer visual and textual information in multiple formats. Videos and visual supports are used and paired with assistive technology supports such as text-to-speech, where text are read aloud, dictionary functions, so words and definitions can be looked up, and can be tailored for the individual needs of the student. For example, on student may require more visual examples, while others can focus on more text. Integrating technology, whether its assistive technology or technology as a tool for learning content, into STEM infused environments is natural for the design process. Technology should serve as a tool for teaching and learning both content and process.

Promoting Multiple Means of Engagement

Students diagnosed with ASD are often motivated to participate when provided with multiple means of engagement. For instance, it is important to select items of interest when students employ Global Positioning Systems (GPS) receivers to 'hide' and 'seek' interesting objects. Students can choose the navigational clues that best suits their interests in the activity. Below are effective strategies for supporting engagement in students with ASD's.

Special interests. Incorporating a student's special interest can increase motivation to improve academic, social, and behavioral outcomes for students diagnosed with ASD (Koegel et al., 2010; Mancil & Pearl, 2008; Winter-Messiers, Herr, Wood, Brooks-Gates, Houston, & Tingstad, 2007). For example, some individuals with ASD are drawn to technology tools because it includes vivid auditory and visual information (Leham, 1998). Thus, completion of an educational program related to Geocaching on the computer may be preferred over a worksheet, which is not multimodal.

Choice. Choice is an effective way to motivate students with ASD to complete tasks (Koegel, et al., 2010). Allowing for choice can increase engagement and motivation by building on individual strengths (Greenspan, Wieder, & Simons, 1998). One way to encourage choice in assignments is using Tic-Tac-Toe lessons on GPS systems. Special interests can be incorporated through the differentiation of content, process, and product (Bishag, 2011).

Task Completion

Reminders and deadlines can increase representations for students. App-based tools and web-based tools can offer a list of tasks to complete; digital reminders and track time per item (e.g., remember the Milk, etc.). These can also be made using basic pencil and paper methods. List items; build in time to work on tasks, and deadlines.

Summary

As the field of STEM education develops, it is important to understand the strengths and deficits of individuals with ASD. Evidence-based interventions are often utilized in school and employment settings to improve success rates. Consider these interventions

and supports early and focus on them during the transition process so student skills develop over time. Using socialization, behavioral, and educational supports early in schooling is important. Students can hone in on tools and strategies that are specifically helpful to their individual skills so they become more rote for those entering college programs. A thoughtful and purposeful approach to designing Science, Technology, Engineering and Mathematics (STEM) experiences in the UDL context hold special promise for students with ASD's. If individuals diagnosed with ASD are already naturally drawn to STEM activities (Baron-Cohen, Wheelwright, Burtenshaw, & Hobson, 2007) and STEM preferences are linked to strengths and weaknesses related to the disability (Baron-Cohen, 2009), then educators can design, employ and evaluate effective strategies that provide relevant pedagogical opportunities for all their students. By employing research-based strategies in UDL lesson plans, STEM education efforts for all students can be realized. It is important to consider what professional skills students with ASD need to be successful in STEM educational environments to promote their academic achievements. UDL supports can be integral for STEM educators to learn with support from the professionals in special education.

References

Albus, D., Lazarus, S. S., & Thurlow, M. L. (2015). 2012-13 publicly reported assessment results for students with disabilities and ELLs with disabilities (Technical Report 70). Minneapolis, MN: University of Minnesota, National Center on Educational Outcomes.

Baron-Cohen, S. (2009), Autism: The Empathizing–Systemizing (E-S) Theory. Annals of the New York Academy of Sciences, 1156: 68–80. doi:10.1111/j.1749-6632.2009.04467.x

Baron-Cohen S., Wheelwright S., Burtenshaw A., Hobson E. (2007). Mathematical talent is linked to autism. Human Nature, 18, 125–131. doi:10.1007/s12110-007-9014-0

Basham, J. D. and Marino, M. T. (2013). Understanding STEM education and supporting students through universal design for learning. *TEACHING Exceptional Children, 45, (4)*, 8–15.

Bishag, M. (2011). Community helpers' tic-tac-toe project guide. Retrieved from http://freedownloadb.com/pdf/community-helpers-tic-tac-toe-project guide-created-by-mary-bishag-b-6638998.html

Bowler, D. M., Gaigg, S. B., & Gardiner, J. M. (2010). Multiple list learning in adults with autism spectrum disorder: Parallels with frontal lobe damage or further evidence of diminished relational processing? *Journal of Autism and Developmental Disorders*, 40, 179–187. doi:10.1007/s10803-009-0845-x.

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.

Breiner, J. M., Johnson, C. C., Harkness, S. S., & Koehler, C. M. (2012). What is STEM? A discussion about conceptions of STEM in education and partnerships. *School Science and Mathematics, 112(1)*, 3–11.

Charlop-Christy, M. & Kelso, S. (2003). Teaching children with autism conversational speech using a cue card/written script program. *Education and Treatment of Children, 26(2),* 108- 127.

Cheung, M., Chan, A. S., Sze, S. L., Leung, W. W., & To, C. Y. (2010). Verbal memory deficits in relation to organization strategy in high- and low-functioning children. *Research in Autism Spectrum Disorders, 4,* 764–771. doi:10.1016/j.rasd.2010.02.004

Committee on Prospering in the Global Economy of the 21st Century (U.S.), & Committee on Science, Engineering, and Public Policy (U.S.) (2007). *Rising above the gathering storm: Energizing and employing America for a brighter economic future*. Washington, D.C: National Academies Press.

Delano, M. A. (2007). Video modeling interventions for individuals with autism. *Remedial and Special Education, 28,* 33-42.

Dermot, M. B., Gaigg, S. B., & Gardiner, J. M. (2015). Brief Report: The Role of Task Support in the Spatial and Temporal Source Memory of Adults with Autism Spectrum Disorder *Journal of Autism Developmental Disorders, 45(8),* 2613–2617. doi:10.1007/s10803-015-2378-9.

Denning, C. B., & Moody, A. K. (2013). Supporting students with autism spectrum disorders in inclusive settings: Rethinking instruction and design. *Electronic Journal for Inclusive Education, 3 (1).*

Ganz, J. B. (2007). Classroom structuring methods and strategies for children and youth with autism spectrum disorders. Exceptionality, 15(4), 249-260. doi:10.1080/09362830701655816

Gest, S. D., Sesma, A., Masten, A. S., & Tellegen, A. (2006). Childhood peer reputation as a predictor of competence and symptoms 10 years later. *Journal of Abnormal Child Psychology, 34,* 509-526.

Gelbar, N. W., Anderson, C., McCarthy, S., & Buggey, T. (2012). Video self-modeling as an intervention strategy for individuals with autism spectrum disorders. *Psychology in the Schools, 49,* 15-22. doi:10.1002/pits.20628

Gobbo, K., & Shmulsky, S. (2014). Faculty experience with college students with autism spectrum disorders: A qualitative study of challenges and solutions. *Focus on Autism and other Developmental Disorders, 29,* 13-22. doi:10.1177/1088357613504989

Gray, C.A. (2000). The New Social Story Book™. Arlington, TX: Future Horizons.

Gray, C. A., & Garand, J. D. (1993). Social stories: Improving responses of students with autism with accurate social information. *Focus on Autistic Behavior, 8,* 1–10.

Greenspan, S., Wieder, S., & Simons, R. (1998). *The child with special needs*. New York, NY: Perseus.

Goldstein, G., Johnson, C. R., & Minshew, N. J. (2001). Attentional processes in autism. *Journal of Autism and Developmental Disorders, 31,* 433–440

Hedges, S. H., Kirby, A. V., Sreckovic, Melissa A., Kucharczyk, S., & Hume, K. (Fall 2014). "The falling through the cracks": Challenges for high school students with autism spectrum disorder. *High School Journal, 98(1),* 64-82.

U. S. Department of Education. (2010). *Twenty-ninth annual report to Congress on the implementation of the Individuals with Disabilities Education Act*. Retrieved from

http://www2.ed.gov/about/reports/annual/osep/2007/parts-bc/index.html#download

Klin, A. (2000). Attributing social meaning to ambiguous visual stimuli in higher-functioning autism and Asperger syndrome: The Social Attribution Task. *Journal of Child Psychological Psychiatry, 41(7),* 831-46.

Kamps, D., Royer, J., Dugan, E., Kravits, T., Gonzalez-Lopez, A., Garcia, G., Carnazzo, K., Morrison, L., & Kane, L. G. (2002). Peer training to facilitate social interaction for elementary students with autism and their peers. *Exceptional Children, 68(2),* 173-187.

Katehi, L., Pearson, G., & Feder, M. (2009). *Engineering in K-12 education: Understanding the status and improving the prospects*. Washington, DC: The National Academy Press.

Keen, D. (2009). Engagement in children with autism in learning. *Australian Journal of Special Education, 33(2),* 130-140.

Koegel, L., Koegel, R. L., Frea, W., & Green-Hopkins, I. (2003). Priming as a method of coordinating educational services for students with autism. *Language, Speech, and Hearing Services in Schools, 34(3),* 228-235. doi:10.1044/0161-1461(2003/019)

Koegel, L. K., Singh, A. K., & Koegel, R. L. (2010). Improving motivation for academics in children with autism. *Journal of Autism and Developmental Disorders, 40,* 1057-1066. doi:10.1007/s10803-010-0962-6

Kuoch, H. & Mirenda, P. (2003). Social story interventions for young children with autism spectrum disorders. *Focus on Autism and Other Developmental Disabilities, 18,* 219-227.

Lehman, J. (1998). *Toward the use of speech and natural language technology in intervention for a language-disordered population*. Carnegie Melon University. Retrieved from: http://sonify.psych.gatech.edu/~walkerb/classes/assisttech/pdf/Lehman%281998%29.pdf

Lincoln, D. (2013) *Scientific American*, 1, 17.

Mancil, G. R., & Pearl, C. E. (2008). Restricted interests as motivators: Improving academic engagement and outcomes of children on the autism spectrum. *Teaching Exceptional Children Plus, 4(6),* Article 7.

Markowitz, D. G. (2004). Evaluation of the long-term impact of a university high school summer science program on students' interest and perceived abilities in science. *Journal of Science Education and Technology, 13(3).*

McIntosh, K., Herman, K., Sanford, A., McGraw, K., & Florence, K. (2004). Transitions: Techniques for promoting success between lessons. *Teaching Exceptional Children, 37(1),* 32-38.

Mesibov, G., Shea, V., & Schopler, E. (2005). *The TEACCH approach to autism spectrum disorders*. New York, New York: Plenum.

Monsell, S. (2003). Task switching. *Trends in Cognitive Sciences*, 7, 134–140. doi:10.1016/S1364-6613(03)00028-7.

National Governors Association Center for Best Practices, & Council of Chief State School Officers. (2010). Common Core State Standards. Retrieved from www.corestandards.org.

National Research Council (2011). *Successful STEM education: A workshop summary*. A Beatty, Rapporteur. Committee on Highly Successful Schools or Programs for K-12 STEM Education, Board on Science Education and Board on Testing and Assessment. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academic Press.

National Research Council (2012). *A framework for K-12 science education: Practices, crosscutting concepts, and core ideas.* Washington, DC: National Academies Press. National Research Council (2012). *Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century.* Washington, DC: The National Academies Press.

National Science Board. 2014. *Science and Engineering Indicators 2014*. Arlington VA: National Science Foundation (NSB 14-01).

National Technical Assistance Center on Transition. (n.d.) *Predictors by outcome area*. Retrieved from http://www.transitionta.org/postschool

NSTA position statement: Students with disabilities. (2004, August). Retrieved July 13, 2016, from National Science Teachers Association, http://www.nsta.org/about/positions/disabilities.aspx

NGSS Lead States. (2013). *Next Generation Science Standards: For States, By State*s. Washington, DC: The National Academies Press.

O'Connor, I. M., & Klein, P. D. (2004) Exploration of strategies for facilitating the reading comprehension of high-functioning students with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 34(2),* 115-127

Office of Science and Technology Policy (2014, March 24). Progress report on coordinating federal science, technology, engineering, and mathematics (STEM) education. Retrieved from https://www.whitehouse.gov/sites/default/files/microsites/ostp/STEM-ED_FY15_Final.pdf

Ozonoff, S. & Strayer, D. L. (2001). Further Evidence of Intact Working Memory in Autism *Journal of Autism Developmental Disorders, 31*, 257. doi:10.1023/A:1010794902139

Paige, K., Lloyd, D., & Chartres, M. (2008). Moving towards transdisciplinary: An ecological sustainable focus for science and mathematics pre-service education in the primary/middle year. *Asia-Pacific Journal of Teacher Education, 36 (1),* 19-33.

Ruzich, E., Allison, C., Chakrabarti, B., Smith, P., Musto, H., Ring, H., et al. (2015) Sex and STEM Occupation Predict Autism-Spectrum Quotient (AQ) Scores in Half a Million People. *PLoS ONE 10(10).* doi:10.1371/journal.pone.0141229

Roberts, V., & Joiner, R. (2007). Investigating the efficacy of concept mapping with pupils with autistic spectrum disorder. *British Journal of Special Education, 34*,127-135.

Rosenthal, M., Lawson, R., Dixon, E., Wallace, G., Wills, M., Yerys, B., & Kenworthy, L. (2013). Impairments in real-world executive function increase from childhood to adolescence in autism spectrum disorders. *Neuropsychology, 27(1),* 13-18.

Swiezy, N., Stuart, M., & Korzekwa, P. (2008). Bridging for success in autism: training and collaboration across medical, educational, and community systems. *Child*

Adolescent Psychiatry Clinics of North America, 17(4), 907-22, xi. doi:10.1016/j.chc.2008.06.001.

Thompson, J., Windschitl, M., & Braaten, M. (2013). Developing a theory of ambitious early-career teacher practices. *American Education Research Journal, 50(3),* 574–61

VanBergeijk, E., Klin, A. & Volkmar, F. (2008). *Journal of Autism Developmental Disorders 38*, 1359. doi:10.1007/s10803-007-0524-8

Wagner, M., Newman, L., Cameto, R., Garza, N., & Levine, P. (2005).*After high school: A first look at the post school experiences of youth with disabilities*. A report from the National Longitudinal Transition Study-2 (NLTS-2). Menlo Park, CA: SRI International.

Wainwright-Sharp, J. A., & Bryson, S. E. (1996). Visual–spatial orienting in autism. *Journal of Autism and Developmental Disorders, 26*, 423–438.

Wei, X., Yu J. W., Shattuck, P., McCracken, & M., Blackorby, J. (2013). Science, technology, engineering, and mathematics (STEM) participation among college students with an autism spectrum disorder. *The Journal of Special Education, 48(3),* 1539-1546.

Winter-Messiers, M., Herr, C. M., Wood, C. E., Brooks, A. P., Gates, M. M., Houston, T. L., & Tingstad, K. I. (2007). How far can Brian ride the daylight 4449 express? A strength based model of Asperger syndrome based on special interest areas. *Focus on Autism and Other Developmental Disabilities*, *22*(2), 67-74.

Wong, H., & Wong, R. (2009). How to be an effective teacher: The first days of school. Mountain View, CA: Wong Publications

Wright, C. A., Wright, S. D., Diener, M. L., & Eaton, J. (2014). Autism spectrum disorder and the applied collaborative approach: A review of community-based participatory research and participatory action research. *Journal of Autism*, *1*. Retrieved from hoajonline.com/ autism/2054-992X/1/1. doi:10.7243/2054-992X-1-1.

About the Authors

Amelia K. Moody, Ph.D., is an Associate Professor in Early Childhood and Special Education and serves as director of the Center for Assistive Technology at the University of North Carolina Wilmington. She conducts research on special education technology and its role in enhancing communication and engagement in young children diagnosed with disabilities. Dr. Moody serves as a member of the Science, Technology, Engineering, and Mathematics (STEM) Cooperative at the Watson College of Education and offers STEM programs to students diagnosed with Autism Spectrum Disorders (ASD). She served as an applied behavioral analysis instructor, early interventionist, preschool special education teacher, and elementary special education for ten years before entering higher education. She is active in the research community and has published book chapters, research articles, and presented worldwide. Her innovative work in special education technology was recently highlighted by the Center for Technology and Disability and the U. S. Department of Education.

Dennis S. Kubasko, Jr., Ph.D., is an associate professor of science education at the University of North Carolina Wilmington (UNCW). Over the past 15 years he has taught a variety of STEM infused courses in the Watson College of Education such as STEM Leadership in Schools and the secondary science methods course. He emphasizes strategies grounded in inquiry based science instruction, problem based learning, and relevant place-based practice. Dr. Kubasko is best known for building sustainable and healthy working relationships with colleagues across UNCW's College of Arts and Sciences, Wilmington's local informal science settings (i.e. parks, museums), state agencies and regional corporate/business partners. Using Carolina Beach State Park as a classroom, Dr. Kubasko pairs College of Education teacher candidates with Environmental Studies students for an innovative and unique 'Island Ecology for Educators' course every summer. Dr. Kubasko directed UNCW's Center for Education in Science, Technology, Engineering and Mathematics (CESTEM) from 2011 - 2016. He co-directs the UNC Wilmington's Regional Science Olympiad providing STEM infused activities for close to 1000 children from across Southeastern North Carolina. He coordinated and led international field experiences to Belize, Central America (2008-2015) providing an engaged study abroad experience for over 100 university undergraduate and graduate students. Dr. Kubasko taught middle school science and high school Biology in the suburban Philadelphia public schools for 7 years.

Allison R. Walker, Ph.D., is an assistant professor in the Department of Early Childhood, Elementary, Middle, Literacy, and Special Education at the University of North Carolina Wilmington, Wilmington, NC. She has taught a variety of courses related to special education, transition, and effective instructional practices. Dr. Walker's research agenda focuses on the transition of students with high-incidence disabilities into employment, post-secondary education, and independent living with a concentration on diversity in transition, specifically the self-advocacy skills of students with disabilities from minority backgrounds. Dr. Walker was a transition support teacher for several years in Germantown, Maryland where she provided transition services to both the high and low-incidence population of students with disabilities. In addition, she worked as a

transition specialist for George Mason T/TAC where she provided transition services for Region 4 in the state of Virginia. She has also worked with the National Technical Assistance Center on Transition (NTACT) (formally known as the National Secondary Transition Technical Assistance Center) where she helped to develop the Indicator 13 Checklist to ensure that transition plans for students with disabilities ages 16 and older are in compliance with federal guidelines.

Gifting the Ungifted: Disproportionality of Minority Students in Gifted Education

Nicholas Catania, M.Ed.
University of South Florida

Abstract

This paper centers on the topic of gifted education. Namely, the focus of the discussion will be on the underrepresentation of students of color in gifted education, the underachievement of students of color in gifted education, and proportionate and equitable representation in gifted education. This paper examines research in the field over the past twenty years to shed light on the limited presence of high achieving minority students in gifted education. It is imperative that teachers understand this disproportionality in order to overcome the discrimination of the minority population.

Keywords: underrepresentation, disproportionality, equitable, culturally responsive practice (CPR)

Gifting the Ungifted: Disproportionality of Minority Students in Gifted Education

This literature review was conducted in response to the extant literature on the disproportionality of minority students of color in gifted education. After highlighting the underrepresentation of students of color in gifted education, the discussion focuses on the underachievement of students of color in gifted education. Finally, recommendations will be offered for more equitable and proportionate opportunities for students of color to be included and successful in gifted programs.

The Underrepresentation of Students of Color in Gifted Education

African Americans, particularly those who are economically disadvantaged and underachieving, are not provided with equal educational opportunities as described in The Individuals with Disabilities Education Act of 2004 (IDEA). Henfield (2013) states, "On average, no other group in the U.S. is as entrapped by the vicious cycle leading to the abysmal life outcomes (achievement gap, expectation gap, opportunity gap, and so on) than males who are black" (p. 395). Olszewski and Thomson (2010) explain that much of the data on gifted programs suggests minority students, primarily economically disadvantaged African Americans students, are underrepresented in gifted education and overrepresented in special education programs. Furthermore, much of the research suggests current gifted programs are the most segregated programs in our education system in the United States. According to Burley et al. (2010), "…this trend of underrepresentation of African Americans and overrepresentation of Whites in gifted programs was evident in 1976 when data were first collected and has continued to date" (p. 52).

When compiling research for this review, it became evident that there was a scarce amount of current literature related to the disproportionality of gifted minority students (Henfield, 2013). Moreover, the problem is that although the research is interesting and

thought-provoking, most of the current research does not aim to shed light on the disproportionality in gifted education programs (Lee et al., 2010).

Olszewski and Thomson (2010) agree that the achievement gap between minority students and nonminority students of all ages continues to be the biggest problem in education today. A large portion of this stems from the fact that a majority of these students grow up in poor, minority communities. These communities lack the resources and support necessary to bridge the achievement gap. Students considered gifted in these communities are at the highest risk because they typically fall through the cracks (Olszewski and Thomson, 2010). It has been consistently argued that the underrepresentation of minority students in gifted education is directly correlated to the achievement gap (Henfield, 2013). Furthermore, the research states that this underrepresentation in gifted and overrepresentation in special education of minority students completely and without question supports the achievement gap. According to Henfield (2013), researchers Ford and Moore support the notion that high achieving minority students should be included in the achievement gap discussion.

As a result of the persistent underrepresentation of minority students in gifted education, Jacob K. Javits Gifted and Talented Students Education Act of 1988 was passed (Ford, 2010). That legislation provided financial support to state and local agencies to develop and maintain valued gifted programs; the highest priority was to be given to students who were economically disadvantaged, limited English proficient and/or had disabilities or a handicapping condition (Ford, 2010). Research continues to support the notion that students of color are underrepresented in gifted programs.

According to Olszewski and Thomson (2010), students of color are underrepresented by as much as 55% nationally in gifted programs. Although there are many causal theories, much of the research points to concerns around the identification process of gifted students. Very little data exists on this topic, however, most research blames assessment for the issue. Tests are created in a way that does not necessarily support the assessment of students from varying cultures (Ford, 2010). If cultural bias exists within the makeup of the test questions, an accurate portrayal of student abilities is not being collected.

According to Ford (2010), the underrepresentation of minority students in gifted education is due to three paradigms: (1) deficit thinking, (2) colorblind ideology, and (3) white privilege. Deficit thinking stems from the belief that students from varying cultures are inferior to white students. It is the belief that these cultures are substandard and therefore unacceptable. Educators who possess deficit thinking, whether aware or not, ignore the successes and achievements of students of color (Ford, 2010). Colorblindness occurs when educators do not support or promote cultures of diverse students. Ford also notes that whether it is done intentionally or unintentionally, this cultural blindness (as it can also be referred), denies students of colors from many educational opportunities.

Lastly, white privilege occurs when students of color are not provided the advantages that white students receive as a result of their skin color/culture. This is deeply embedded in our culture and can be seen as a form of racism in schools. Dating back to the time of

slavery in this country, white students have been treated far better just because of the color of their skin. White supremacy is a major issue in our educational system and there is a need for equal opportunities for all students.

Another perspective, shared by Henfield et al. (2010), argues that underrepresentation of African American gifted students in particular is due to choice. The research maintains that students of color often feel negative social pressures from peers or internal/ psychological issues stemming from racial identity status. According to findings, African American gifted students may be viewed as traitors to their race and ostracized from their peers (Henfield et al., 2010). These gifted students may be accused of "Acting White" by peers, which can deter them from seeking further gifted education program placement.

Researchers have credited many causes as to this underrepresentation of minority students in gifted programs including the following factors: (a) Definitions of Giftedness, (b) Identification Practices, (c) Educational Issues and Considerations (i.e. Teacher Quality, Teacher Shortages, Financial Inadequacies, etc.), (d) Cultural Differences in Learning, and (e) Parental Influence. With each state creating their own standards as to what it means to be gifted, a student may be gifted in one state and when they move to a new location, may no longer be considered "gifted". Having varying definitions of gifted makes it difficult for teachers to accurately recommend students for the program (Ford, 2010). Ford (2010) also points out that teachers possess biases of their own which may impede their ability to accurately identify a student of color who may show signs of giftedness.

The Underachievement of Students of Color in Gifted Education

According to Olszewski and Thomson (2010), more than half of students in gifted programs have been identified as underachievers. Many factors can be at fault in the identification of underachieving students. Many researchers agree that this depends on how "gifted" and "underachievement" are defined. According to Ford (2010), a gifted underachiever can be defined as a student who has a discrepancy between their achievement on standardized tests and their academic performance. As a result of the varying definitions of these terms, students of color may be impacted in a negative light. The following section discusses different reasons for the underachievement of gifted students of color.

Testing Bias. Students of color may not perform well on standardized or achievement tests, which may be interpreted as not showing effort or that students are incapable of performing well on tests. Minority students often do not perform well on tests because there may be certain cultural or testing biases included. This can cause many to feel anxious (Ford, 2010). In light of the biases that have been found to exist within standardized tests, it is not an accurate measure of the giftedness of students of color. These students are not provided an opportunity that is equal to their peers to perform their best. One test is not going to tell a principal or even a classroom teacher that the student is performing at his or her own best. Not to mention, many young students experience test anxiety on tests of heavy importance (Ford, 2010).

Teacher Preparation. There is a lack of experience for many teachers when it comes to meeting the needs of culturally diverse students. This lack of knowledge and training can impact the teacher's ability to interpret the students understanding due to cultural biases. It has been found that the most popular method of identifying students who are gifted is through teacher recommendations. It is clearly evident that this approach is part of the issue of the underachievement of students of color. Moore et al. (2010) states that as a result in a lack of teacher preparation, general education teachers may not be the most effective sources for identifying gifted learners, particularly those who come from diverse cultures/families. It can be argued that until the cultural diversity knowledge of teachers is increased, gifted students of color will continue in their underachieving academic ways (Moore et al., 2010). When compared to their white peers, students of color often perform poorly on high-stakes tests, receive lower grades on their report cards, and eventually drop out of school. All of these issues, in turn, negatively impact the students' futures and cause them to lag significantly behind their white peers.

Identification Process. Another issue impacting the number of minority students of color in gifted education is the identification procedures amongst the different states. Each state has its own process with different criterion. This can be cause for a child to be considered gifted in one state and upon moving to a new state, fall short of the requirements necessary in that particular state (Henfield, 2013). For example, a student with an IQ score of 116 in one state may be identified as gifted and/or talented; however, a score of 130 or higher is required in another state. Other states identify a gifted and/or talented student without an IQ Score being considered as a factor.

Harradine et al. (2014) conducted a study exploring the impact of a teacher's ability to systematically observe and record the academic strengths of 5-to 9-year olds across multiple domains as they used a tool known as The Teacher's Observation Potential in Students (TOPS). According to the research, without the TOPS tool, teachers would have overlooked the academic potential of 22% of their children of color (approx. 1,750 students) of which 53% were African American boys. This data shows that teachers must be supported and trained to effectively identify gifted students of color. One of the research questions included in this study was, what barriers do teachers perceive as being obstacles to recognizing potential in children of color? The barriers that were accounted for when recognizing strengths in this study included behavior, demographics, no parent advocacy, low expectations of teachers, oral language, and prior achievement. Of these studied, behavior and lack of parent advocacy were the two leading obstacles. This suggests biases, whether intentional or unintentional, exist among teachers. "Three fourths of teachers stated that using the TOPS helped them notice strengths in children of color, poverty, and of linguistic diversity. One fifth reported that it completely changed their observation and recognition approached to their students" (Harradine et al., 2014, p. 32).

Proportionate and Equitable Representation in Gifted Education

According to Burley et al. (2010), recommendations for recruiting and retaining minority students in gifted education programs are essential to solving this problem of disproportionality. Some of these suggestions include the use of valid and reliable

instruments, the collection of multiple types and sources of information, an increase in family involvement, and an increase and refocus of research and literature.

Furthermore, Burley et al. (2010) recommend integrating a multicultural and gifted education curricular framework. Gifted minority students would benefit from programs that infuse multiculturalism throughout the curriculum taught. According to Lee et al. (2010), one way to increase the number of minority students in gifted education would be through the use of accelerated programs. The gifted minority students in his study viewed taking accelerated courses as a positive experience.

> *[Prior research] concluded that: (a) the gifted Black students sampled were not being educated to live in a racially and culturally diverse society (and neither were their White classmates); (b) the curricula did not enhance their racial and cultural identities; and (c) for some gifted African American students, school courses lacked relevance and meaning, thus, they were disinterested and unengaged (Ford, 2005, p.126).*

A recent study by Harradine et al. (2014) found that teachers have certain preconceived biases, whether they know it or not, about the students in their classroom, and these biases can influence how they perceive students' abilities and potentials. This supports the notion of developing and providing professional development and teacher training on culturally responsive teaching strategies. Professional development in this area would provide all students with an opportunity to demonstrate and strengthen their abilities. As Olszewski and Thomson (2010) point out, students who are considered gifted in urban areas typically reside in districts, which lack support and are underfunded. This can lead to students being overlooked or in some cases, the absence of a gifted program altogether. Burley et al. (2010) recommend a multicultural gifted curriculum for minority students in gifted programs that both challenge and encourage African American students' needs and goals. Culturally competent teachers invite social awareness and foster diversity within their classrooms. These teachers model best practices in accepting others and fostering a community of learners who respect cultures that differ from their own. These practices, also termed Culturally Responsive Practice (CPR) aid teachers in developing meaningful relationships with their students from all cultures, especially students of color. A decrease in the negativity toward minorities is expected and respect for all is required (Ford, 2005).

Ford (2010) adds that exemplary teachers or African-American students hold their students to high expectations, develop interpersonal relationships, advocate for students' best interests, and take responsibility for their students' success. Culturally competent teachers are also socially responsive and responsible. Burley et al. (2010) asserts the idea of reaching out to varying communities of diverse populations regardless of its prevalence in their classroom setting. Characteristics of Culturally Responsive Classrooms according to Ford (2010) include: (a) Culturally Responsive Teaching (b) Culturally Responsive Learning Environment (c) Culturally Responsive Curriculum (d) Culturally Responsive Instruction and (e) Culturally Responsive Assessment.

Recommendations from Ford (2010) suggest that curriculum and instruction must move from colorblindness, as mentioned earlier, to culturally responsiveness. Additionally, Ford (2010) believes the achievement gap needs closing, data needs to be examined under multiple lenses (including race, gender and race, income, etc.), early identification, and redefining what it means to be gifted, can support the shift from underrepresentation of minority students to equal opportunity education for all students.

Equally important, according to Moore et al. (2010) and Hughes (2010), is the notion of multicultural mentoring. Mentors bridge the gap for these students and support their ability to handle negative peer pressure and racial identity issues. Through the mentoring process, barriers are broken down allowing students to achieve their fullest potential as students. Mentoring establishes a foundation between mentor and mentee providing mutual benefits as the two work collaboratively to overcome barriers. Hughes (2010) explains that mentors should establish a relationship with their mentee that communicates the whole "we are a team" mentality. Helping students of color understand that they are not in the process alone, but have support from someone from a similar background may be the push needed to help them succeed.

Typically, there are three types of mentoring programs to support the needs of gifted male students of color. These include: (1) educational mentoring, (2) career mentoring, and (3) personal development mentoring. The first has a focus on supporting students in their academic abilities. The second provides students with the skills needed to choose to continue on a career path. Finally, the third promotes youth in times of personal struggle that can be in the form of psychological support, social/emotional support, and/or personal support if students are going through a difficult time inside or outside of school (Moore et al., 2010).

In order for these students to believe they can successfully participate in gifted programs, mentors provide culturally relevant experiences that teach students to face racial barriers and promote positive attitudes and confidence during difficult times. Key attributes of the mentoring relationship include love, commitment and responsibility. In order for this relationship to be effective, mentors must possess all three qualities.

Mentoring opportunities must also occur on a regular basis. Consistency is key. The consistency of support for the students of color promotes the student's expectations, values, and self-identity. Some of the suggestions made by Hughes (2010) to enhance the mentoring relationship include: (a) Social injustice conversations, (b) Shadowing and internships, and (c) Reading books on Blacks who have overcome adversity. "As the mentors focused on how students could be academically successful, the students seemed to take on a new worldview" (Hughes, 2010, p. 59).

In order to gain a complete understanding of the true effect of culturally responsive practices on minority students in gifted education programs, it is necessary to conduct a study that examines all aspects of CRP and how it impacts African American student achievement. The recommendations shared here for desegregating gifted programs are not comprehensive; instead, they offer a starting point as to how to ensure the success of all students. Providing teachers with professional development to support culturally responsive practice, offering a means of mentoring for students of color in gifted education programs, and rethinking the definition of giftedness will begin to ensure the learning and academic success of all students, regardless of race, gender, culture, etc. If these steps are not researched further and implemented, African American students will continue to be underrepresented in gifted education programs throughout the United States. It would be wrong of us to think that this drastic of an issue will mend itself. In order to level the playing field and provide more ethnic and cultural diversity in gifted programs, the aforementioned recommendations must be considered. Burley et al. (2010) said it best, "Perhaps the core problem is not the students, but how theorists, government, and educational agencies define giftedness" (p. 52).

References

Burley-Brak, L., Faye, A., & Deason, C. (2010). African american millenials: "A profile of promise." *Gifted child today*, 33:2, 47-54.

Ford, D. (2005). Integrating multicultural and gifted education: A curricular framework. *Theory into practice*, 44:2, 125-137.

Ford, D. (2010). Culturally responsive classrooms: Affirming culturally different gifted students. *Gifted child today*, 33:1, 50-53.

Ford, D. (2010). Underrepresentation of culturally different students in gifted education: Reflections about current problems and recommendations for the future. *Gifted child today*, 33:3, 31-35.

Harradine, C., Coleman, M., & Winn, D. (2013). Recognizing academic potential in students of color: Findings of u-stars~plus. *Gifted child quarterly*, 58:1, 24-34.

Henfield, M. (2013). Special issue: Meeting the needs of gifted and high-achieving black males in urban schools. *Urban review*, 45, 395-398.

Henfield, M., Washington, A., & Owens, D. (2010). To be or not to be gifted: The choice for a new generation. *Gifted child today*, 33:2, 17-25.

Hughes, R. (2010). Engaging african American males for educational success. *Gifted child quarterly*, 33:2, 55-60.

Lee, S., Olszewski-Kubilius, P., & Peternel, G. (2010). The efficacy of academic acceleration for gifted minority students. *Gifted child quarterly*, 54:3, 189-208.

Moore, J. (2005). Underachievement among gifted students of color: Implications for educators. *Theory into practice*, 44:2, 167-177.

Olszewski-Kublius, P & Thomson, D. (2010). Gifted programming for poor or minority urban students: issues and lessons learned. *Gifted Child Today*, 33:4, 58-64.

About the Author

Nicholas Catania is a current graduate student in the University of South Florida's special education doctoral program. His research interests include the teacher-learner relationship as well as pedagogical practices for meeting the needs of all students. His research has been presented at The Office of Special Education Programs Conference (OSEP), American Association of Colleges for Teacher Education Annual Meeting (AACTE), and Council for Exceptional Children Convention & Expo (CEC).

Prompting with Wearable Technology to Increase Teaching Behaviors of a Preservice Special Education Teacher

Andrew M. Markelz M.Ed.
Jonte C. Taylor Ph.D.
Mary Catherine Scheeler Ph.D.
Paul J. Riccomini Ph.D.
David B. McNaughton Ph.D.

The Pennsylvania State University

Abstract

Classroom management is essential for student related academic and behavioral outcomes. Novice teachers, as well as faculty members, of special education teacher preparation programs report insufficient preparedness in providing meaningful behavioral supports to exceptional learners. With advancements in technology, tactile prompting is a promising modality for teachers to overcome cognitive overload and facilitate more effective practice of classroom management behaviors. We used a multiple-baseline, across behaviors design to assess the effects of prompting with wearable technology (i.e., Apple Watch™) to increase behavior-specific praise, active questioning, and classroom scanning of a preservice special education teacher. Results indicate a functional relation between prompting with wearable technology and targeted increases across multiple behaviors. Behavior-specific praise rates, however, faded synchronously with prompting fades. The participant rated the intervention as a non-intrusive, effective device to increase teaching behaviors. Implications for future research and classroom use are discussed.

Keywords: wearable technology, preservice, teacher training, tactile prompting

Prompting with Wearable Technology to Increase Teaching Behaviors of a Preservice Special Education Teacher

Classroom management is important, and research supports classroom management as essential for positive student related outcomes (Korpershoek, Harms, de Boer, van Kuijk, & Doolaard, 2016) as well as a teacher's sense of well-being (Friedman, 2006). Brophy (2006) defined classroom management as: "Actions taken to create and maintain a learning environment conducive to successful instruction (arranging the physical environment, establishing rules and procedures, maintaining students' attention to lessons and engagement in activities)" (p. 17). Contemporary classroom management practices were substantially influenced by Kounin (1970), whose work shifted classroom management from reactive strategies to preventative strategies. Good management focuses on techniques that elicit student cooperation and involvement thereby preventing problems from happening. Kounin observed that one key feature demonstrated by effective classroom managers was "withitness." Good and Brophy (2008) identified at least three

key behaviors to with-it management: behavior specific praise, active questioning, and classroom scanning.

Behavior-specific praise (BSP) which often operates as a positive reinforcement (Brophy, 1981) is better than general praise. For example, “thank you for raising your hand, Danny,” is more effective than general praise (e.g., “good job”) because it is contingent on a specific, targeted behavior. More than 30 years of research has indicated BSP as an effective management strategy for increasing students’ appropriate behavior in the classroom (Allday et al., 2012; Sutherland, Wehby, & Copeland, 2000).

A second classroom management behavior that conveys withitness is active questioning. Good and Brophy (2008) emphasize the importance of regularly engaging students (i.e., active questioning) as an antecedent strategy of behavior management to reduce drifting, boredom, and potentially undesirable behaviors. Through questioning, a teacher can ensure students are engaged in a lesson. Examples include pausing and asking for a student to repeat what was just said, asking a student to expand on a key point, or simply checking in with a student to see if he has any questions.

Lastly, effective managers let their students know that they are with-it by continuously scanning the classroom and preventing problems before escalation. Whether it is called “active supervision” (Solomon, Klein, Hintze, Cressey, & Peller, 2012) or “visual monitoring” (Conroy, Sutherland, Snyder, & Marsh, 2008), research on classroom scanning documents decreases in disruptive behavior across formal and informal educational settings, such as classrooms (Depry & Sugai, 2002); recess (Lewis, Powers, Kelk, & Newcomer, 2002); and transition time (Colvin, Sugai, Good, & Lee, 1997).

Although research demonstrates that preservice teachers are less proficient at managing classrooms (Emmer & Stough, 2001), training can improve this area (Star & Strickland, 2008). The training, however, should address barriers preventing preservice teachers from implementing effective classroom management behaviors.

Barriers to Effective Classroom Management

The first barrier is cognitive overload. Cognitive overload occurs when an individual is overwhelmed with stimuli which limits their internal cognition capabilities (Sweller, 1989). When an individual is cognitively overloaded, the ability to remember is diminished or simple mistakes occur. For a preservice teacher, pedagogical skills and curricular content may account for all of the cognitive load she can process successfully (Borko & Livingston, 1989). Although the preservice teacher may be reactive to classroom management issues with reprimands and punishments, the many demands of conducting a lesson in a new environment results in the preservice teacher not having the cognitive load to implement proactive, or preventative, classroom management behaviors.

If a preservice teacher is already cognitively overloaded, Heward (2003) contends the natural contingencies of a typical classroom will further discourage preventative strategies and strengthen reactive behaviors. For example, when a child is disrupting the class, the preservice teacher will often reprimand the student resulting in immediate cessation of the disruptive

behavior. The preservice teacher's reprimanding behavior has been negatively reinforced. By contrast, if praise is delivered to a student for working on-task, the student will continue to work on-task and there is no immediate consequence to reinforce the preservice teacher's praising behavior. Overtime, noticeable increases in on-task behavior may reinforce the preservice teacher's praising behavior, yet the latency of effects often leads teachers to reprimand rather than praise (Nelson & Roberts, 2000).

The second barrier is insufficient training. Not only do novice teachers feel underprepared to address their students' behavioral characteristics (Oliver & Reschly, 2007), a study that surveyed universities with teacher preparation programs found that faculty members reported their graduates had not mastered skills related to managing students' challenging behaviors (Hemmeter, Santos, & Ostrosky, 2008). The study cited a lack of opportunities to implement practices in field placements and not enough room in their curriculum as potential causes of this lack of skill mastery. Without adequate practice in training, preservice teachers may not sufficiently acquire the skills to generalize into their classrooms as novice teachers (Scheeler, Budin, & Markelz, 2016).

To achieve mastery of a teaching behavior, it is essential to develop a set of component skills, practice those component skills to where they can be combined fluently and used to a degree of automaticity, then know when and where to apply the targeted behavior appropriately (Ambrose, Bridges, DiPietro, & Norman, 2010). Essential in the progression towards mastery are opportunities to practice. Brophy (1986) concluded that developing knowledge and skills to automaticity and errorless performance requires a great deal of practice. Additional research identifies skill proficiency and skill maintenance as two major purposes of practice (Archer & Hughes, 2011). Key features of effective practice include focusing on a specific goal or criterion of performance, targeting an appropriate level of challenge relative to current performance, and being of sufficient quantity and frequency for skills to develop (Ambrose et al., 2010). What can teacher educators do, then, to better prepare effective classroom managers to scan the classroom, deliver BSP, and engage students while overcoming cognitive overload and insufficient practice opportunities?

Technology for Teaching Effective Classroom Management

In a review of literature on interventions to increase behavior-specific praise, Markelz, Scheeler, Taylor, and Riccomini (2016) identified tactile prompting as a promising technology that directly overcomes these barriers. *Tactile prompting* is a term used to describe the use of a device that, when worn, produces a vibratory signal on a time schedule which prompts the user to perform a specific behavior. The device delivering the tactile prompt can be programmed to deliver prompts using a fixed-time prompting schedule, thereby supporting its used during extended periods of practice. Although only two studies were found using tactile prompting to increase teaching behaviors of novice teachers, results indicated a strong functional relation between prompting and increased praise rates (Haydon & Musti-Rao, 2011; McDonald, Reeve, & Sparacio, 2014). Additionally, participants responded at a 100% response rate to prompting, suggesting that tactile prompting is an effective tool for increasing teaching behaviors. Both studies, however, used dated technology (e.g., pager-size devices that were worn on participants' waists) that were only able to provide single vibratory cues; meaning only one behavior (e.g., BSP) was targeted for increase. Current wearable technology (e.g., Apple Watch) allows users to

receive vibratory prompts and visually reference the display, thereby allowing for the potential to practice multiple behaviors. As follows, advancements in technology and limited research on tactile prompting to increase teaching behaviors warrants further investigation.

In summary, at present there is a small but growing evidence for the potential of tactile prompting to overcome cognitive overload and facilitate more effective practice (Markelz, Scheeler, Taylor, & Riccomini, 2016). There is also increased availability of wearable technology that can produce tactile prompting cues (e.g., Apple Watch). The purpose of the current study, therefore, was to determine the effectiveness of prompting with wearable technology to increase three key classroom management behaviors for a special education preservice teacher: BSP, active questioning, and classroom scanning. The two research questions examined were as follows: (1) What are the effects of prompting with wearable technology on a preservice special education teacher's promotion of BSP, active questioning, and classroom scanning? (2) Does a special education preservice teacher find prompting with wearable technology to be acceptable and practical to use in the classroom while teaching?

Method

Participant and Setting

The participant volunteered from a pool of nine preservice teachers in their final semester of student-teaching at a large public university. Eligibility to volunteer for the study was based on the potential participant owning an Apple iPhone5 or later along with the most recent version of iOS software to pair their phone with Apple Watch technology.

The participant was in her final semester and completing her teaching practicum as part of a five-year undergraduate/graduate program. She was graduating with a B.S in Special Education with duel certification as a Reading Specialist and a Master's degree in Curriculum and Instruction. The study was conducted in a sixth-grade resource classroom in a rural school district. The classroom consisted of 14 students diagnosed with learning disabilities and/or emotional and behavioral disabilities. All sessions took place during small-group instruction (15 minute sessions) during which the participant was teaching or reinforcing literacy content. Initially, the participant was providing small-group instruction to three students (two male students with emotional and behavioral disabilities and a female student with a learning disability). Before session ten, however, the classroom schedule and group configurations changed. The remaining ten sessions were conducted with two female students (the previous female student and a new female student also diagnosed with a learning disability). The participant was positioned with her small group at the front of the classroom while the remaining students were in her line of sight sitting at their desks completing independent work. Also present in the classroom was the participant's mentor teacher as well as a paraprofessional.

Dependent Measures

Three teaching behaviors associated with effective classroom management were targeted for increase; delivering BSP, engaging in active questioning, and conducting classroom scanning. *BSP* was operationally defined as positive verbal feedback indicating approval of social or academic behavior. Examples of BSP given by the participant were "Luke, I like how you were listening while Kayla was talking" and "Good job taking your time to write neatly, Caleb." Non-examples would include "Good job" and "Nice work."

In the participant's small group (both group configurations), one particular student (Kayla) was quieter and participated less than other students. The participant agreed to involve Kayla in discussions more by engaging in active questioning. *Active questioning* was operationally defined as having the participant look and say Kayla's name, then ask a question resulting in a response from Kayla. The topography of questions varied, however examples included "Kayla, are you following along?" Kayla would then respond "yes". Another example was "Kayla, what do you think about that?" Kayla would then respond based on the discussion.

Classroom scanning was operationally defined as systematically observing students not in the small group (i.e., at desks doing independent work) from one side of the classroom to the other, then back again. It took the participant approximately 2-3 seconds to systematically scan the classroom.

Social Validity

The participant completed a six-item questionnaire after the study to assess the second dependent measure, perceived ease and usefulness of receiving prompts through wearable technology. The questionnaire was grounded in Rogers' (2010) model of innovation adoption which explains the process of technology diffusion among consumers and included the following open-ended questions: (1) "How easy was it to use and respond to prompting with a smart watch?" (2) "How distracting was prompting with a smart watch?" (3) "What were some difficulties?" (4) "How effective was prompting with a smart watch in increasing your teaching behaviors?" (5) "How likely would you use prompting with a smart watch to increase targeted teaching behaviors in the future?" and (6) "What would you change to make prompting with a smart watch better?"

Procedure

A multiple-baseline, across behaviors design was used to evaluate the effects of independent variable; that is, using wearable technology to increase targeted teaching behaviors. A multiple baseline design is a rigorous scientific methodology relevant for defining research-based educational practices at the individual level (Horner et al., 2005). The What Works Clearinghouse standards for single-case design to meet evidence standards (Kratochwill et al., 2010) were met by: (a) the independent variable was systematically manipulated; (b) outcome variables were measured systematically over time by more than one assessor, and inter-assessor agreement was collected for at least 20% of all sessions across all phases; (c) the study included at least three attempts to demonstrate an intervention effect at three different points in time; and (d) each phase has a minimum of five data points.

Pre-baseline. Three days prior to baseline data collection, the researcher met with the participant to supply the Apple Watch and pair it with her iPhone5. At the time of this study, the Apple Watch Sport 38mm cost $299. The iPhone 5 comes preloaded with the Apple Watch application for simple pairing of phone and watch. The participant received a five-minute tutorial of the functionality of Apple Watch including how to navigate between screens and adjust notification settings. The participant had never used an Apple Watch prior to the study. During the pre-baseline meeting, the teaching behaviors targeted in this study were identified and explained to ensure the participant had the necessary component skills to perform each behavior. The

participant verified her knowledge and accurate delivery of BSP. Active questioning was discussed and a student (Kayla) was identified to target with this behavior. Lastly, the operational definition of classroom scanning was provided and the participant demonstrated her ability to conduct classroom scanning. Including the five-minute tutorial of Apple Watch, the total time for the pre-baseline meeting was 15 minutes.

Baseline. During baseline, the participant wore the Apple Watch during her small group instruction to acclimate to the watch, however, no prompts were delivered. The participant remained in baseline condition until all three targeted behaviors were stable. Stability was determined when variability was no more than 50% from the mean (Alberto & Troutman, 2012). The first behavior (i.e., BSP) was randomly selected to enter intervention after at least five data points in baseline.

Intervention. Based on the duration of sessions (15 minutes) and previous research suggesting 6 to 10 praise statements per 15 minutes results in student behavior change (Sutherland, Wehby, & Yoder, 2002), ten prompts per session on a variable interval schedule were used. The researcher sat in a discrete location of the classroom and sent prompts via text messages. For behavior-specific praise, "BSP" was texted to the Apple Watch that the participant was wearing. Every time she received a prompt (i.e., text message from the researcher), the watch would vibrate and illuminate the screen with the message "BSP". Each prompt was a cue for the participant to provide BSP to a member of her small group. The student and behavior praised was determined by the participant in that moment. An accurate response to a prompt was recorded if the participant correctly delivered BSP and delivered the praise within five seconds of receiving the prompt. A permanent product of text messages ensured that ten prompts were sent per session and the researcher collected data during each session on the participant's response rates and delivery accuracy. Every session was also video recorded for reliability analysis.

Mastery criterion was set at an accurate response rate of 8 out of 10 prompts (80%) for three consecutive days. Although an accuracy rate of 90% or higher will indicate high-levels of accurate practice is occurring (Archer & Hughes, 2011), given the variable interval schedule of prompting, it was determined that an opportunity to perform the targeted behavior may not always be appropriate, therefore, a more liberal criterion would be suitable to accommodate these instances. Additionally, no feedback or praise was given to the participant during intervention.

After mastery criterion was met with BSP, the second randomly selected behavior (active questioning) entered intervention. To test the practicality of referencing the visual display of Apple Watch while teaching, during the second phase of intervention, prompting was split between two behaviors. In order to keep the number of prompts constant now that a second behavior was introduced, prompts were split between "BSP" and "engage" with each behavior receiving five prompts on a variable interval schedule within each 15-minute session. The 8 out of 10 mastery criterion was also split between behaviors resulting in mastery criteria of 4 out of 5 prompt responses for each behavior over three consecutive days. As determined in the pre-baseline meeting, Kayla was the targeted student for "engage" (i.e., active questioning) due to her quiet nature. An accurate response to an engage prompt was that the participant asked Kayla a question that resulted in student engagement.

After active questioning and BSP reached mastery criteria the third behavior (classroom scanning) entered intervention. To maintain 10 prompts per session, prompting was split between active questioning and classroom scanning; BSP was no longer prompted. During each session of this phase the participant received five "engage" prompts and five "scan" prompts on a variable interval schedule. Mastery criteria for both behaviors remained at 4 out of 5 prompt responses for three consecutive days.

Maintenance and generalization. Due to time constraints of the study, maintenance was only collected for BSP. Generalization was not collected.

Interobserver agreement. Interobserver agreement (IOA) data were collected on 20% of all phases of the study. A graduate student independently collected reliability data from digital video recordings of sessions. Training for agreement consisted of providing formal definitions of BSP, active questioning, and classroom scanning. The graduate student practiced identifying the teaching behaviors with feedback from the first author using a randomly selected video session. Training continued until the graduate student reached 100% agreement on the frequency and accuracy of BSP, active questioning, and classroom scanning within a session. The first author and graduate student then independently coded sessions for frequency and accuracy of BSP, active questioning, and classroom scanning. Each time a target behavior was delivered by the participant, the time was recorded. Recorded data were then compared and any behavior for which there was overlap within five seconds counted as agreement. Mean agreement was 100% across baseline behaviors. Mean agreement during intervention was 98% for BSP, active questioning, and classroom scanning (range = 94% to 100%).

Treatment integrity data were collected by maintaining a permanent product of the number of text messages sent during each session. Following each session, text message records were checked to ensure ten prompts were delivered, and when prompting was split between behaviors, five prompts were delivered for each behavior. Treatment integrity was 100% across all sessions.

Results

The two research questions examined in this study were as follows: (1) What are the effects of prompting with wearable technology on a preservice special education teacher's BSP, active questioning, and classroom scanning? (2) Does a special education preservice teacher find prompting with wearable technology to be acceptable and practical to use in the classroom while teaching?

Targeted Teaching Behaviors

Figure 1 presents the frequency of targeted teaching behaviors through baseline and intervention. During baseline condition, frequency of behaviors ranged from 0 to 2 (BSP, $M = 0.8$, range = 0 to 2; Active Questioning, $M = 0.4$, range = 0 to 1; Classroom Scanning, $M = 0$). When prompting with wearable technology was introduced in the intervention condition, the frequency of targeted teaching behaviors increased for all behaviors, reaching criterion (three consecutive sessions at 80% response rate or higher) in just three sessions. During intervention condition when only BSP was prompted, the frequency of BSP ranged from 9 to 11 praise statements ($M = 10.2$). Criterion

was met with at least 8 out of 10 prompts (80%) in the first three sessions. During intervention condition when BSP and Active Questioning prompting was split, the frequency of behaviors ranged from 4 to 7 (BSP, *M* = 4.8, range = 4 to 5; Active Questioning, *M* = 5.2, range = 4 to 7).

Criteria were met in the first three sessions with at least 4 out of 5 prompts (80%) for BSP and 4 out of 5 prompts (80%) for Active Questioning. During intervention condition when Active Questioning and Classroom Scanning prompting was split, the frequency of behaviors ranged from 4 to 7 (Active Questioning, *M* = 5.8, range = 5 to 7; Classroom Scanning, *M* = 4.8, range = 4 to 5). Criteria were met in the first three sessions with at least 4 out of 5 prompts (80%) for Active Questioning and 4 out of 5 prompts (80%) for Classroom Scanning. When no prompts were provided for BSP during the final phase of intervention the frequency of BSP dropped back down to baseline levels (*M* = 0.4, range = 0 to 1).

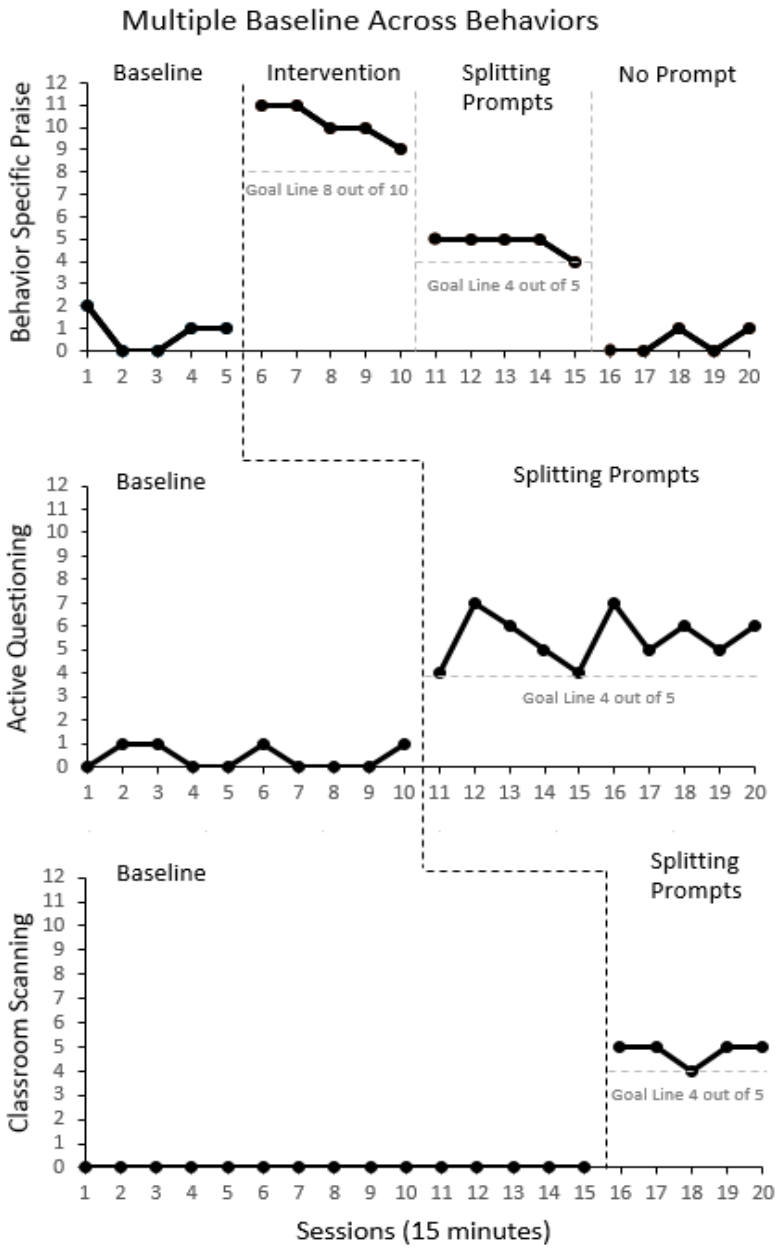

Figure 1. Frequency of targeted teaching behaviors per 15-minute session given a total of 10 prompts per intervention session.

Social Validity

The participant completed a questionnaire at the conclusion of the study to assess her comfort level with using prompting with wearable technology to increase teaching behaviors, as well as her perception of the usefulness and practicality of the technology. Furthermore, the participant was asked how this technology could be improved to enhance the application of prompting with wearable technology. When asked how easy it was to use and respond to prompting with the Apple Watch, the participant wrote, "It was very easy to use the smart watch during my lessons with my students because all I needed to do was look down to my wrist."

When asked about whether prompting with wearable technology was distracting, the participant wrote, "I did not find the watch to be a distraction at all, however, my students were occasionally distracted . . . since Apple Watch is a new product . . . they became highly interested in what the watch did." The participant offered a solution by writing, "I think it would be beneficial to introduce the watch before using it to allow students time to interact with it. This would help make the watch less of a distraction."

When asked how effective prompting with wearable technology was at increasing teaching behaviors, the participant reported that prompting from the watch was effective. With regards to providing BSP, the participant explained, "it [Apple Watch] served as a small reminder to monitor my students' responses more closely in order to tell them exactly what they did correctly so they can begin to make that behavior a habit." In terms of classroom scanning, the participant acknowledged a personal teaching deficit by writing, "Sometimes I do not scan as much as I should because there is a para and my mentor teacher in the room. However, it is important that I get into the habit of scanning when I have my own classroom." She concludes, "The watch helped me with this task."

When asked how likely to use prompting with wearable technology in the future, the participant wrote:

> *If my school district provided me with a smart watch to use, then I would definitely incorporate it into my class because it is important to me that students see how learning and technology play a role in their lives. Also, the watch did help provide me with subtle reminders on prompting students which is important, especially with EBD students. However, if I had to go buy the watch myself, then I would not use it, simply because I would not want to spend all that money on a prompting device.*

With regards to difficulties in using prompting with wearable technology the participant reported that at times the prompt was received at an inopportune time, therefore, making it difficult to respond to the prompt. For example, the participant wrote:

> *There were many instances where a student would be explaining a concept or answer to me and I would receive a prompt to "Engage" with them. During those times it did not seem appropriate to ask them if they were following along if they had just explained to me why they understood what they were working on.*

Another example occurred during session seven when a BSP prompt was delivered and the participant felt and saw the prompt, however, her mentor teacher was discussing an important matter and the participant stated afterwards that she did not want to interrupt her mentor teacher to deliver BSP. As a solution, when asked how to make prompting with wearable technology better, the participant hypothesized, "It would be nice if you could hit a 'snooze' button where if the teacher did not [respond] right away, he/she would be reminded in a minute or so." The participant concluded that a feature like this would provide flexibility for the teacher in situations where inopportune times occur to deliver a behavior following a prompt.

Discussion

The purpose of this study was to evaluate the effectiveness of prompting with wearable technology to increase targeted teaching behaviors of a preservice special education teacher. During small-group instruction, the preservice teacher received prompts via text messages on her Apple Watch cueing her to either deliver BSP, engage in active questioning, or conduct classroom scanning. Additionally, the participant's acceptability of the intervention to determine its usefulness and practicality was also assessed. Findings suggest that prompting with wearable technology was effective in increasing the participant's BSP, active questioning, and classroom scanning. The participant regarded prompting with wearable technology as a nonintrusive, effective way to increase targeted teaching behaviors. To the authors' knowledge, this study was the first to use prompting with wearable technology (i.e., Apple Watch) to increase multiple teaching behaviors of an education professional.

Targeted Teaching Behaviors

The classroom is a complex and dynamic environment. When preservice teachers do not sufficiently practice teaching behaviors and experience cognitive overload with curricular content and basic pedagogical skills, they often forget to use effective teaching techniques (Blessing & Anderson, 1996). In the current study, the authors addressed an effective intervention (tactile prompting) to increasing a teacher's behaviors on new wearable technology (i.e., Apple Watch). Expanding on previous studies that evaluated the effectiveness of tactile prompting (Haydon & Musti-Rao, 2011; McDonald, Reeve, & Sparacio, 2014), rather than a single behavior targeted with a vibratory cue, Apple Watch allows for the user to reference the watch display so that multiple behaviors can be targeted for increase. Given immediate level changes in participant behavior frequencies when prompting was split between behaviors, the potential of wearable technology as a multi-behavior training device emerges.

BSP did not maintain when prompting was faded leading the authors to conclude that the importance of high-levels of practice to sufficiently acquire a behavior cannot be understated. Willingham (2009) suggests that it is virtually impossible to become proficient at a mental task without extended practice. It is evident, therefore, that five sessions with 10 prompts and five sessions with five prompts was not sufficient practice for the participant to acquire higher than baseline levels of BSP. Although massed practice (i.e., closely follows a lesson) is commonly used and important for refining a new skill, research suggests distributive practice (i.e., practice over a longer period of time) is essential for solidifying a skill in one's long-term memory (Kang, 2016). In other words, distributive practice is needed to train a skill to automaticity.

Immediate level jumps are desirable, however, as a teaching tool, eventual behavior acquisition to levels of automaticity would be superior.

In contrast to single prompting devices, the benefit of having multiple behaviors prompted is that varying types of practice are now possible. One effective type of distributive practice is interleaving (Brown, Roediger, & McDaniel, 2014). Interleaving allows multiple skills to be practiced in parallel. For example, if skills A and B are being practiced, interleaved practice would look like this: ABABAB as opposed to practicing AAAA then practicing BBBB. Prompting with wearable technology enables interleaved, distributive practice.

Future research might address maintenance drops with greater durations and/or intensities of intervention. A possibility of prompting with wearable technology is to automate the prompting device with software application, thereby, removing logistical barriers to having a researcher manually sending prompts. An automated app that allows a user to enter multiple behaviors and set interval prompting schedules could then extend intervention and interleave practice until behaviors have been sufficiently trained to automaticity.

Social Validity

Visual analysis of this study suggest that treatment was effective and behavior increases occurred immediately, however, assessing the usefulness and practicality of treatment is also important to understand the potentials of prompting with wearable technology as a training device. The authors asked the participant to complete an emailed questionnaire at the end of the study. The participant had not previously participated in a research study, nor had she used Apple Watch for personal use or as a training device prior to this study. Time for training on the wearable device was five minutes, and as the participant reported, the ease and comfort using the device to receive prompts suggest low technological training barriers to use. Since Apple Watch is an Apple product and designed exclusively for iPhone users, setup and personalization is explicitly scaffolded upon initial device pairing. Numerous wearable technology devices are being introduced that are compatible with other companies and operating systems (e.g., Android). It should be noted that pairing and setup may be less intuitive on these devices requiring greater training time and/or greater difficulties in use.

The participant reported that using wearable technology to receive prompts was effective in increasing teaching behaviors because it reminder her to deliver the behaviors. Combined with data results, the participant's responses support the hypothesis that prompting is effective in overcoming cognitive overload with regards to implementing BSP, active questioning, and classroom scanning. The vibratory cue of a prompt was not reported as a distraction which is consistent with previous research on tactile prompting (Haydon & Musti-Rao, 2011). These findings further the literature in that splitting prompts between behaviors and adding a visual display component (which the participant was able to read on her Apple Watch) was also not reported as a distraction or disruption in lesson delivery. The discrete nature of wearable technology, and possibilities of automating the prompting schedule, could enable a user to incorporate the intervention into their classrooms for extended periods of time.

In support of the authors' prediction, and verified by the participant's response on the questionnaire, the interval prompting schedule did, at times, prompt the participant to perform a

behavior at inopportune times. Although a liberal response rate criterion was set to account for such instances, the lack of response was counted as an error. In reality, the participant received the prompt and reported thinking about performing the behavior, but decided against it. In hindsight, this was an opportunity to work with the targeted behavior and should not be considered an error. Future data collection procedures should be sensitive to such occurrences. The participant's suggestion of implementing a "snooze" feature is also plausible for application design when considering an automated prompting app.

Whenever incorporating technology as an intervention, costs and access potentially become inhibitors to use. The participant stated that she would use prompting with wearable technology in the future, however, noted that she would not personally buy Apple Watch solely as a teaching tool. Costs to date due limit the practicality of prompting with wearable technology, however, one must recognize that technology adoption by consumers is a gradual process. Wearable technology such as Apple Watch is relatively new on the market, and over time, costs should reduce and access should increase. It is challenging to predict whether wearable technology will become as prevalent as smart phones, however, projections on the smartwatch market are at 18% annualized rate of growth, reaching 70 million units by 2021 (Beaver, 2016). Early research is a worthwhile endeavor on this emerging technology.

Limitations

There are at least three limitations that should be considered and may inform us about future related research. First, the participant was a volunteer meeting mobile device requirement (i.e., iPhone user). Although the participant had never used an Apple Watch before, her questionnaire responses may have been influenced by her prerequisite technological skills. Rhine and Bryant (2007) found that student teachers' reactions to technology in field experiences were fairly consistent with their attitude toward and skill levels related to technology. In addition, Rogers (2010) identifies five adopter categories where individual characteristics position people on a continuum from innovators (i.e., willing to take risks and adopt technologies) to laggards (i.e., last to adopt an innovation). It is important, therefore, to consider the diverse range of technical skills among preservice teachers and adopter categories when evaluating social validity results.

Similar to prerequisite technological skills, the second limitation is that the participant already had necessary component skills to perform each targeted behavior. Although classroom scanning is a simple behavior to perform, training time may need to be extended and accuracy may be lower for a participant who has had no prior exposure and practice with BSP or active questioning. It would be necessary to ensure the acquisition of component skills before implementing prompting with wearable technology.

The third limitation of this study is that student data were not collected. Although BSP, active questioning, and classroom scanning are supported by research to affect student behavior, future researchers might consider assessing the effectiveness of prompting with wearable technology on student outcomes, the gold standard of teaching effectiveness.

Implications

In this study, three effective classroom management behaviors of a special education preservice teacher increased when prompted with wearable technology. This treatment has emerging implications for the field of teacher education, namely, the vibratory cue and visual display of Apple Watch, which was deemed easy to use, effective, and not a distraction to the participant, enables users to receive cues to practice multiple behaviors within dynamic classroom environments full of auditory and visual information. This study enables the field of special education to further explore the possibilities of prompting with wearable technology to support teachers in using important teaching behaviors without unduly increasing cognitive overload. Utilizing technology to promote opportunities to practice is an exciting endeavor. A goal in teacher training should be to apply sound theoretical principles while capitalizing on technological advancements for the ultimate purpose of affecting student outcomes. Prompting with wearable technology is a step towards that goal.

References

Archer, A. L., & Hughes, C. A. (2011). *Explicit instruction: Effective and efficient teaching*. New York, NY: Guilford Press.

Alberto, A., & Troutman, P. (2012). *Applied behavior analysis for teachers* (9th ed.). New York, NY: Merrill.

Allday, R. A., Hinkson-Lee, K., Hudson, T., Neilsen-Gatti, S., Kleinke, A., & Russel, C. S. (2012). Training general educators to increase behavior specific praise: Effects on students with EBD. *Behavioral Disorders, 37*, 87-98. Retrieved from http://www.jstor.org/stable/23890733

Ambrose, S. A., Bridges, M. W., DiPietro, M., Lovett, M. C., & Norman, M. K. (2010). *How learning works: Seven research-based principles for smart teaching*. San Francisco, CA: John Wiley & Sons.

Beaver, L. (2016, September 27). The smartwatch report: Forecasts, adoption trends, and why the market isn't living up to the hype. *Business Insider.* Retrieved from http://www.businessinsider.com/smartwatch-and-wearables-research-forecasts-trends-market-use-cases-2016-9

Blessing, S. B., & Anderson, J. R. (1996). How people learn to skip steps. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 22*, 576-598. doi: 10.1037//0278-7393.22.3.576

Borko, H., & Livingston, C. (1989). Cognition and improvisation: Differences in mathematics instruction by expert and novice teachers. *American Educational Research Journal, 26*, 473-498. doi: 10.3102/00028312026004473

Brophy, J. E. (1981). Teacher praise: A functional analysis. *Review of Educational Research, 51*(1), 5-32. doi: 10.2307/1170249

Brophy, J. (1986). Teacher influences on student achievement. *American Psychologist, 41*, 1069-1077. http://dx.doi.org/10.1037/0003-066X.41.10.1069

Brophy, J. (2006). History of research on classroom management. In C. M. Evertson & C. S. Weinstein (Eds.), *Handbook of classroom management: Research, practice, and contemporary issues* (pp. 17–43). Mahwah, NJ: Lawrence Erlbaum.

Brown, P. C., Roediger, H. L., & McDaniel, M. A. (2014). *Make it stick*: *The science of successful learning*. Cambridge, MA: Harvard University Press.

Colvin, G., Sugai, G., Good, R. H., & Lee, Y. (1997). Using active supervision and precorrection to improve transition behaviors in an elementary school. *School Psychology Quarterly, 12*, 344-363. doi: 10.1037/h0088967

Conroy, M. A., Sutherland, K. S., Snyder, A. L., & Marsh, S. (2008). Classwide interventions effective instruction makes a difference. *Teaching Exceptional Children, 40*(6), 24-30. doi: 10.1177/004005990804000603

DePry, R. L., & Sugai, G. (2002). The effect of active supervision and pre-correction on minor behavioral incidents in a sixth-grade general education classroom. *Journal of Behavioral Education, 11*, 255-267. doi: 10.1023/A:1021162906622

Emmer, E. T., & Stough, L. M. (2001). Classroom management: A critical part of educational psychology, with implications for teacher education. *Educational Psychologist, 36*(2), 103-112. doi: 10.1207/S15326985EP3602_5

Friedman, I. A. (2006). Classroom management and teacher stress and burnout. In C. Evertson & C. Weinstein (Eds.), *Handbook of classroom management: Research, practice, and contemporary issues*, (pp. 925-944). Mahwah, NJ: Lawrence Erlbaum.

Gersten, R., Fuchs, L. S., Williams, J. P., & Baker, S. (2001). Teaching reading comprehension strategies to students with learning disabilities: A review of the research. *Review of Educational Research, 71*, 279-320. doi: 10.3102/00346543071002279

Good, T., & Brophy, J. (2008). *Looking in classrooms* (10th ed.). Boston, MA: Pearson Education.

Haydon, T., & Musti-Rao, S. (2011). Effective use of behavior-specific praise: A middle school case study. *Beyond Behavior, 20*(2), 31-39. Retrieved from http://www.jstor.org/stable/24011804

Hemmeter, M. L., Santos, R. M., Ostrosky, M. M. (2008). Preparing early childhood educators to address young children's social-emotional development and challenging behavior. *Journal of Early Intervention, 30*, 321-340. doi: 10.1177/1053815108320900

Heward, W. L. (2003). Ten faulty notions about teaching and learning that hinder the effectiveness of special education. *The Journal of Special Education, 36*, 186-205. doi: 10.1177/002246690303600401

Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children, 71*, 165-179. doi: 10.1177/001440290507100203

Kang, S. H. (2016). Spaced repetition promotes efficient and effective learning policy implications for instruction. *Policy Insights from the Behavioral and Brain Sciences, 3*, 12-19. doi: 10.1177/2372732215624708

Korpershoek, H., Harms, T., de Boer, H., van Kuijk, M., & Doolaard, S. (2016). A meta-analysis of the effects of classroom management strategies and classroom management programs on students' academic, behavioral, emotional, and motivational outcomes. *Review of Educational Research 86*, 643-680. doi: 10.3102/0034654315626799

Kounin, J. S. (1970). *Discipline and group management in classrooms*. New York, NY: Holt, Rinehart & Winston.

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. *What works*

clearinghouse. Retrieved from https://ies.ed.gov/ncee/wwc/pdf/reference_resources\wwc_scd.pdf

Lewis, T. J., Powers, L. J., Kelk, M. J., & Newcomer, L. L. (2002). Reducing problem behaviors on the playground: An investigation of the application of school-wide positive behavior and supports. *Psychology in the Schools, 39,* 181-190. doi:10.1002/pits.10029

Markelz, A. M., Scheeler, M. C., Taylor, J. C., & Riccomini, P. J. (in press). A review of interventions to increase behavior specific praise. *Journal of Evidence Based Practice for Schools.*

McDonald, M. E., Reeve, S. A., & Sparacio, E. J. (2014). Using a tactile prompt to increase instructor delivery of behavior-specific praise and token reinforcement and their collateral effects on stereotypic behavior in students with autism spectrum disorders. *Behavioral Development Bulletin, 19*(1), 40-43. doi: 10.1037/h0100573

Nelson, J., & Roberts, M. (2000). Ongoing reciprocal teacher-student interactions involving disruptive behaviors in general education classrooms. *Journal of Emotional and Behavioral Disorders, 8,* 27-37. doi: 10.1177/106342660000800104

Oliver, R. M., & Reschly, D. J. (2007). *Effective classroom management: Teacher preparation and professional development.* Washington DC: National Comprehensive Center for Teacher Quality.

Rhine, S., & Bryant, J. (2007). Enhancing pre-service teachers' reflective practice with digital video-based dialogue. *Reflective Practice, 8*, 345-358. http://dx.doi.org/10.1080/14623940701424884

Rogers, E. M. (2010). *Diffusion of innovations*. New York, NY: Simon and Schuster.

Scheeler, M. C., Budin S. G, & Markelz, A. M. (2016). The role of teacher preparation in promoting evidence-based practice in schools. *Learning Disabilities: A Contemporary Journal 14*, 171-187.

Solomon, B. G., Klein, S. A., Hintze, J. M., Cressey, J. M., & Peller, S. L. (2012). A meta-analysis of school-wide positive behavior support: An exploratory study using single-case synthesis. *Psychology in the Schools, 49,* 105-121. doi: 10.1002/pits.20625

Star, J. R., & Strickland, S. K. (2008). Learning to observe: Using video to improve preservice mathematics teachers' ability to notice. *Journal of Mathematics Teacher Education, 11,* 107-125. doi: 10.1007/s10857-007-9063-7

Sutherland, K. S., Wehby, J. H., & Copeland, S. R. (2000). Effect of varying rates of behavior-specific praise on the on-task behavior of students with EBD. *Journal of Emotional and Behavioral Disorders, 1,* 2-9. doi: 10.1177/106342660000800101

Sutherland, K. S., Wehby, J. H., & Yoder, P. J. (2002). Examination of the relationship between teacher praise and opportunities for students with EBD to respond to academic requests. *Journal of Emotional and Behavioral Disorders, 10*, 5-13. doi: 10.1177/106342660201000102

Sweller, J. (1989). Cognitive technology: Some procedures for facilitating learning and problem solving in mathematics and science. *Journal of Cognitive Psychology, 81,* 457-466. doi: 10.1037/0022-0663.81.4.457

Willingham, D. T. (2009). *Why don't students like school? A cognitive scientist answers questions about how the mind works and what it means for the classroom.* San Francisco, CA: Jossey-Bass.

About the Authors

Andrew Markelz is a doctoral candidate in Special Education at the Pennsylvania State University. His research interests include expediting the novice to expert teaching curve with technology in teacher education, behavioral fluency, and programming for generalization.

Jonte Taylor (JT) is an Assistant Professor in Special Education at the Pennsylvania State University. Dr. Taylor investigates science, technology, engineering, arts, and mathematics (STEAM) education as well as classroom and behavior management strategies for students and teachers.

Mary Catherine Scheeler is an Associate Professor of Special Education at the Pennsylvania State University. Her research interests include teacher preparation in special education, immediate feedback in supervision using Bug-in-Ear technology, and generalization of teaching techniques from university to K-12 classroom settings.

Paul J. Riccomini is an Associate Professor of Special Education at the Pennsylvania State University. His current research interests are effective instructional practices and interventions in mathematics for students with high-incidence disabilities.

David McNaughton is a Professor in Special Education at the Pennsylvania State University. His teaching and research focuses on the development of effective educational programs for individuals with severe disabilities. He is especially interested in the effective use of technology by individuals who use augmentative and alternative communication (AAC), and how AAC can be used to achieve important educational and vocational outcomes.

"How Am I Doing?" Teaching Children with Emotional-Behavioral Disorders to Self-Manage Their Behaviors

Lael Tensfeldt, M.A.
Sonoma County Office of Education

Amory Verroulx, M.A., BCBA
Sunny Hills Services

Jennifer N. Mahdavi, Ph.D, BCBA-D.
Sonoma State University

Abstract

Relying on external supports to shape the behaviors of students with emotional/behavioral disorders (EBD) is risky as these classroom supports may not generalize to internal strategies that students can use independently in the community. Two special educators approached building self-determination skills in their students with EBD from different perspectives: applied behavior analysis and sensorimotor regulation. Despite different approaches, each teacher employed consistency of language, explicit instruction, and empowering students to engage in self-management. The teachers observed that after students learned to self-manage, they did so with increasing success, resulting in fewer incidences of antisocial or unproductive behavior. The strategies each teacher used are described, emphasizing practices that both used so that other special educators may follow their examples.

"How Am I Doing?" Teaching Children with Emotional-Behavioral Disorders to Self-Manage Their Behaviors

Teaching children with emotional-behavioral disorders (EBD) is a challenging task for any special educator. Students with EBD tend to engage in unproductive behaviors such as low academic engagement, poor task completion, and disruptive, aggressive, or anxious behavior Gage, 2013; Jull, 2009; Rafferty, 2010). Finding ways to help children with EBD appropriately manage unpleasant events, undesirable work, or their own feelings of anxiety is one of the most important activities these children's teachers can undertake. Even more important, however, is for adults to support children as they learn how to evaluate, manage, and regulate their behaviors independently (Cooper, Heron, & Heward, 2007).

Self-Determination, Self-Management and Self-Regulation

Self-determination comprises a set of skills that helps an individual become an agent in his or her own life. If a person is able to make choices or decisions, to set goals and solve problems, to develop a sense of self-advocacy, and an internal locus of control, he or she is said to be self-determined (Wehmeyer, 2015). Being self-determined allows an individual a greater opportunity to live independently than if those skills are lacking.

Self-management embodies a subset of self-determination skills, incorporating goal setting, evaluating, monitoring, and reinforcing one's own progress toward those goals, and engaging in self-instruction to continue working toward the goals (Alberto & Troutman, 2013). Although self-management skills do not lead directly to academic success, they may be described as "academic enablers," or abilities that enable students to succeed in the classroom setting (Gresham, 2015).

Self-regulation may be one product of self-management. An individual who is self-regulated is one who is able to recognize and control his or her internal thoughts or feelings, and to engage in behaviors that, instead of disrupting environment, contribute to academic success and social acceptance (Smith, Cumming, Merrill, Pitts, & Daunic, 2015). Students with EBD frequently struggle with identifying their internal dysregulation, which leads them to engage in disruptive behaviors (Miller, Reisman, McIntosh, & Simon, 2001; Prior, 2001). Recognition of emotional or sensory states may assist children in making better decisions about how to manage them.

Children with EBD often have difficulty mastering self-determination or self-management skills. Their teachers are frequently able to implement structured and predictable systems of support that help these students maintain appropriate behavior at school. However, these external systems do not generalize well nor facilitate the future independence of individuals with EBD because they do not instill a sense of agency and self-determination in the students (Peterson, Young, Salzberg, West, & Hill, 2006). As such, it is imperative that teachers implement evidence-based practices that cultivate students' agency and self-management techniques.

Evidence-Based Practices Promoting Self-Management and Self-Regulation

Promoting self-management and self-regulation skills in children is a burgeoning area of research. Evidence-based practices that teachers can use as they teach these important social skills to their students include direct instruction, the use of self-monitoring checklists, clear classroom rules, student self-direction, and social validity of methods. Each of these is briefly described below.

Direct explicit instruction. Providing modeling of self-management or self-regulation strategies to students, followed by ample opportunities for them to practice and get coached in their use of those skills, concluding with independent and distributed practice has proven to be very effective in helping students develop self-determination skills (George, George, Kern, & Fogt, 2013; Niesyn, 2009; Wehmeyer, Palmer, Shogren, Williams-Diehm, & Soukup, 2013).

Self-monitoring checklists. Self-monitoring checklists that students can use to evaluate their own performance, then compare that evaluation with one conducted by an adult, can be used effectively to increase student self-management (Bruhn & Watt, 2012; Peterson et al., 2006).

Clear classroom rules and procedures. Teachers who post, directly teach, and consistently adhere to well-defined classroom rules and procedures assist students in understanding and maintaining their own behavior (Niesyn, 2009).

Student-directed learning. There is a wealth of research that supports getting students more involved in their own learning through self-determination activities such as self-monitoring and

self-reinforcement, by engaging students in leading their own Individualized Education Plan meetings, and preparing students to be strong self-advocates (Kelly & Shogren, 2014; Wehmeyer, Shogren, & Seo, 2015)

Social validity. When students and teachers believe in an intervention or a strategy, they are more likely to engage with it. In self-determination, social validity is increased when students set their own goals, participate in planning their own learning, and take responsibility for their work (Ennis & Jolivette, 2014). For adults, finding a common language and shared vision for practices also increase social validity (Kelly & Shogren, 2014).

Teaching Children Self-Management Techniques

Having attended the same university to earn their teaching credentials and master's degrees, authors Lael Tensfeldt (2014) and Amory Verroulx (Verrall, 2012) went on to teach children with EBD, but took different approaches to their work. Although each teacher approached teaching their students how to handle their emotional states and behaviors from different perspectives, many of their strategies to employ these practices were similar. These cases, described here, illustrate the practical translation and application of research grounded practices and concepts, with evidence of effect on students.

Social Thinking, Sensorimotor Regulation, and Young Students

Mrs. Tensfeldt has taught kindergarten and first grade students in a county-based special day class for several years. With such young students who have EBD, a class-wide positive behavior support system was crucial. She chose the following social skills and self-regulation curricula:

- *The Alert Program* (Williams & Shellenberger, 1996), and *The Zones of Regulation*, also known as *The Zones*, (Kuypers, 2011), which teach children that their bodies run like car engines at low, just right, or high, and that all engine levels are appropriate at certain times, but an engine must be just right for learning. Helping children understand their engine levels at any particular time, and then choose and use a tool to self-regulate when they are too revved up for learning are the key elements of these curricula.

- *Superflex* (Madrigal & Garcia Winner, 2008), a social thinking curriculum, teaches children about expected vs. unexpected behaviors, big vs. little problems, inner coach vs. inner critic, and how an individual's behavior affects others around him or her. *Superflex* uses comic book style characters such as Glassman and Rockbrain as examples of overblown or inappropriate reactions to situations. Students are taught how to defeat these villains using strategies like taking deep breaths to calm themselves, or evaluating whether the hurtful statement is true or kind.

As part of her classroom climate development, Mrs. Tensfeldt created an "engine room" where children could voluntarily go when they felt too revved up to learn. In the engine room, Mrs. Tensfeldt provided posters that reminded children of the calming strategies they had learned, as well as sensorimotor tools like weighted vests and fidgets. Beyond the engine room was the "chill zone," which was outside the classroom, but supervised, where children who needed to be noisy could go to calm themselves. At all times, Mrs. Tensfeldt emphasized the importance of

her students checking in with themselves to understand their feelings and behavior, as well as encouraged them to determine which tools would help them be able to get back to learning. She was working to build their independence by developing their abilities to self-regulate their emotions.

Applied Behavior Analysis into Intrinsic Motivation

Mr. Verroulx has been a teacher and behavior specialist in a non-public school special day class setting. His students were in the middle grades, 5th-9th, and had significant issues related to their emotional-behavioral disorders that prevented them from attending public schools. Mr. Verroulx's school had a robust school-wide positive behavior support system with points-based levels. Access to activities, materials, and incentives was tied to students' accumulated points and status on the level system. However, the broad school-wide system did not adequately support students in developing more intrinsic self-management systems, so Mr. Verroulx chose an applied behavior analytic approach (ABA) to teaching replacement or incompatible behaviors that could be appropriately used in place of the behaviors they typically engaged in for attention or escape. Mr. Verroulx provided behavior support in the classrooms of two teachers, enlisting paraprofessionals to also get involved in the plan.

Students' behavior related IEP goals, which concerned off-task or disruptive behaviors, guided the individual self-monitoring plans that Mr. Verroulx initiated with each student. Mr. Verroulx taught each student how to evaluate whether he engaged in a desired behavior using a 3-point scale. At intervals, the students evaluated their own performance, while Mr. Verroulx also evaluated what he observed. If the student and teacher matched ratings, the student earned a bonus point. The earned points applied to the schoolwide level system.

Mr. Verroulx, the classroom teachers, the paraprofessionals, and the students engaged in role-playing and mock ratings to learn how to implement self-evaluation, self-instruction, and self-monitoring activities. First, the adults acted as both a teacher and a student displaying different target and off target behaviors, while the real students of the classroom rated the behavior of the adult acting as a student. Everyone participated in the discussion about how ratings were chosen. Role playing continued until the group reached consensus in their ratings. This role playing, practice, and discussion allowed the whole classroom community to be a part of developing shared definitions and expectations.

Active student engagement was essential not only for understanding how and why to self-monitor, but also for the success of the intervention. By putting his students in charge of evaluating their own behaviors, Mr. Verroulx helped empower them to be in charge of their performance in school.

Similarities in a World of Difference

Social thinking and sensorimotor regulation techniques would not seem to have much in common with the behavior-focused nature of ABA because the strategies are rooted in differing theoretical paradigMrs. Yet, each of these teachers experienced a great degree of success with supporting children in becoming more independently self-regulated. Detailed reports from each

teacher about their systems, including data collected and analyzed to document students' specific improvements, appear in each teacher's master's thesis (Tensfeldt, 2014; Verrall, 2013).

Despite taking different approaches to building self-management skills in their students, it became clear that these teachers had adopted several overlapping practices when they presented their systems at a question-and-answer session at a professional conference (Mahdavi, Tensfeldt, & Verroulx, 2016). The practices that were common in each teacher's classroom are presented here so that other special educators may follow their examples.

Common Language

Using common language consistently was very helpful in both classrooms as the teachers reshaped their students' behaviors. In Mrs. Tensfeldt's class, the teacher, the paraprofessionals, the speech pathologist, and other service providers were all familiar with the cognitive behavioral therapeutic curricula and strategies she was implementing. Each member of the team was able to redirect undesirable student behavior or praise good choices by using the familiar language of "engine levels," "tools," and "villains." Children were accustomed to hearing an adult calmly ask, "What's your task right now?" or "What will be the consequence if you choose to continue that?" Indeed, Mrs. Tensfeldt's students would talk to one another using the same phrases that were so prevalent amongst the adults. The level of consistency in following the classroom plan and the way in which it was talked about was extremely high, which supported the children in understanding expectations and making better choices.

Mr. Verroulx also developed a common language and set of expectations with his students. Rather than simply tell them to behave appropriately, he worked with the students to develop ways to communicate about and understand classroom expectations like "Stay on task," or "Be respectful." Each of these expectations was demystified by fully describing it in words, experiencing it via role-playing, and evaluating it independently and in concert with the teacher. Students and teachers alike continued to use these shared definitions throughout the school year and students would often say something like, "You can tell I'm active listening because I'm sitting up, not talking to the other kids, not tossing my hat, and looking at you."

In each classroom, children and adults used common language to establish behavioral norMrs. A shared understanding of what the expectations were assisted students in meeting them and assisted adults in pursuing them consistently.

Explicit Instruction

In both classrooms, teachers taught the students how to self-manage through explicit instruction. Rather than leaving students to learn how to regulate their emotions or behaviors by watching proficient models, the teachers directly taught children strategies they could use to evaluate their own feelings and behaviors. Explicit instruction elements included the teacher demonstrating and explaining each expectation, followed by guided discussion among the teacher and students to practice the expectation in a supported way, and concluding with each student independently engaging with the expectation. Teachers commonly describe explicit instruction as the "I do- we do- you do" method (Archer & Hughes, 2011).

Mrs. Tensfeldt modeled for, discussed with, and asked her students to practice differentiating big problems from little ones. Mrs. Tensfeldt first described an incident in which her pencil lead broke when she was writing. That broken pencil made her so angry! But she knew that a broken pencil is easily fixed, so this is actually just a small problem. After a few more examples, students participated in discussions to decide whether other problems were big or small, writing them down and sorting the big and small problems into a chart. Doing so helped the children identify problems that cropped up so that they could modulate their reactions to them. As time went on, children independently and incidentally engaged in self-instruction about whether their problems were big or small.

In Mr. Verroulx's class, opportunities to practice self-management were provided in a no-stress and low-stakes environment, which empowered students to use those strategies when it mattered most. Not only did the students role play and discuss behavior expectations, they were explicitly taught to use a self-monitoring form to evaluate their own behavior honestly so that their own assessment matched the teacher's. Students were taught to evaluate their behaviors at the sound of a chime every 5 minutes during several class periods per week. As this intervention was launched, Mr. Verroulx circulated the room to check on students with each chime, discussing whether the ratings were accurate in a "we-do" cooperative way, but over time he faded that support to individual "I do" check-ins and comparisons only at the end of the period. The chime, as a gentle reminder of the passing of time, might function to orient students to the passing of time and to differentiate their present actions from past experiences. In follow-up check-ins, students also expressed that they used the chime to help figure out how challenging a current disagreement or problem really was. Was the misunderstanding worth missing points for all the marking periods? Or was it a 3-interval miss? Or was it something about which they could have feelings, but still maintain attention on the lesson? The chime also helped to increase active student engagement as it prompted students to refocus on the teacher and the lesson if they drifted with only minimal loss of time if they "zoned out"

In each classroom, the explicit instruction provided during class time enabled children to learn and practice new self-management techniques before they were angry or upset. As such, teachers were able to use only gentle prompting to remind children of the strategies when they most needed to use them.

Self-Evaluation and Self-Regulation

Students with EBD often have difficulties understanding their own thoughts or feelings. Being unable to name their internal states reliably, they may not be able to self-soothe when they feel stressed out, or to make a pro-social choice when in a stimulated emotional state. Both Mrs. Tensfeldt and Mr. Verroulx worked diligently with their students to build their abilities to "check-in" with their own thoughts or feelings with the goal of improving their academic performance and their social functioning.

A visitor to Mrs. Tensfeldt's classroom will often hear the phrase, "Check your engine!" The students in her class are given extensive instruction in how to identify whether they are in a calm mood and ready to learn, if they are too riled up to be attentive, or too tired or sad to engage with classmates and lessons. One might hear a child volunteer that "My engine is in the yellow zone, so I need to choose a tool to settle down!" Later, a teacher might ask a fidgety child, "Do you

need to check your engine?" Even the speech pathologist comes into the classroom stating, "My engine is just right for learning today!" Not only do teachers and specialists model the identification and description of their own emotional states, they constantly encourage students to do the same. As children become better able to understand their internal feelings, they begin to see how these affect their work in the classroom and the way they get along with others.

The students in Mr. Verroulx's class are more focused on evaluating their academic and classroom social skills. Before he began his intervention with them, Mr. Verroulx's students blamed their poor performance in class on biased teachers, disruptive peers, or anyone other than themselves. During one check-in at the end of a period, Mr. Verroulx asked a student what was going on for him that day, as he seemed confused during independent work that period. The student explained, "Sometimes, I just zone out. I don't mean to but then I don't know what work she wants us to do. That's why I put the so-so's on my chart." They discussed ways the student could help himself stay cued in. The next day, Mr. Verroulx witnessed this student adopting his blank "zone-out" face during one of the intervals and noted that the student, without prompting, used the self-management skills they had discussed: he visibly shook his head, reoriented himself to the teacher, smiled discreetly over at Mr.Verroulx, maintaining his focus for the remaining class time. By enabling his students to view their own behaviors objectively, to evaluate whether they met expectations, and to take steps to get on the right-track, Mr. Verroulx was able to stop the blame game. His students developed the ability to say, "My mind was drifting during math today, so I don't get full credit for staying focused this period." They could accept that they forgot to raise their hands, which was a positive change from their previous protestations, such as, "If the teacher would have listened to me, I wouldn't have had to shout out!" Mr. Verroulx's students learned not only to evaluate their own behaviors, but also to accept that while making a mistake is acceptable, getting angry about it is not.

In each classroom, teachers emphasized that each student needed to work on his or her own triggers, feelings, or behaviors. The locus of control for behaviors was put into the hands of the students, giving them the opportunity to help themselves rather than creating an environment where adults prompt, nag, and manage children into proper behavior.

Teach Children How to Meet Their Own Needs

Simply evaluating one's own behavior is not sufficient, however. Both Mr. Verroulx and Mrs. Tensfeldt took the further step of empowering their students to take actions to help them meet their own goals.

Mr. Verroulx's students began taking responsibility for their own actions, a crucial skill for individuals who wish to succeed in school or the workplace. Once they could reliably evaluate their behaviors, they were able to put appropriate replacement behaviors in place of their old bad habits. Students who once denied any responsibility for having failed to complete an assignment were able to state, "If I had paid more attention to my work, I would have finished it." This ability translated into self-instruction to get on task. A student might say, "I'm spending too much time talking to my friend. I need to get back to work by looking at my own paper!"

According to data he collected, Mr. Verroulx found that over time, his students decreased behaviors of which teachers disapprove, and commensurately increased their abilities to follow

classroom rules, complete assignments, and generally behave like scholars (Verrall, 2012). Even more, as students experienced increases of time on task, more awareness of their own behaviors, and a sense of responsibility for their actions, they also began to independently set their own personal goals. During check-ins at the end of the period, it was common for students to tell Mr. Verroulx, “I had one more happy face today than yesterday!” or “I had three so-sos yesterday and I was going to do better today.” The goals they set for themselves were meaningful, and as such, likely to be met.

Choosing tools to assist with self-regulation was an important feature of Mrs. Tensfeldt’s program. Not only could her students reliably identify their internal states, they gained confidence in selecting a small stuffed animal to fidget with, a seat that rocked slightly, or deep breathing exercises, among other strategies, to help themselves stay ready to learn. Increasing their ability to self-regulate was self-reinforcing for children who were able to stay calmer for longer periods of time, according to classroom behavior data collected (Tensfeldt, 2014).

In each classroom, the focus was on helping students discover the strategies and tools that were effective for them to keep themselves calm, centered and productive. The intent of each teacher was to let each student develop an internal locus of control in deciding when and how to implement self-regulation strategies. An adult swooping in to provide external supports does not facilitate students’ self-regulation. Each teacher’s goal was to fade the prompt and reminders that adults typically direct toward children, so that the children would naturally and independently make choices that would lead to their own needs being met.

Final Thoughts

Keeping students with EBD on the right track can be exhausting for teachers. Worse, when teachers spend so much time and energy trying to corral or channel their students’ behaviors, they are not fostering the skills and strategies that those children require to be independent. As teachers, we should ask ourselves, “Why am I doing this for my students? How can I teach them the strategies they need to self-manage and make better choices?” When Mr. Verroulx and Mrs. Tensfeldt, each in his or her own way, relentlessly worked with their students to develop self-monitoring, self-regulation, and self-evaluation abilities, they saw more productive behavior in the classroom, along with a greater ability of their students to engage in prosocial behavior on the playground and in the classrooms of other teachers (Tensfeldt, 2014; Verrall, 2012). Furthermore, Mrs. Tensfeldt reports that the parents of her students often tell her that their children ask their parents, "How is your engine running?" as a way of helping the adults in their lives self-regulate!

Explicit instruction, consistent communication, and development of self-regulation and self-management abilities, and the development of each student's ability to meet his or her own needs all provided a strong foundation for self-management in each classroom. A well-developed program for empowering students to manage their own behaviors is good for teachers, who will need to spend less time doling out consequences for behavior, and for children, who will gain independence and self-efficacy.

What does that mean for special education teachers? We suggest that you examine your own practices for increasing your students' abilities to self-regulate their emotions and self-manage their behaviors. Continue using the evidence-based strategies that have been successful in the systems you have built in your own classroom. Then make sure you have built a strong foundation for student success by implementing some of the practices that were so useful for Mrs. Tensfeldt and Mr. Verroulx. Determine the extent to which you are communicating your expectations clearly with other adults and with your students. Evaluate how well you are using explicit instruction to teach students to use the strategies you teach. Consider how you support students as they learn not only how to evaluate and regulate their own emotional states and academic/behavioral performance, but also how to identify and meet their own needs.

How are your students doing?

References

Alberto, P., & Troutman, A. C. (2013). *Applied behavior analysis for teachers* (8th ed.). Boston: Pearson.

Archer, A. L., & Hughes, C. A. (2011). *Explicit instruction: Effective and efficient teaching.* New York: Guilford Press.

Bruhn, A., & Watt, S. (2012*).* Improving behavior by using multicomponent self-monitoring within a targeted reading intervention. *Behavioral Disorders, 38 (1),* 3-17.

Cooper, J.O., Heron, T.E., & Heward, W.L. (2007). *Applied Behavior Analysis.* Upper Saddle River, NJ: Pearson.

Ennis, R. P., & Jolivette, K. (2014). Existing research and future directions for self-regulated strategy development with students with and at risk for emotional and behavioral disorders. The *Journal of Special Education, 48(1),* 32-45. doi:10.1177/0022466912454682

Gage, N.A., (2013). Characteristics of students with emotional disturbance manifesting internalizing behaviors: A latent class analysis. *Education and Treatment of Children, 36 (4),* 127-145.

George, M.P., George, N.L., Kern, L., Fogt, J.B., (2013). Three-tiered support for students with E/BD: Highlights of the universal tier. *Education and Treatment of Children, 36(3),* 47-62.

Gresham, F. (2015). Evidence-based social skills interventions for students at risk for EBD. *Remedial and Special Education, 36(2),* 100-104. doi:10.1177/0741932514556183

Jull, S. K. (2009). Student behavior self-monitoring enabling inclusion. *International Journal of Inclusive Education, 13(5),* 489-500. doi:10.1080/13603110701841315

Kelly, J. R., & Shogren, K. A. (2014). The impact of teaching self-determination skills on the on-task and off-task behaviors of students with emotional and behavioral disorders. *Journal of Emotional and Behavioral Disorders*, 22(1), 27-40.

Kuypers, L. (2011). *The Zones of Regulation.* San Jose, CA: Social Thinking Publishing.

Madrigal, S.,& Garcia Winner, M. (2008). *Superflex: A Superhero Social Thinking Curriculum.* San Jose, CA: Social Thinking Publishing.

Mahdavi, J.N., Tensfeldt, L., & Verroulx, A. (2016, April). *Students in charge: Developing self-regulation strategies in children with behavior disorders.* Paper presented at the annual meeting of the Council for Exceptional Children, St. Louis, MO.

Miller, L., Reisman, J., McIntosh, D. & Simon, J. (2001). An ecological model of sensory modulation. In S. Roley, E. Blance, & R.l Schaaf (Eds.), *Understanding the nature of sensory integration with diverse populations.* San Antonio, TX: Therapy Skill Builders.

Niesyn, M. E. (2009). Strategies for success: Evidence-based instructional practices for students with emotional and behavioral disorders. *Preventing School Failure, 53(4),* 227-234.

Peterson, L.D., Young, K.R., Salzberg, C.L., West, R.P., & Hill, M. (2006). Using self-management procedures to improve classroom social skills in multiple general education settings. *Education and Treatment of Children, 29 (1),* 1-21.

Prior, K. (2001). Occupational therapy with school-aged children. In L. Lougher (Ed.), *Occupational therapy for child and adolescent mental health* (pp. 132-150). St. Louis, MO: Churchill Livingstone.

Rafferty, L. A. (2010). Step-by-step: Teaching students to self-monitor. *TEACHING Exceptional Children, 43(2),* 50-58.

Smith, S., Cumming, M. , Merrill, K. , Pitts, D. , & Daunic, A. (2015). Teaching self-regulation skills to students with behavior problems: Essential instructional components. *Beyond Behavior, 24(3),* 4-13.

Tensfeldt, L. (2014). *Direct, ongoing, and unique: Instructional strategies to support prosocial behavior in students with emotional and behavioral disorders* (Master's thesis). Sonoma State University, Rohnert Park, CA .OCLC: 904549603

Verrall, A. (2012). *Use of self-monitoring with students: Why are we doing the work for them*? (Master's thesis). Sonoma State University, Rohnert Park, CA. OCLC: 830041153

Wehmeyer, M. L. (2015). Framing the future: Self-determination. *Remedial and Special Education, 36(1),* 20-23. doi:10.1177/0741932514551281

Wehmeyer, M. L., Palmer, S. B., Shogren, K., Williams-Diehm, K., & Soukup, J. H. (2013). Establishing a causal relationship between intervention to promote self-determination and enhanced student self-determination. *Journal of Special Education, 46(4),* 195-210. doi:10.1177/0022466910392377

Williams, M. & Shellenberger, S. (1996*). How does your engine run? A leader's guide to the Alert Program for Self-regulation.* Albuquerque, NM: Therapy Works.

About the Authors

Lael Tensfeldt, M.A., is a Special Education teacher for the Sonoma County Office of Education. She has been teaching kindergarten and first graders in a program named the Positive Emotional Behavioral Learning Launch that she helped develop ten years ago. Mrs. Tensfeldt is also an adjunct faculty member at Sonoma State University where she instructs beginning teachers through the induction program. Her focus in research and instruction include best practices for promoting positive outcomes for individuals with emotional and behavioral difficulties in addition to differentiated instruction designed to engage all learners.

Amory Verroulx, M.A., BCBA, is an Adjunct Professor of Special Education at Sonoma State University and a Program Specialist for Windsor Unified School District. A credentialed special educator in the state of California with a background of working primarily in Non-Public Schools, his professional focus is twofold: increasing students' skills to independently self-regulate and self-advocate and increasing the skill sets of teachers to facilitate student learning and growth. His research interests include progress monitoring, self-determination, and behavioral interventions for students with challenging behaviors.

Jennifer N. Mahdavi, Ph.D, BCBA-D, is Professor of Special Education at Sonoma State University. A credentialed special educator in the state of California, Dr. Mahdavi's professional focus is on developing future special educators who are committed to helping children with disabilities reach their potential. Her research interests include progress monitoring, multi-tiered systems of support, and academic and behavioral interventions for students with LD or EBD.

Developing Peer Mediated Interventions for Secondary Students with Emotional and Behavioral Disorders

Danielle Feeney, M.Ed.,
University of Nevada, Las Vegas

Abstract

Social skills training has become a major focus for improving the lives of individuals with disabilities. Students with emotional and behavioral disorders often lack the social skills necessary to build and maintain positive relationships with others and require individualized training to appropriately engage across all settings. Despite the growth of research in this topic, there is little known about the efficacy of peer-mediated interventions for high school students who have emotional and behavioral disorders. Peer mediators act as models and supports for students with emotional and behavioral disorders by providing cues, feedback, and praise. This paper suggests ways that classroom teachers can develop peer-mediated interventions at a secondary level.

Keywords: emotional and behavioral disorders; peer-mediated interventions; social skills training

Developing Peer Mediated Interventions for Secondary Students with Emotional and Behavioral Disorders

Peer-mediated interventions (PMIs) focus on alternative teaching arrangements where students become model academic and social supporters for their classmates (What Works Clearinghouse [WWC], 2007a, 2010a, 2010b). Interventions can be structured differently (i.e. same-age or cross-age pairings, direct or indirect interactions, academic or behavioral goals), but all aim to improve educational outcomes for students with disabilities. In this type of instruction, the teacher becomes a facilitator and trainer to the peer mediator and actively observes interactions between the students (WWC, 2007a, 2010a, 2010b).

Students with disabilities, especially those with emotional and behavioral disorders (EBD), are often isolated by their peers due to a lack of social competency. The impact this has on students with emotional and behavioral disorders can include (a) academic concerns (b) behavioral problems (both internalizing and externalizing), and (c) limited social skills (Farmer et al., 2016). When looking at the combination of these factors in relation to students with EBD in the classroom, researchers found that students with EBD were more likely to fail courses than either students without disabilities or students with learning disabilities (Cullinan & Sabornie, 2004). In addition to academic concerns, a lack of social competency can lead to the inability to build and maintain relationships with both peers and adults. Students with EBD are found to have less-preferred social behaviors in the school setting, home environments, community areas, and work place. According to Sabornie, Kauffman, and Cullinan (1990), high schoolers with EBD were more likely to be rejected by their peers than students without disabilities. Schonert-Reichl (1993) found that students with EBD had fewer communications with their friends, lower quality relationships, and were less empathetic than their peers without disabilities. Students who lack prosocial behavior skills are often more victimized and isolated from their peers (Griese & Buhs,

2014). This leads to a barrier in not only thinking about actions, but also understanding them and being able to voice them to others. Without these core skills, students with EBD struggle with building a healthy emotional intelligence with peers or adults.

Furthermore, students with EBD also exhibit inappropriate behaviors. When considering their conduct, one usually thinks of two drastically different types of behaviors: social withdrawal or aggressiveness. Both have a variety of factors that play into them, but may fall into two primary categories: internalizing behaviors and externalizing behaviors, respectively (Kauffman & Landrum, 2012). While externalizing behaviors are often readily observed by school professionals (e.g., insubordination, defiance, aggressiveness), internalizing behavioral problems are not always obvious. These could include (a) severe shyness (failure to start or respond to social interactions); and (b) habitual indications by a student that he can do few things with success (Pierce, Nordness, Epstein, & Cullinan, 2016).

Together, these factors greatly impact students with EBD both in and out of the school environment. Communication and social skills are needed not only to use language competently, but also to cope effectively. Several students with EBD are reported by parents to have trouble beginning and maintaining a conversation (Wagner et al., 2005); however, other social skills (e.g., offering to help others, listening to others, joining in on activities) are not observed as frequently.

While it is obvious that students with EBD lack certain social skills, it isn't always clear which social skills they need to develop. Often, these students can use language to effectively irritate or anger others, but fail to use it to appropriately communicate their thoughts and/or feelings (Kauffman & Landrum, 2012). Students with EBD often behave in ways that anger or disappoint those around them because they lack social skills and aren't adequately taught them (Kauffman & Landrum, 2012). In addition to this, students with EBD struggle with translating their skills across various settings. Morgan (2010) discusses the importance of analyzing not only school-based environments, but also social networking sites (SNSs) as a way for students to practice and improve upon their social skills.

Recently, researchers have begun to explore the effects of PMIs on social outcomes (Bowman-Perrott, 2009; Collins, Gresham, and Dart, 2016; & Presley and Hughes, 2000). It was found that students with disabilities who participated in peer-mediated interventions were more socially competent than those who did not. Similarly, students who have participated in structured PMIs made more academic and behavioral progress than non-participatory peers. The results indicate that peer-mediated interventions foster positive relationships and build social skills for students with disabilities to be successful across environments. Recent research has expanded inquiry beyond communication into conversational strategies, academic discourse, and behavioral regulation. However, in the few studies that address students with EBD, the PMIs have little structure compared to those implemented with students with ASD (Maggin, Wehby, Farmer, & Brooks, 2016). Additionally, much of the research on the efficacy of PMIs has been focused on students with Autism rather than students with EBD. In order to ensure success for students with EBD, these interventions should be modified in developmental, academic, and strategic ways. As educators begin to develop social skills interventions, it is crucial to consider the effects of PMIs at a high school level when determining their use with older students. While most of PMIs

have been conducted and evaluated for students with EBD or ASD at a middle school level, the research shows that PMIs conducted at a high school level primarily focus on conflict resolution and anger management strategies (Presley & Hughes, 2000). Although this is an essential focus for high school students with EBD, educators cannot forget to continue implementing other aspects of social skills curricula in their daily routines (Kaya, Blake, & Chan, 2013).

Interventions that address appropriate peer interactions (i.e. responding with relevant information, using appropriate language, understanding and using appropriate nonverbal cues, participating in academic discourse and group work, utilizing self-control) as well as social skills for transitional purposes (i.e. introducing oneself, interviewing others, problem-solving skills) could be taught in peer-based interactions.

Steps to Design, Implement, and Assess PMIs

Teachers at the elementary and middle-school levels have used PMIs to develop social skills and promote positive relationships. In order to implement PMIs at the high school level, educators need to consider the different aspects of the intervention that were successful and how to adapt them to the high school setting. The following steps detail how to systematically create, implement, and assess a PMI for students with EBD in a high school setting.

Creating the Intervention

Step 1: Identify the target skill. Teachers must first identify the skill that will have the biggest impact on the student based on their strengths and needs. Robinson and Myck-Wayne (2015) discussed the importance of considering age-appropriate social behaviors, the needs of the individual students, and the priorities of the parent when determining the target skill for social skills interventions.

To find these target behaviors, educators should consider:

1. What skills are needed for this child to be successful with peers immediately?
2. What skills are needed for this child to be successful with peers in the future?
3. What skills does this child need to be successful with siblings or future colleagues?
4. What functional skills or behaviors are affecting this child's performance?

This targeted skill could be linked to data from assessments, informal or formal observations, interviews with students or teachers, discussions with parents or family members, or reviews of Individualized Education Programs or other evaluation records (Zhang, 2011).

Step 2: Conduct student interest surveys. Prior to selecting and pairing peer mediators, the teacher should disseminate student interest surveys to all students in the class. Scruggs, Mastropieri, and Marshak (2012) investigated student perceptions of social skills interventions and found that both the students in special education and general education prefer prior relationships with their partner before being paired. Teachers can help foster these relationships by conducting student interest surveys to find out what students will work best together, who will be comfortable with each other, and who has similar interests.

Step 3: Select peer mediators. Peer mediators need to be students who will promote positive social interactions with the target population. These students need to appropriately build and maintain positive relationships with their mentee **(**Kamps, Mason, Thiemann-Bourque, Feldmiller, Turcotte, & Miller, 2014) and develop a level of comfort that is difficult for several high school students to reach. These students could be selected or nominated from their teacher(s), a leadership class, or a student organization such as Student Council or National Honor Society.

Once possible peer mediators are selected, teachers need to meet with them to discuss the intervention. All aspects of the intervention should be reviewed, including confidentiality. No names should be revealed until student and parent consent forms are signed and at no point during the intervention should student diagnosis or disability be revealed.

Step 4: Train peer mediators. Prior to the start of the intervention, teachers need to provide social skills training to the peer mediators. This type of instruction will differ based on the behaviors being targeted during the intervention. Some teacher and mediator pairs may model and role-play situations that the mediator will translate into lessons with the student. Others may work together to create a scripted curriculum with sentence stems and picture prompts to signal the student in varying situations. Teachers need to work with mediators on how to set goals with students, how to reflect on goals, and how to give immediate feedback. Training mediators on how to use rubrics, tracking sheets, and reflection charts is also beneficial depending on the target behavior.

Step 5: Determine the mode of delivery. Peer mediation at the high school level can manifest in a variety of ways. In this setting, the method of delivery is reliant on class schedules and school set-up. Teachers need to consider the frequency with which mediators and students see each other and the intensity of mediation that is needed. Similarly, it is crucial to consider the setting in which the behaviors are occurring. For a student who needs more frequent mediation in academic settings, the mode of delivery may be to have the mediator serve as a tutor, model, and prompter during class periods. For a student who needs mediation in unstructured settings, the mode of delivery may be to have the mediator act as a guide to accompany the student between classes and to eat with during lunch. Strategic planning of mediators and students puts all individuals on the path to success. Refer to Table 1 for recommended delivery methods.

Table 1
Possible Modes of Delivery for Peer-Mediators in Various School-Based Settings.

If target behavior is exhibited in:	Consider these modes of delivery:
Teacher-led instruction	Mediator as a seating partner to give prompts when answering aloud
	Mediator as a support for who provides praise or feedback
	Mediator as a support to provide visual cues
Small-group/cooperative settings	Mediator as group member to initiate conversation
	Mediator as group member to provide non-verbal or verbal prompts
	Mediator as a support to provide visual cues
Independent practice	Mediator as a nearby peer model
	Mediator as a support who provides prompts, praise, or feedback
Unstructured environments	Mediator as a guide between classes to initiate conversation
	Mediator as a seating partner during lunch who provides social support
	Mediator as a guide before and after school

Step 6: Determine the mode of tracking. Students will exhibit different behaviors at varying intensities. Based on the target behavior and how intense it is, teachers and mediators need to determine the frequency of monitoring, reporting, and feedback. At the high school level, the frequency of check-in can range from each period, to multiple times a day (i.e., before and after school or before school, at lunch, and after school), every few days, or weekly. This can also be changed or updated as the student makes progress towards his or her goals.

Equally important to the frequency of tracking is the accessibility of the monitoring sheet. When considering social relationships in a high school setting, it is crucial to consider social hierarchy and stigmatization. To allow students and mediators to track progress, teachers need to consider reporting methods that are discreet. If students attend a Bring Your Own Device (BYOD) or 1:1 Device School, a tracking and reporting method could be created in an application on the device. For students who prefer paper-and-pencil methods, a wallet-sized foldable card would allow students to have their report readily accessible yet not easily seen (see Figure 1). Similarly, if a binder system is already in place at the school, students could use a progress report that is kept in the binder and accessed as necessary.

Student Name: Mark Smith

Target Behavior: Initiate conversation in a small-group setting

Daily Goal: During small-group instruction in Government class, I will be able to respond to my peers twice in a ten-minute work time.

	Monday	Tuesday	Wednesday	Thursday	Friday
Times Responded	II	III	II	II	III
Prompts Used	IIII	II	III	III	IIII

Goal Reached: Yes

Reward Chosen: Lunch outside with friends

Figure 1: Sample Wallet-Sized Foldable Card as a Mode of Tracking.

Note. Student name is a fictional.

Implementing the Intervention

Step 7: Collect baseline data. It is crucial to have an idea of where the student's skills are prior to the intervention in order to analyze the growth being made during and after the intervention. The type of data that needs to be collected (i.e., frequency, interval, duration) is dependent on the behavior that is being exhibited and should be collected a minimum of three times before moving forward with the intervention. Teachers also need to consider the environment(s) that the behavior is occurring in and if data needs to be collected in more than one location.

Step 8: Initiate peer mediation. After baseline data is taken, the mediators need to initiate conversation with their students. This should occur in the setting where they will first be meeting daily so it becomes a natural part of their daily routine. To develop comfort and trust, this method should start and remain one-on-one until the student is working towards independence, maintenance, and generalization (see steps 11 and 12).

Because students may feel uncomfortable or unnatural, peer mediators may need to provide more prompting or initiate more communication at first. It is important for the teachers to have front-loaded the mediators with training for conversation starters, sentence frames, and information from the student interest surveys to help mediators build the relationships from the start.

Step 9: Apply bi-weekly focus groups. Teachers and mediators need to meet to reflect on the intervention and make strategic decisions to improve the effectiveness of it. This would be a whole-group meeting with the focus of sharing progress across mediators, brainstorming ideas, and troubleshooting concerns. This meeting time could also be a time to teach or re-teach strategies to mediators, create or update tracking sheets or rubrics, or share resources. As students begin to move toward independence, the target students could also be invited to demonstrate and practice their skills in a non-threatening environment with model peers.

Assessing the Intervention

Step 10: Collect data. Mediators and teachers (as purely observers and facilitators) need to document student progress to determine if the intervention is being effective. It is important that the data from tracking and progress reporting is being systematically documented, analyzed, and used to inform decisions. Mediators and teachers need to analyze the data together to ensure that the student is making adequate progress and should not remove the intervention too quickly.

Step 11: Encourage independence. As the data continues to show growth, the student and peer work toward reaching mastery. To do this, the teacher guides the peer mediator through fading techniques to promote independence. These strategies will differ depending on the target behavior, but may include moving from sentence frames to picture prompts, bi-weekly to weekly check-ins, or mediation through proximity. To successfully become autonomous, all supports that are put in place during the intervention need to be removed slowly and independently of one another. This process could occur over several days or weeks and will vary from student to student.

Step 12: Maintenance and generalization. High school is a place where social skills are an essential component of daily life. The teacher evaluates the effectiveness of the intervention by first ensuring the skill is maintained without the peer mediator for days or weeks after mastery

and independence has been achieved. Next, teachers assess generalization by observing or gathering data in a new setting. Due to the nature of changing classes, unstructured time, and extracurricular activities, there are several opportunities to assess generalization. For high schoolers, this could also be generalizing the learned skill to popular social media platforms such as Facebook, Instagram, Snapchat, and Twitter, or using their skills with peers appropriately through text messaging. Transferring these skills to popular and largely used platforms shows that students are not using them in settings in which they were not taught and monitored, and also using them in a way that is socially accepted and commonly used with their new-found peer groups.

Conclusion

Peer-mediated interventions have been shown to increase students' social and academic skills relative to elementary and secondary-aged students. Results from the research indicate that interventions with peer mediators aid in the improvement of social, behavioral, and academic concerns. Peer-mediated interventions that lack structure and proper training do not show sufficient growth in social, behavioral, and academic areas. Using the structure and student training in the 12 steps outlined in this paper, PMIs can help students to make adequate growth in the respective areas and could be equally effective for all students with EBD, including those at a secondary level.

References

Collins, T. A., Gresham, F. M., & Dart, E. H. (2016). The effects of peer-mediated check in/check-out on the social skills of socially neglected students. Behavior Modification, 40(4), 568-588. doi:10.1177/0145445516643066

Cullinan, D., & Sabornie, E. J. (2004). Characteristics of emotional disturbance in middle and high school students. Journal of Emotional and Behavioral Disorders, 12(3), 157-167. doi:10.1177/10634266040120030301

Farmer, T. W., Chen, C., Hamm, J. V., Moates, M. M., Mehtaji, M., Lee, D., & Huneke, M. R. (2016). Supporting teachers management of middle school social dynamics: The scouting report process. Intervention in School and Clinic, 52(2), 67-76. doi:10.1177/1053451216636073

Griese, E., & Buhs, E. (2014). Prosocial behavior as a protective factor for children's peer victimization. Journal of Youth & Adolescence, 43(7), 1052-1065. doi:10.1007/s10964-013-0046-y

Hogue, A., & Dauber, S. (2011). Diagnostic profiles among urban adolescents with unmet treatment needs: Comorbidity and perceived need for treatment. Journal of Emotional and Behavioral Disorders, 21(1), 18-32. doi:10.1177/1063426611407500

Kauffman, J. M., & Landrum, T. J. (2012). Characteristics of emotional and behavioral disorders of children and youth (10th ed.). Upper Saddle River, NJ: Pearson.

Kamps, D., Mason, R., Thiemann-Bourque, K., Feldmiller, S., Turcotte, A., & Miller, T. (2014). The use of peer networks to increase communicative acts of students with autism spectrum disorders. Focus on Autism and Other Developmental Disabilities, 29(4), 230-245.

Morgan, J. J. (2010). Social networking web sites teaching appropriate social competence to students with emotional and behavioral disorders. Intervention in School and Clinic, 45(3), 147-157. doi:10.1177/1053451209349533

Pierce, C. D., Nordness, P. D., Epstein, M. H., & Cullinan, D. (2016). Applied examples of screening students at risk of emotional and behavioral disabilities. Intervention in School and Clinic, 52(1), 6-11.

Presley, J. A., & Hughes, C. (2000). Peers as teachers of anger management to high school students with behavioral disorders. Behavioral Disorders, 25(2), 114-130.

Robinson, S., & Myck-Wayne, J. (2015). A teacher training model for improving social facilitation in the inclusive program. Young Exceptional Children, 19(1), 16-26. doi:10.1177/1096250615586028

Sabornie, E. J., Kauffman, J. K., & Cullinan, D. A. (1990). Extended sociometric status of adolescents with mild handicaps: A cross- categorical perspective. Exceptionality, 1, 197–209. doi:10.1080/09362839009524754

Schonert-Reichl, K. A. (1993). Empathy and social relationships in adolescents with behavioral disorders. Behavioral Disorders, 18, 189–204.

Scruggs, T., Mastropieri, M. A., & Marshak, L. (2012). Peer-mediated instruction in inclusive secondary social studies learning: Direct and indirect learning effects. Learning Disabilities Research and Practice, 27(1), 12–20. doi:10.1111/j.1540-5826.2011.00346.x

Wagner, M., Kutash, K., Duchnowski, A. J., Epstein, M. H., and Sumi, W. C. (2005). The children and youth we serve: A national picture of the characteristics of students with emotional disturbances receiving special education. Journal of Emotional and Behavioral Disorders, 13(2), 79-96. doi:10.1177/10634266050130020201

What Works Clearinghouse. (2007b). Peer tutoring and response groups. Retrieved from http://ies.ed.gov/ncee/wwc/interventionreport.aspx?sid=363

What Works Clearinghouse. (2010a). Classwide peer tutoring. Retrieved from http://ies.ed.gov/ncee/wwc/interventionreport.aspx?sid=83

What Works Clearinghouse. (2010b). Peer-assisted learning strategies. Retrieved from http://ies.ed.gov/ncee/wwc/interventionreport.aspx?sid=366

Zhang, K. C. (2011). Let’s have fun! Teaching social skills through stories, telecommunications, and activities. International Journal of Special Education, 26(2), 70-78.

About the Author

Danielle Feeney, M.Ed., is a doctoral student at the University of Nevada, Las Vegas, 4505 South Maryland Parkway, Las Vegas, NV, 89154; email: *feeney@unlv.nevada.edu*. Her research interests include academic and behavioral supports for students with emotional behavioral disorders, students with learning disabilities, and English Language Learners.

Fostering Reading Motivation in Self-Contained Classrooms for Students with Emotional and Behavioral Disorders

Heidi R. Cornell, Ph.D.
Wichita State University

Abstract

This study sought to explore and describe the extent to which research based practices were employed for cultivating an environment that fostered reading motivation in self-contained classrooms for students with emotional and behavioral disorders (EBD). To accomplish this, a descriptive multiple case study design was employed in which data were collected in three self-contained elementary classrooms for students with EBD. Findings suggested that the environment for learning in these classrooms has likely not changed much since Jane Knitzer's classic study in 1990. This study serves as a call to researchers and teacher educators to increase attention on the education and treatment of children and youth with EBD being served in self-contained classrooms.

Fostering Reading Motivation in Self-Contained Classrooms for Students with Emotional and Behavioral Disorders

A broad literature base continues to document the poor academic outcomes of children and youth with emotional and behavioral disorders (EBD) (Anderson, Kutash, & Duchnowski, 2001; Blackorby & Wagner 1996; Carran, Murray, Kellner, & Ramsey, 2014; Nelson, Benner, Lane, & Smith, 2004; Prince, Hodge, Bridges, & Katsiyannis, 2017; Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005; Wagner, Newman, Cameto, & Levine, 2006; Wehby, Lane, & Falk, 2003; Wiley, Siperstein, &Forness, 2011). In response to these poor outcomes, some recent recognition has been given to the importance of supporting behavioral and academic needs of students with EBD simultaneously (e.g., Anderson et al., 2001; Lane, Barton-Arwood, Nelson, & Wehby, 2008; Maggin, Wehby & Gilmore, 2016; Wiley et al., 2011; Wehby et. al, 2003). In fact, there appears to be increased focus on identifying effective practices and strategies in a range of academic areas for this population of students (e.g., Burke, Boon, Hatton, & Bowman-Perrot, 2015; Losinski, Cuenca-Carlino, Zablocki, & Teagarden, 2014; Mulcahy, Krezmien, & Travers, 2016). However, more research is needed to understand how to effectively teach this population of students in the context of the self-contained classroom.

Arguably, students with EBD who are served in self-contained settings have the most intensive needs and are the hardest to teach. Furthermore, teaching students with EBD in the self-contained classroom might be one of the most difficult teaching positions. Teachers who work in self-contained classrooms are faced with multiple demands while remaining responsible for designing and implementing curriculum, behavior intervention techniques, and for determining when students are ready to be included in general education (Bettini, Cumming, Merrill, Brunsting & Liaupsin, 2016; Bettini, Kimerlin, Park & Murphy, 2015; Grosenick, George, George & Lewis, 1991). The purpose of self-contained placements for students with EBD are to provide intensive academic and behavioral services that are not available in the general

education classroom setting (Lane, Wehby, Little, & Cooley, 2005). Although self-contained settings are meant to provide intensive services so students can make adequate progress, research has shown that academic and behavioral deficits continue to be a problem for students placed in these restrictive settings (Denny, Gunter, Shores, & Campbell, 1995; Lane et al., 2008; Lane et al., 2005; Mattison & Blader, 2013).

Literacy and Teaching Reading in Self-Contained Classrooms for Students with EBD

Academic success is hypothesized to be dependent upon learning how to read (Bost & Ricconmini, 2006; Chall, 1983; Kepe, Foncha & Maruma, 2017; Rivera, Al-Otaiba, & Koorland, 2006; Sparks, Patton, & Murdoch, 2014). Rivera and collegues (2006) pointed out, "Reading is the gateway to content area knowledge and the ability to complete grade level academic work" (pg. 323) and may also provide the basis for later academic achievement (Chall, 1983; Sparks et al., 2014). More specifically, the reading difficulties among children and youth with EBD have been well documented (Wanzek, Al Otaiba, & Petscher, 2014; Wei, Blackorby, & Schiller, 2011; Yakimowski, Faggella-Luby, Kim, & Wei, 2016). For example, students with EBD typically perform at one to two grade levels behind their peers in reading (Greenbaum, Dedrick, Friedman, Kutash, Brown, Lardierh et al., 1996; Nelson et al., 2004; Yakimowski et al., 2016). Additionally, it has been noted that these reading difficulties are associated with anti-social behavior. Thus, some evidence has suggested that improving academic achievement, particularly in the area of reading, may improve the social or classroom behavior of children with EBD (Lane, O'Shaughnessy, Lambros, Gresham, & Beebe-Frankenberger, 2001; Roberts, Solis, Ciullo, McKenna, & Vaughn, 2015).

Little is known about effective practices for teaching reading to students with EBD in the context of a self-contained classroom. To date, there are no studies that exist that examine practices that cultivate classroom environments in which student motivation to read is fostered, which is an equally important component of effective reading instruction (Capen, 2010; Gambrell, 2011). Given that students with EBD who are educated in self-contained classrooms receive their primary reading instruction in these settings, studies are needed that examine the cultivation of a learning environment that motivates students to read.

Gambrell (2011) posited seven research-based practices that collectively cultivate an environment that fosters motivation to read: 1) Instructional practices that focus on helping students find value and meaning in reading tasks and activities; 2) Utilizing literacy related incentives that reflect the value and importance of reading; 3) Providing students with opportunities to engage in sustained reading; 4) Providing students with opportunities to make choices about what they read; 5) Creating opportunities to socially interact with others about text; 6) Creating opportunities for students to experience progress and competence in reading; and 7) Having a literacy-rich classroom environment that invites students to engage in the rich literacy environment. These seven research-based practices were used as the framework for studying the classroom environments included as part of this study.

Using Gambrell's seven practices as an operational framework for investigating the self-contained classroom environment, this study sought to explore and describe the extent to which these research-based practices were employed for cultivating a classroom environment that

fostered reading motivation in self-contained classrooms for students with EBD. Thus, this study was driven by the following research question:

Research Question #1: To what extent are research-based practices for cultivating an environment that fosters reading motivation evident in self-contained classrooms for students with EBD?

Method

Selection of the Self-Contained Classrooms

Critical case sampling, a type of purposeful sampling, was the sampling technique used to select cases for this study (Patton, 2002). Cases were defined as elementary self-contained classrooms that served children with EBD. The following criteria had to be met in order to be included as a case in this study: 1) 60% or more of the student's instructional day was spent in the self-contained classroom setting; 2) both the classroom teacher and the special education director indicated that students were placed in the self-contained classroom setting for behavioral reasons; and 3) students were identified as having Least Restrictive Environment state codes that indicated self-contained placement. As such, self-contained classrooms were selected that were next on the continuum of placement options after students had been considered for special education services in the general education classroom or a resource classroom for a portion of the day.

To obtain a critical case sample for this study, and after IRB approval was received from the university, the researcher asked the state Department of Education (DOE) for a list of all special education directors in the state. Next, an email was sent to all special education directors, which explained the study and sought permission to recruit teachers in elementary self-contained classrooms for students with EBD. Recruitment emails were then sent to teachers. Three classrooms, located in three different educational regions of the state, were selected for this study in March 2015.

Description of Setting and Participants

Table 1 highlights the location and demographic information specific to the setting of each classroom. The researcher was not able to locate data at the school level for Case 2 on the state department of education website. This classroom is one of two elementary and two middle school special education classrooms located in the back of the district special education administration building. Case 1 was located in the west central educational region of the state. Case 2 was located in the east central educational region of the state, and Case 3 was located in the northwest educational region. Furthermore, the majority of students in the school in both Case 1 and Case 2 identified as white. In contrast, the majority of students in the Case 3 school identified as African American. A higher percentage of students received free/reduced lunch in the Case 3 school. The percentage of students who received special education services was relatively similar across all three cases. Case 1 and Case 3 had a graduation rate slightly lower than the state average of 90%. Finally, the percentage of students in the school who passed the statewide exam was at or slightly higher than the state average of 74.7% in Case 1 and Case 2, and slightly lower in Case 3.

Table 1
Location and Demographics Within Each Case

	Case 1	Case 2	Case 3
Educational Region	West Central	East Central	Northwest
School Corporation(s)	n=4,486	n=20,924	n=7,566
White	93.6%	88.9%	.9%
Black or African American	.5%	1.37%	92.8%
Multiracial	2.9%	3.16%	3.9%
Hispanic	2.2%	4.61%	2.3%
Asian	.4%	1.75%	0%
Pacific Islander	0%	.11%	0%
Free/Reduced Lunch	40.9%	35.3%	80.2%
Special Education	12.5%	14%	14%
Passed ISTEP	77.7%	80.7%	47.7%
Graduation Rate	74.7%	90.7%	85.7%
Elementary School	n=324	NO DATA	n=524
White	90.1%		0%
Black or African American	.9%		92.6%
Multiracial	3.4%		6.4%
Hispanic	.4%		1%
Asian	.6%		
American Indian	.9%		
Free/Reduced	49.7%		93.8%
Special Education	16%		11%
Passed ISTEP	76.8%		71.1%

Table 2 includes the gender, grade levels, and disability categories for the students in each Case. Case 1 had five students all of whom were male. There was one kindergarten student, two first-grade students, one fourth-grade, and one-fifth grade student. The primary disability category for each of these students was Emotional Disturbance (ED), except for one, which was Other Health Impaired (OHI). Case 2 had seven students. Six of the seven students were male and one student was female. There were two kindergarten students, one first-grade student, and four second-grade students. One student had a primary disability category of ED; 3 OHI, and 3 Autism Spectrum Disorder (ASD). Two students identified as having ASD had a secondary disability category of ED. Lastly, Case 3 had a total of six students. Five of the six students were male and one student was female. There were three third grade students, two fourth grade students, and one sixth grade student. All students had a primary disability category of ED.

Table 2
Gender, Grade, and Disability Categories Within in Case

	Gender	Grade	Primary Disability	Secondary Disability
Case 1				
Student 1	M	Kindergarten	OHI	Speech Impairment
Student 2	M	1st Grade	ED	Speech Impairment
Student 3	M	1st Grade	ED	Speech Impairment
Student 4	M	4th Grade	ED	
Student 5	M	5th Grade	ED	ASD
Case 2				
Student 1	M	Kindergarten	OHI	
Student 2	M	Kindergarten	ED	
Student 3	M	1st Grade	OHI	
Student 4	F	2nd Grade	OHI	
Student 5	M	2nd Grade	ASD	
Student 6	M	2nd Grade	ASD	ED
Student 7	M	2nd Grade	ASD	ED
Case 3				
Student 1	M	3rd Grade	ED	
Student 2	M	3rd Grade	ED	
Student 3	F	3rd Grade	ED	
Student 4	M	4th Grade	ED	
Student 5	M	4th Grade	ED	
Student 6	M	6th Grade	ED	

Design of the Study

After IRB approval was received from the university, a descriptive multiple case study design (Patton, 2002) was employed in which data was collected from classroom observations, interviews, and the administration of the Classroom Literacy Environmental Profile (CLEP; Wolfersberger, Reutzel, Sudweeks, & Fawson, 2004) to answer the study research question. Each case was analyzed individually, followed by a cross-case analysis. A co-analyst was employed to assist with analyses. The primary analyst and the co-analyst first worked individually, analyzing data specific to the study research question and then met weekly to pool judgment and ensure similar and agreed upon findings.

Data Sources. Using Gambrell's (2011) identified research based practices as a framework in this study, data collected from the classroom observations was used to evidence the first six of Gambrell's indicated practices, while the CLEP was administered to evidence the seventh of Gambrell's practices. In addition, interviews were conducted with teachers after observations were complete as a secondary data source to strengthen findings. The interviews were guided by an interview protocol that focused on understanding teacher perceptions about their own beliefs and implementation of Gambrell's (2011) indicated practices. Thus, during analysis, interviews were used to triangulate data (Carter, Bryant-Lukosius, DiCenso, Blythe, & Neville, 2014) and support the findings yielded from observations and the CLEP. Collectively, the subsequent findings yielded rich information, grounded in data, about the extent to which research-based practices were employed for cultivating a classroom environment that fostered motivation to read.

Moreover, consistent with case study research designs, naturalistic observations were conducted to collect observational data by one member of the research team (Patton, 2005). A total of five consecutive full-day observations were conducted in each classroom. The number of observations used in this study was based on recommendations from the research literature (e.g. Levy, 2000; Allington & McGill-Franzen, 2004). The researcher created an observation protocol, organized by time and activity, to guide field notes. For each observation session, the researcher first chronicled the start time of the observation and documented the associated activity the teachers and each student were engaged in at that moment. A new time was documented when one participant changed activities and notation was made indicating that all other participants were still engaged in the previous activity. This allowed for the main researcher and the co-analyst to review observation notes during analyses to gain a comprehensive understanding of the activities all participants were engaged in during each session. In addition, specific details related to praise given by teachers were recorded to ensure data was collected that evidence Gambrell's (2011) framework. Last, the researcher took reflective field notes (Mulhall, 2003) that included the researcher's impressions gathered during the observations that could be used to expand the observation field notes shortly after each observation session.

As mentioned, the seventh of Gambrell's (2011) research-based practices was evidenced through the administration of the Classroom Literacy Environmental Profile (CLEP; Wolfersberger, et al., 2004). The CLEP is an instrument for measuring the "literacy richness" and literacy environment of elementary classrooms. The CLEP is composed of 33 items and two subscales. Subscale 1 focuses on the quantity and organization of print materials and literacy tools available in the classroom. Subscale 2 focuses on spatial organization and literacy interactions using print

materials and literacy tools in the classroom and whether or not the materials are arranged to invite students to engage in the literacy environment. Each item is rated on a 7-point Likert-type rating scale with 1 representing the lowest level of implementation and 7 representing the highest level of implementation. Pilot testing of the CLEP indicated that raters achieved acceptably low levels of error (0.10-0.05) and high levels of reliability (□=0.9) when rating the literacy richness of classroom environments. Thus, Wolfersberger et al. (2004) concluded that the CLEP is a reliable tool for evaluating the print richness of early childhood and elementary classrooms (Wolfersberger et al., 2004). The researcher administered the CLEP at a time when the students were not present in the room. In addition, the researcher took photographs of the classroom environment that were used to discuss and refine scores with the co-analyst as necessary.

Data Analysis. Both individual and cross-case analyses (Yin, 2014) were applied. Consistent with this approach, during the first phase of analysis, each individual case study was first treated as a "whole study" in that the research question was answered within each case first. Once each case was analyzed separately, during the second phase of analyses, individual case findings were then examined as part of the cross-case analysis. A co-analyst was employed in these analyses. This was a doctoral level student in special education who had experience working with students with EBD. The primary analyst and the co-analyst first worked individually, analyzing data specific to a particular research question and then met weekly to pool judgment and ensure similar and agreed upon findings.

More specifically, deductive content analysis (Elo & Kyngas, 2008) was the analytic strategy used to analyze the data in relation to the study research question. First, instances of reading related activities were coded. For the purposes of this study, a reading related activity was defined as any task in which students were engaged with letters, words, or text material or the purpose of the activity was to facilitate reading achievement. After all reading related activities were coded, a structured categorization matrix (Patton, 2002) was generated, in which categories of the matrix were associated with the first six of Gambrell's (2011) identified practices. The identified reading related activities were then analyzed to determine if they fit within one of the categories of the matrix. The seventh of Gambrell's practices was evidenced through the administration of the CLEP. The evidence categorized within the matrix and the CLEP scores converged to answer the study research question within each case, which was related to the extent to which the environment was cultivated such that it fostered motivation to read.

To confirm the findings yielded from observations and administration of the CLEP, interview data was analyzed using a content analysis approach (Elo, Kääriäinen, Kanste, Pölkki, Utriainen, & Kyngäs, 2014) to confirm evidence and increase the trustworthiness and credibility of the study findings (Shenton, 2004). More specifically, within each case, the text from interview transcripts was analyzed and categorized into the aforementioned matrix to either support or refute the evidence supported by observations and the CLEP related to the presence of Gambrell's (2011) practices that cultivate an environment that fosters the motivation to read.

After completing the analysis of each individual case, a cross-case analysis was conducted in which findings were compared and contrasted across cases. Specifically, an array of findings from each case was created so that instances of replication or contrasting cases could be found

(Yin, 2014). To reduce redundancy, findings from the cross-case analysis are shared in this article.

Ensuring Credibility

Lincoln & Guba (1985) argued that ensuring credibility is one of the most important factors in establishing trustworthiness because it deals with the whether or not the findings are congruent with reality. In this study, several strategies were used to enhance the credibility and trustworthiness of the findings. First and foremost, to ensure accurate recording of responses, all interviews were recorded (McMillan & Schumacher, 2006). In addition, methods were used during each interview to ensure the honesty of participants (Shenton, 2004). For example, each participant was given the opportunity to refuse to participate and, from the outset of each interview session, was encouraged to talk frankly. The researcher attempted to establish rapport with participants and ensured them that their data would be held confidential. In addition, the researchers employed member checks (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005), in that each teacher was given their interview transcript to review and confirm accuracy (or inaccuracy). Second, the experience of the researcher added a level of credibility to study findings that cannot be ignored. Shenton (2004) noted the importance of the "backgrounded, qualifications, and experience of the investigator". Some researchers have suggested that trust in the researchers is of equal importance to the adequacy of the procedures themselves (Alkin, Daillak, & White, 1979). Thus, the researcher's experience working as a teacher for nine years in a self-contained setting for students with EBD heavily contributes to the credibility of study findings. Last, during analyses the primary data collector employed a co-analyst who participated in initial data coding, category construction, and confirmatory analyses of data. The co-analyst contributes to establishment of credibility and trustworthiness in the findings through pooled judgment (Denzin & Lincoln, 2003).

Results and Discussion

To review, data were categorized during analysis to yield findings related to the presence of research-based practices for cultivating an environment for reading motivation (Gambrell, 2011). Table 3 highlights the results across the three cases. In the following sections, the results and discussion are organized by each of Gambrell's (2011) indicated research-based practices, which were used as the framework for analyzing the extent to which these classroom environments were cultivated to foster student motivation to read.

Instructional practices that help students find value and meaning in reading tasks and activities

To evidence instructional practices that help students find value and meaning in reading tasks and activities, the content and purpose of reading related activities were analyzed to determine if connections were made, in some way, between the reading activity and the student. Specifically, connections to individual student interest or situational interest created by the teacher were examined. Across all three cases there was indeed evidence of this practice. However, in the majority of these instances, the connections made were not a result of instructional practices purposefully employed by the teacher, but more a result of the textbook material having a focus on common interests among the students being taught.

Utilization of reading related incentives that reflect the value and importance of reading
Across all three cases there was no evidence of reading related incentives that reflected the value and importance of reading. Reading related incentives are either tangible or non-tangible. Although research supports the use of tangible reading related incentives (Marinak & Gambrell, 2008; Small, Arnone, & Bennett, 2017), non-tangible incentives, such as reading specific praise, are often supported most empirically (Anthuis, 2014; Small et. al, 2017, Gambrell, 2011; Lepper & Cordova, 1992). There are several possible explanations for the absence of these incentives in all three cases. In terms of tangible rewards, one possible explanation might be lack of available funding to help support the purchase of reading related incentives, such as books and bookmarks. Another possible explanation, which was drawn from the researcher's reflective field notes particularly for Case 2 and Case 3, is that the absence of this practice could be associated with the intense focus on external rewards and incentives used to manage behavior. Such focus might prevent even the thought of providing tangible incentives specifically related to reading. Perhaps these teachers don't understand the influence providing incentives that value the importance of reading could have on both academic and behavioral outcomes simultaneously.

In terms of non-tangible rewards, a possible explanation might again, at least for Case 2 and Case 3, be the intense focus on behavior and implementing specific behavior management plans. It is possible that teachers are so conditioned to respond and provide feedback related to improving the behavior of their students, that they forget to provide reading-specific praise to motivate their students. More research is needed to fully examine the effects that classroom behavior management plans and various strategies have on implementing research based instructional practices.

Lastly, the teachers in these classrooms simply may not have received the necessary training to understand the importance of this practice or how to implement it. Regardless, it is recommended that professional development opportunities be provided to assist these teachers and ensure that all teachers understand the significance of this practice and how it contributes to creating an environment that motivates students to read.

Opportunities provided for students to engage in sustained reading activities
Evidence of sustained reading activities was identified in Cases 2 and 3; however, this evidence was minimal. Given that sustained reading instructional activities operate along a continuum (Atwell, 2007; Gambrell, 2007; Reutzel & Juth, 2014), in this study, a sustained reading activity was broadly defined to encompass common features. Thus, it was evidenced when students were observed reading text material independently for at least 15 minutes. The broad definition used in this study allowed the researcher to capture sustained reading activities that were not necessarily considered best practice. For example, all such observations that were collected as evidence were associated with a subsequent assignment. Some researchers have supported that sustained reading activities are most effective when they are not associated with an assignment (Atwell, 2007; Gambrell, 2007; Reutzel & Juth, 2014). Additionally, the students did not choose the books during the times in which sustained reading was evidenced. Some researchers argue that students should be allowed to choose the books that they are engaged with during sustained reading (Atwell, 2007; Gambrell, 2007; Reutzel & Juth, 2014). As discussed previously, it is possible that solid evidence of sustained reading activities was not evident because of the lack of a rich literacy environment in all three cases. It is likely that a need for quality books made it

more difficult for teachers and less motivating for students to make choices about what to read. It may also be possible that these teachers do not understand the value of sustained reading activities.

Table 3

Evidence of Research-Based Practices that Cultivate Environments that Foster Reading Motivation by Case

	Case 1	Case 2	Case 3
Do instructional practices focus on helping students find value and meaning in reading tasks and activities?	• 3 of 5 activities showed evidence in which connections were made to the individual interest of the student. • Among 2 of 3 three activities, the connections made were not a result of instructional practices employed by the teacher, but more a result of the predetermined focus within the textbook material.	• 2 of 13 activities showed evidence in which connections were made to the individual interest of the student.	• 1 of 8 activities showed evidence in which connections were made to the individual interest of the student.
Are reading related incentives that reflect the value and importance of reading utilized?	• 0 evidence of students receiving tangible incentives that were related to reading.	• 0 evidence of students receiving incentives that reflect the value and importance of reading.	• 0 no evidence of students receiving incentives that reflect the value and importance of reading.
Are students provided with opportunities to engage in sustained reading activities?	• 0 activities that allowed students the opportunity to engage in sustained reading.	• 2 of 13 activities allowed students the opportunity to engage in sustained reading. Both of these activities consisted of a period of time in which students were engaged	• 1 of 8 activities allowed students the opportunity to engage in sustained reading.

		independently with the Raz-Kids program.	
Are students provided with opportunities to make choices about what they read?	• 0 opportunities in which students were purposefully given a choice about what to read.	• 0 opportunities in which students were purposefully given a choice about what to read.	• 0 opportunities in which students were purposefully given a choice about what to read.
Are opportunities created for students to socially interact with others about text being read?	• 3 of 5 activities related to reading provided an opportunity for students to socially interact with another person about the text they were reading. • However, in all three activities the social interaction was with the teacher who was facilitating a discussion related to the text.	• 4 of 13 activities related to reading provided an opportunity for students to socially interact with another person about the text they were reading. • However, in all four activities the social interaction was with the teacher who was facilitating a discussion related to the text. • Additionally, 1 of 4 activities engaged students socially in a negative experience.	• 3 of 8 activities related to reading provided an opportunity for students to socially interact with another person about the text they were reading. • However, in all three activities the social interaction was with the teacher who was facilitating a discussion related to the text.

Are there opportunities created for students to experience progress and competence in reading?	• 0 observed opportunities for students to experience progress and competence in reading.	• 1 of 13 activities related to reading provided an opportunity for students to experience progress and competence in reading. However, one student had a negative experience completing this activity and did not experience progress or competence.	• 0 observed opportunities for students to experience progress and competence in reading.
To what extent is the classroom environment literacy-rich such that students are invited to engage in the rich literacy environment?	• Subscale 1:3.5 out of 7, "minimal". • Subscale 2: 2.26 out of 7, "impoverished".	• Subscale 1: 3.55 out of 7, "minimal". • Subscale 2: 2.26 out of 7, "impoverished"	• Subscale 1: 2.27 out of 7, "minimal". • Subscale 2: 1.33 out of 7, "impoverished"

Lastly, sustained reading requires a certain level of stamina to remain actively engaged, by either reading or looking at pictures, and it might be difficult for this particular population of students. Thus, again, it is recommended that attention be paid to the number and quality of books in the self-contained classrooms as well as the professional development needs of the teachers who work in these classrooms, specifically in terms of literacy. Further research is needed to help these teachers with strategies to help students with EBD in self-contained settings build the necessary stamina required to engage in sustained reading activities.

Opportunities provided for students to make choices about what to read

Across all three cases there was no evidence that students were provided with opportunities to make choices about what to read. Allowing students to make choices is a powerful motivator (Parker, Novak, & Bartell, 2017; Rettig & Hendricks, 2000), particularly for students with EBD (Jolivette, Ennis, & Swoszowski, 2017; Shogren et al., 2004). A possible explanation for the absence of this practice could be that the richness of the literacy environment was lacking. In fact, the CLEP results in this study support this possibility, as scores revealed the literacy richness of the environment in all cases to be either "Minimal" or "Impoverished". Given the low score on the CLEP, it is very likely that there was not a wide variety of quality books and other text materials from which students could make choices. Thus, these teachers might not have felt it to be meaningful or motivating to have children choose from such a limited, low quality collection of books. Alternatively, again, these teachers simply may not have understood and valued the importance of allowing students opportunities to make choices about what they read. Regardless, a rich literacy environment is motivating and is needed to implement other practices, such as providing students with opportunities to make choices about what to read, specifically in self-contained classroom settings. Historically, professionals have focused on implementing practices to improve the behavior of students with EBD in self-contained settings (Bos, Coleman & Vaughn, 2002; Knitzer, Steinberg, & Fleisch, 1990; Rivera et al., 2006; Wehby et al., 2003; Wehby, Falk, Barton-Arwood, Lane & Cooley, 2003; Wehby & Kern, 2014). It is not surprising that perhaps little attention has or is being paid to these important environmental factors for improving academic achievement, specifically in the area of reading.

Opportunities provided for students to socially interact with others about text being read

Across all three cases there was indeed some evidence of students interacting socially with others about text, but in all instances, across all cases, the interaction was with an adult, not a peer. Furthermore, the interactions were typically comprised of a discussion related to helping the student comprehend the text to complete an assignment. Social interaction about text is thought to support motivation to read because it piques student's curiosity and promotes student interest and engagement (Turner and Paris, 1995; Rojas-Drummond, Mazon, Littleton, & Velez, 2012). Social interaction for the purposes of being able to complete an assignment or answer a question on a worksheet, arguably, does not pique students' curiosity nor promote student interest and engagement. Thus, one recommendation would be for opportunities to be purposefully created for students to socially interact about text, in more natural and conversational ways and with their peers, rather than adults. In fact, peer-mediated instruction is well supported in the literature to improve student engagement and academic achievement for all students (Dobbins, Gagnon, & Ulrich, 2014; Sperry, Neitzel & Engelhardt-Wells, 2010; Utley, Mortweet, & Greenwood, 1997; Wexler, Reed, Pyle, Mitchell & Barton, 2015), even students with EBD (Dunn, Shelnut, Ryan & Katsiyannis, 2017; Ryan, Reid, & Epstein, 2004). Given that poor social relationships with peers

is one of the identifiable and definable characteristics of students with EBD, it is recognized that social interaction with peers about text might be difficult to facilitate, specifically in self-contained settings. However, this interaction could also serve as practice for students to learn socially acceptable ways of communicating; the activity could potentially influence both academic and behavioral outcomes.

Opportunities created for students to experience progress and competence in reading
Creating opportunities to experience progress and competence in reading was evident in only Case 2, and it was minimal. Evidence of this practice consisted of only one activity on one specific day in which the teacher was "benchmarking" students. However, the "benchmarking" activity ended up being a negative experience for one of the three children with whom the teacher worked. The experience was negative for this student because she was punished by the teacher for refusing to answer a comprehension question, which asked about the chores she engaged in at her home. The teacher was unable to see the possibility that the student may have refused to answer the question because she did not do chores at home. Instead, the lack of answer given by the student was seen as defiant and her attitude was seen as disrespectful. The student was asked to spend some time in the time out chair.

With this said, often teachers conduct progress-monitoring sessions and communicate goals on a weekly, bi-weekly, or monthly basis. Given that the researcher only conducted five consecutive observations, it is possible that there were not enough observations to fully evidence this practice. However, creating opportunities to experience progress and competence also includes informal daily feedback related to reading tasks and activities (Elliott & Dweck, 1988; Kluger & DeNisi, 1996; Martin-Chang, 2017). Across all three cases, there was no evidence that teachers provided reading related feedback on a daily basis that would help students monitor their own progress.

Presence of a literacy-rich environment in which students are invited to engage in the rich literacy environment
The Classroom Literacy Environmental Profile (CLEP) yield two subscale scores. Across all three cases, the scores on the first subscale titled, *Provisioning the Classroom with Literacy Tools*, fell within the "minimal" range. A score within the minimal range indicates that there were several different types of literacy tools present, but not at the acceptable levels or abundantly supplied. In addition, a score of minimal on subscale one indicates that there were literacy tools to support the number of students in the classroom, but they may not have been in good working order, lacked complexity, or were developmentally inappropriate.

Across all three cases, the scores on the second subscale title, *Arranging Classroom Space and Literacy Tools, Gaining Students' Interest in Literacy Events, and Sustaining Students' Interactions with Literacy Tools*, fell within the "impoverished" range. A score of "impoverished" indicates that classroom environment provided "little support for literacy acquisition, that there was a bleak or stark quality in the classroom atmosphere due to random placement of only a few literacy tools, and that literacy was not identified as a valued goal" (Wolfersberger et al., 2004, p.271).

Conclusions and Implications

Collectively, findings suggest that, across all three cases, relatively poor environments existed for fostering reading motivation such that little evidence was found in which teachers were implementing practices that are known to foster motivation to read. Thus, these findings have several implications for the field and warrant recommendations for further study. First and most importantly, these findings highlight the need for an increased focus on the education and treatment of children and youth being served in self-contained classroom settings for students with EBD. More specifically, the poor environments found for fostering motivation to read coupled with the rigid behavior management practices evidenced through the researchers' reflective notes, suggest that it is likely that little has changed in self-contained settings for this population of students since Jane Knitzer's classic study in 1990. For example, Knitzer and her colleagues found the dominant EBD curriculum to be about controlling the behaviors of children (Knitzer et. al, 1990). They coined the phrase "curriculum of control" to describe the learning environment in self-contained EBD classroom setting, which is the merging of curriculum and behavior management. They also found that that teaching strategies used by teachers in self-contained classroom settings were limited and often ineffective and that teachers failed to adapt the curriculum to the individual differences, styles, and needs of students. Broadly, in terms of the academic learning environment, Knitzer and her colleagues (1990) found a "general lack of educational vitality and imagination."

Broadly, further research, conducted specifically in self-contained settings, is needed. The unique challenges and barriers to implementing research-based practices in these settings needs to be fully understood. In addition, research is needed to compare learning environments in general education classrooms to those of self-contained classrooms for students with EBD. This comparison will allow for a more nuanced understanding of why such poor environments existed in these classrooms.

In general, more research is needed to gain a comprehensive and in- depth understanding about what teachers working in self-contained settings know about research-based practices for academic and behavioral learning specific to this type of classroom. It would also be beneficial for researchers to conduct an in-depth qualitative exploration into how these teachers acquired their beliefs. Findings from studies such as these would help researchers and teacher educators create more focused courses, programs, and professional development opportunities.

To further support the need for training in these settings, the behavioral needs of the children and youth being served in these classrooms are more intense and the demands asked of these teachers are numerous and often complex, such that some experts in the field have expressed concern that too much is expected of these teachers (Zabel, Kaff, & Teagarden, 2011), yielding poor working conditions (Bettini, et al., 2016; Bettini, et al., 2015). Some suggest that the intensity and services these teachers are expected to provide requires a unique or enhanced set of skills to be successful (Prather-Jones, 2011). Thus, this is likely contributing to the high attrition rate of teachers working in these classrooms (Albrecht, Johns, Mounsteve, Olorunda, 2009; Billingsley, 2005). These factors, in combination with the findings from this study allow for one to theorize that with better trained teachers who are well supported by professionals with an understanding of how to work in these classrooms, student progress is more likely to happen. Thus, future research should focus on the knowledge and skills needed to teach in these classrooms so that a

specially designed curriculum can be created to train and support these teachers before and after they enter the field.

There are several limitations that should be considered within the current study. First, being that this study is a multiple case study, by design, results only included data from three classrooms and should be interpreted with caution. However, the reader should keep in mind that the intent of this study was to explore and describe, and to develop further questions to be answered through more rigorous research; the intent was not to describe generalizable findings.

The study results potentially could have been improved if multiple researchers had been involved during observation. This would have allowed for multiple perspectives in addressing the same question and could have provided a checks-and-balances system for reliability and validity of study findings (McMilliam & Schumacher, 2006). More specifically, multiple researchers during the collection of observational data could have allowed the researcher to conduct inter-rater reliability analyses, thereby increasing the reliability of these findings. However, it must be noted that it is also likely that the presence of multiple researchers in these classrooms would have created an undesirable distraction. Although limitations related to reliability exist, the experience of the researcher can add a level of credibility to study findings, which should not be ignored. For example, Shenton (2004) highlighted several recommended provisions to improve confidence that researchers have accurately recorded the phenomenon under scrutiny. One of these is to consider the "background, qualifications, and experience of the investigator". Alkin, Daillak and White (1979) went as far to suggest that, in qualitative research, a scrutinizer's trust in the researcher is of equal importance to the adequacy of the procedures themselves. Thus, although the limitation of reliability exists in this study, the researcher's experience working as a teacher for nine years in a self-contained setting for students with EBD must be taken into consideration when considering the credibility of the study findings. In addition, it is likely that the researcher would not have obtained permission to conduct the study with a second observer in the classroom as this would have been an increased distraction for the teacher and the students.

Lastly, results of this study could have been improved if comparison was made to general education classroom settings within the same school or even school district. Without this comparison, caution must be made, as it is difficult to determine if the need is only in self-contained settings or if the issue is more systemic in nature and broad professional development is needed. However, it is important to note that the study design did indeed allow for the researcher to generate hypotheses and ideas for further inquiry, which was the broad goal of this study.

Overall, this study serves as a call to researchers**,** teacher educators, and all education professionals highlighting the need to focus attention on the education and treatment of young people being served specifically in self-contained settings. Historically, students with EBD have not performed well in school (Bradley, Doolittle, & Bartolotta, 2008). There are several factors, both internal and external to schools that likely play a role in the success of students with EBD, but regardless, attention must be paid to the education and treatment of these young people while they are at school. In addition, although inclusion is ideal, self-contained classrooms are clearly not going away. Thus, self-contained classrooms must be a place where students can go to get

the support they need and a place families and students can find hope. Without hope, these students have mostly experiences of failure and lack of success. Understanding both the contributors to the poor outcomes that continue to exist and strategies for addressing these outcomes should become a primary focus for researchers. Lastly, it is equally important for teacher educators to increase focus on training and education of future and present teachers working specifically in self-contained settings and alternative settings for students with EBD. Teaching in a self-contained classroom, specifically for students with EBD is not easy. Teachers need to be well prepared to deal with the multiple demands required of them while working in this setting. This preparation can be achieved through quality, focused training programs, professional development opportunities, and mentoring opportunities. In sum, there is a considerable amount of work to be done to improve the education and treatment of young people with EBD who are being educated in self-contained settings.

References

Albrecht, S. F., Johns, B., Mounsteven, J., & Olorunda, O. (2009). Working conditions as risk or resiliency factors for teachers of students with emotional and behavioral disabilities. *Psychology in the Schools, 46*(10), 1006–1022.

Alkin, M. C., Daillak, R., White, P., & White, P. (1979). *Using evaluations: Does evaluation make a difference?* Beverly Hills, CA: Sage publications.

Allington, R. L., & McGill-Franzen, A. N. N. E. (2004). Looking back, looking forward: A conversation about teaching reading in the 21st century. *Theoretical models and processes of reading, 5*, 5-32.

Anderson, J. A., Kutash, K., &Duchnowski, A. J. (2001). A comparison of the academic progress of students with EBD and students with LD. *Journal of Emotional and Behavioral Disorders, 9*(2), 106-115.

Anthuis, M. (2014). The effect of extrinsic rewards and intrinsic motivation on student reading and learning. Unpublished Dissertation.

Atwell, N. (2007). *The reading zone: How to help kids become skilled, passionate, habitual, critical readers*. Scholastic Teaching Resources.

Bettini, E. A., Cumming, M. M., Merrill, K. L., Brunsting, N. C., & Liaupsin, C. J. (2016). Working Conditions in Self-Contained Settings for Students with Emotional Disturbance. *The Journal of Special Education,* 0022466916674195.

Bettini, E., Kimerling, J., Park, Y., & Murphy, K. M. (2015). Responsibilities and instructional time: Relationships identified by teachers in self-Contained classes for students with emotional and behavioral disabilities. *Preventing School Failure: Alternative Education for Children and Youth*, *59*(3), 121-128.

Billingsley, B. S. (2005). *Cultivating and keeping committed special education teachers: What principals and district administrators can do?* Thousand Oaks, CA: Corwin Press.

Blackorby, J., & Wagner, M. (1996). Longitudinal postschool outcomes of youth with disabilities: Findings from the National Longitudinal Transition Study. *Exceptional children*, *62*(5), 399-413.

Bos, C. S., Coleman, M., & Vaughn, S. (2002). Reading and students with E/BD: What do we know and recommend. *Interventions for Children with or at Risk for Emotional and Behavioral Disorders*, 87-103.

Bost, L. W., & Riccomini, P. J. (2006). Effective instruction: An inconspicuous strategy for dropout prevention. *Remedial and Special Education*, *27*(5), 301-311.

Bradley, R., Doolittle, J., & Bartolotta, R. (2008). Building on the data and adding to the discussion: The experiences and outcomes of students with emotional disturbance. *Journal of Behavioral Education*, *17*(1), 4-23

Brantlinger, E., Jimenez, R., Klingner, J., Pugach, M., & Richardson, V. (2005). Qualitative studies in special education. *Exceptional children*, *71*(2), 195-207.

Burke, M. D., Boon, R. T., Hatton, H., & Bowman-Perrott, L. (2015). Reading interventions for middle and secondary students with emotional and behavioral disorders: A quantitative review of single-case studies. *Behavior Modification*, *39*(1), 43-68.

Capen, R. (2010). The role of the teacher and classroom environment in reading motivation. *Illinois Reading Council Journal*, *38*(4), 20-25.

Carter, N., Bryant-Lukosius, D., DiCenso, A., Blythe, J., & Neville, A. J. (2014, September). The use of triangulation in qualitative research. In *Oncology nursing forum* (Vol. 41, No. 5).

Carran, D., Murray, S., Kellner, M., & Ramsey, C. (2014). Two Year Outcomes of Students with Severe Emotional/Behavioral Disabilities Exiting Nonpublic Special Education Facilities in Maryland and New Jersey. *New Horizons for Learning*, *11*(1).

Chall, J.S. (1983). *Stages of reading development*. New York: McGraw-Hill

Denny, R. K., Gunter, P. L., Shores, R. E., & Campbell, R. C. (1995). Educational placements of students with emotional and behavioral disorders: What do they indicate? In JM Kauffman, JW Lloyd, DP Hallahan, & TA Astuto (Eds.), Issues in educational placement: Students with emotional and behavioral disorders (pp. 119-144).

Denzin, N. L., & Lincoln, Y. S. (2003). *Collecting and interpreting qualitative materials*.

Dobbins, A., Gagnon, J. C., & Ulrich, T. (2014). Teaching geometry to students with math difficulties using graduated and peer-mediated instruction in a response-to-intervention model. *Preventing School Failure: Alternative Education for Children and Youth*, *58*(1), 17-25.

Dunn, M. E., Shelnut, J., Ryan, J. B., & Katsiyannis, A. (2017). A Systematic Review of Peer-Mediated Interventions on the Academic Achievement of Students with Emotional/Behavioral Disorders. *Education and Treatment of Children*, *40*(4), 497-524.

Elliott, E. S., &Dweck, C. S. (1988). Goals: an approach to motivation and achievement. *Journal of Personality and Social Psychology*, *54*(1), 5.

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of advanced nursing*, *62*(1), 107-115.

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: a focus on trustworthiness. *Sage Open*, *4*(1), 2158244014522633.

Gambrell, L. (2007). Reading: Does practice make perfect? *Reading Today*, *24*(6), 16.

Gambrell, L. B. (2011). Seven rules of engagement: What's most important to know about motivation to read. *The Reading Teacher*, *65*(3), 172-178.

Greenbaum, P. E., Dedrick, R. F., Friedman, R. M., Kutash, K., Brown, E. C., Lardierh, S. P., et al. (1996). National adolescent and child treatment study (NACTS): Outcomes for children with serious emotional and behavioral disturbance. *Journal of Emotional and Behavioral Disorders, (4),* 130–146.

Grosenick, J. K., George, N. L., George, M. P., & Lewis, T. J. (1991). Public school services for behaviorally disordered students: Program practices in the 1980s. *Behavioral Disorders*, 87-96.

Jolivette, K., Wehby, J. H., Canale, J., & Massey, N. G. (2001). Effects of choice-making opportunities on the behavior of students with emotional and behavioral disorders. *Behavioral Disorders*, (2), 131-145.

Kepe, M. H., Foncha, J. W., & Maruma, M. W. (2017). Towards overcoming poor readership and building reading culture of in schools. *Gender and Behaviour*, *15*(2), 8790-8797.

Kluger, A. N., & DeNisi, A. (1996). The effects of feedback interventions on performance: a historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological Bulletin*, *119*(2), 254.

Knitzer, J., Steinberg, Z. D., & Fleisch, B. (1990). *At the Schoolhouse Door: An Examination of Programs and Policies for Children with Behavioral and Emotional Problems*. Bank Street College of Education.

Lane, K. L., Barton-Arwood, S. M., Nelson, J. R., &Wehby, J. (2008). Academic Performance of Students with Emotional and Behavioral Disorders Served in a Self-Contained Setting. *Journal of Behavioral Education*, *17*(1), 43-62.

Lane, K. L., Wehby, J. H., Little, M. A., & Cooley, C. (2005). Students Educated in Self-Contained Classrooms and Self-Contained Schools: Part II—How Do They Progress Over Time? *Behavioral Disorders*, 363-374.

Lane, K. L., O'Shaughnessy, T., Lambros, K. M., Gresham, F. M., & Beebe-Frankenberger, M. (2001). The efficacy of phonological awareness training with students who have externalizing and hyperactive-inattentive behavior problems. *Journal of Emotional and Behavioral Disorders*, *9*, 219-231.

Lepper, M. R., & Cordova, D. I. (1992). A desire to be taught: Instructional consequences of intrinsic motivation. *Motivation and Emotion*, *16*(3), 187-208.

Levy, S. (2000). *An Observational Study of Reading Instruction of Teachers for Students with Emotional/Behavioral Disorders* (Unpublished Doctoral Dissertation). UMI, Ann Arbor; MI.

Lincoln, Y.S. & Guba, EG. (1985). *Naturalistic Inquiry.* Newbury Park, CA: Sage Publications

Losinski, M., Cuenca-Carlino, Y., Zablocki, M., & Teagarden, J. (2014). Examining the efficacy of self-regulated strategy development for students with emotional or behavioral disorders: A meta-analysis. *Behavioral Disorders*, *40*(1), 52-67.

Maggin, D. M., Wehby, J. H., & Gilmour, A. F. (2016). Intensive academic interventions for students with emotional and behavioral disorders: An experimental framework. *Journal of Emotional and Behavioral Disorders*, *24*(3), 138-147.

Mattison, R. E., & Blader, J. C. (2013). What affects academic functioning in secondary special education students with serious emotional and/or behavioral problems?. *Behavioral Disorders*, *38*(4), 201-211.

Marinak, B., & Gambrell, L.B. (2008). Intrinsic motivation and rewards: What sustains young children's engagement with text? *Literacy Research and Instruction*, *47*(1), 9–26. doi:10.1080/19388070701749546

Martin-Chang, S. (2017). Learning to read with and without feedback, in and out of context. *Journal of Educational Psychology*, *109*(2), 233.

McMillan, J. H., & Schumacher, S. (2006). *Research in education: Evidence-based inquiry.* In Pearson Education.

Mulcahy, C. A., Krezmien, M. P., & Travers, J. (2016). Improving mathematics performance among secondary students with EBD: A methodological review. *Remedial and Special Education, 37*(2), 113-128.

Mulhall, A. (2003). In the field: notes on observation in qualitative research. *Journal of advanced nursing, 41*(3), 306-313.

Nelson, J. R., Benner, G. J., Lane, K., & Smith, B. W. (2004). Academic achievement of K-12 students with emotional and behavioral disorders. *Exceptional Children, 71*(1), 59-73.

Parker, F., Novak, J., & Bartell, T. (2017). To engage students, give them meaningful choices in the classroom. *Phi Delta Kappan,* 99(2), 37-41.

Patton, M. Q. (2002). *Qualitative research and Evaluation Methods*. John Wiley & Sons, Ltd.

Patton, M. Q. (2005). *Qualitative research*. John Wiley & Sons, Ltd.

Prather-Jones, B. (2011). "Some People Aren't Cut Out for It": The Role of Personality Factors in the Careers of Teachers of Students With EBD. *Remedial and Special Education, 32*(3), 179-191.

Prince, A. M., Hodge, J., Bridges, W. C., & Katsiyannis, A. (2017). Predictors of Postschool Education/Training and Employment Outcomes for Youth with Disabilities. *Career Development and Transition for Exceptional Individuals,* 2165143417698122.

Rettig, M.K., & Hendricks, C.G. (2000). Factors that influence the book selection process of students with special needs. *Journal of Adolescent & Adult Literacy, 43*(7), 608–618.

Reutzel, D. R., & Juth, S. (2014). Supporting the development of silent reading fluency: An evidence-based framework for the intermediate grades (3-6). *International Electronic Journal of Elementary Education, 7*(1), 27.

Rivera, M. O., Al-Otaiba, S., & Koorland, M. A. (2006). Reading Instruction for Students with Emotional and Behavioral Disorders and At Risk of Antisocial Behaviors in Primary Grades: Review of Literature. *Behavioral Disorders, 31*(3), 323-337.

Roberts, G. J., Solis, M., Ciullo, S., McKenna, J. W., & Vaughn, S. (2015). Reading interventions with behavioral and social skill outcomes: A synthesis of research. *Behavior modification, 39*(1), 8-42.

Rojas-Drummond, S., Mazón, N., Littleton, K., & Vélez, M. (2014). Developing reading comprehension through collaborative learning. *Journal of Research in Reading, 37*(2), 138-158.

Ryan, J. B., Reid, R., & Epstein, M. H. (2004). Peer-Mediated Intervention Studies on Academic Achievement for Students with EBD A Review. *Remedial and Special Education, 25*(6), 330-341.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*(2), 63-75.

Small, R. V., Angelastro, E., Bang, S., Bainbridge, S., Brindamour, C., Clarke, J., & ... Yannarelli, A. (2009). Reading Incentives that Work: No-Cost Strategies to Motivate Kids to Read and Love It! *School Library Media Activities Monthly, 25*(9), 27-3

Sparks, R. L., Patton, J., & Murdoch, A. (2014). Early reading success and its relationship to reading achievement and reading volume: replication of '10 years later'. *Reading and Writing, 27*(1), 189-211.

Sperry, L., Neitzel, J., & Engelhardt-Wells, K. (2010). Peer-mediated instruction and intervention strategies for students with autism spectrum disorders. *Preventing School Failure: Alternative Education for Children and Youth, 54*(4), 256-264.

Turner, J., & Paris, S. G. (1995). How literacy tasks influence children's motivation for literacy. *The reading teacher*, *48*(8), 662-673.

Utley, C. A., Mortweet, S. L., & Greenwood, C. R. (1997). Peer-mediated instruction and interventions: Focus on exceptional children. *Denver, CO: Love*.

Wanzek, J., Otaiba, S. A., & Petscher, Y. (2014). Oral reading fluency development for children with emotional disturbance or learning disabilities. *Exceptional children*, *80*(2), 187-204.

Wagner, M., Kutash, K., Duchnowski, A. J., Epstein, M. H., & Sumi, W. C. (2005). The Children and Youth We Serve a National Picture of the Characteristics of Students With Emotional Disturbances Receiving Special Education. *Journal of Emotional and Behavioral Disorders*, *13*(2), 79-96.

Wagner, M., Newman, L., Cameto, R., & Levine, P. (2006). The Academic Achievement and Functional Performance of Youth with Disabilities. A Report from the National Longitudinal Transition Study-2 (NLTS2). NCSER 2006-3000. *Online Submission*.

Wehby, J. H., Falk, K. B., Barton-Arwood, S., Lane, K. L., & Cooley, C. (2003). The impact of comprehensive reading instruction on the academic and social behavior of students with emotional and behavioral disorders. *Journal of Emotional and Behavioral Disorders*, *11*(4), 225-238.

Wehby, J. H., & Kern, L. (2014). Intensive behavior intervention: What is it, what is its evidence base, and why do we need to implement now? *Teaching Exceptional Children*, *46*(4), 38-44.

Wehby, J. H., Lane, K. L., & Falk, K. B. (2003). Academic instruction for students with emotional and behavioral disorders. *Journal of Emotional and Behavioral Disorders*, *11*(4), 194-197.

Wei, X., Blackorby, J., & Schiller, E. (2011). Growth in reading achievement of students with disabilities, ages 7 to 17. *Exceptional Children*, *78*(1), 89-106.

Wexler, J., Reed, D. K., Pyle, N., Mitchell, M., & Barton, E. E. (2015). A synthesis of peer-mediated academic interventions for secondary struggling learners. *Journal of Learning Disabilities*, *48*(5), 451-470.

Wiley, A. L., Siperstein, G. N., &Forness, S. R. (2011). School Context and the Academic and Behavioral Progress of Students with Emotional Disturbance. *Behavioral Disorders*, *36*(3), 172-184.

Wolfersberger, M. E., Reutzel, D. R., Sudweeks, R., &Fawson, P. C. (2004). Developing and validating the Classroom Literacy Environmental Profile (CLEP): A tool for examining the "print richness" of early childhood and elementary classrooms. *Journal of Literacy Research*, *36*(2), 211-272.

Yakimowski, M. E., Faggella-Luby, M., Kim, Y., & Wei, Y. (2016). Reading Achievement in the Middle School Years: A Study Investigating Growth Patterns by High Incidence Disability. *Journal of Education for Students Placed at Risk (JESPAR)*, *21*(2), 118-128.

Yin, R. (2014) Case Study Research–Design and Methods. *Applied Social Research Method Series (5): Sage: London*.

Zabel, R. H., Kaff, M. S., & Teagarden, J. (2011). An oral history of first-generation leaders in education of children with emotional/behavioral disorders, part 2: Important events, developments, and people. *Journal of Emotional and Behavioral Disorders*,

About the Author

Heidi R. Cornell, Ph.D. is an Assistant Professor of Special Education at Wichita State University in Wichita, Kansas. Dr. Cornell teaches courses related to methods for teaching students with disabilities, family and professional collaboration, and positive behavior supports. Prior to entering higher education, Dr. Cornell taught special education for nine years in Indiana. Dr. Cornell's research interests are broadly focused on improving the education and treatment of students with or at-risk for emotional and behavioral disorders (EBD). Within this area, her research is primarily focused on prevention strategies, collaboration, and student-teacher relationships.

Exceptional Gifted in West Virginia: Reflections of a Teacher of the Exceptional Gifted on the State Program

Dr. Patricia Coon
West Liberty University

Abstract

Who are the students who qualify as Exceptional Gifted in West Virginia? In West Virginia, Policy 2419: Regulation for the Education of Exceptional Students, defines giftedness and delineates the criteria for eligibility. Identified Gifted students are served in grades 1-8; Exceptional Gifted students are served in grades 9-12. To understand what is exactly meant by this policy, one must first understand the definition. Giftedness refers to exceptional abilities and the potential for achievement that requires specially designed instruction and/or services beyond those provided in the general education classroom instruction (Policy 2419, 2017). In eighth grade in West Virginia, if a student who is gifted is underachieving, has a disability, is culturally and/or socioeconomically disadvantaged, and/or psychologically maladjusted, he may qualify for services in high school to keep him connected to school and to graduate. This paper explores the identification process for Gifted and Exceptional Gifted in West Virginia, as well as a teacher's reflections on how to best serve these students through a program that is tailored to their specific needs, which can also serve as ideas for other programs of this nature.

Exceptional Gifted in West Virginia: Reflections of a Teacher of the Exceptional Gifted on the State Program

Definition and Steps in the Initial Identification Process

In West Virginia, Policy 2419: Regulation for the Education of Exceptional Students defines giftedness and delineates the criteria for eligibility. Identified Gifted students are served in grades 1-8; Exceptional Gifted students are served in grades 9-12. To understand what is exactly meant by this policy, one must first understand the definition. Giftedness refers to exceptional abilities and the potential for achievement that require specially designed instruction and/or services beyond those provided in the general education classroom instruction.

To identify a child as gifted in West Virginia, several factors are needed. First, an eligibility committee determines that a student is eligible for gifted services in grades 1-8 when certain criteria are met. One criterion is general intellectual ability of the student. General intellectual ability must be a full scale at the 97th percentile rank or higher on a comprehensive test of intellectual ability with consideration of 1.0 standard error of measurement at the 68$^{\%}$ confidence interval. Second, at least one of the four core curriculum areas of academic achievement must be at the 90th percentile rank or higher as measured by an individual standardized achievement test. At least one of the four curriculum areas of classroom performance can be demonstrated at exceptional functioning, as determined during the multidisciplinary evaluation (Policy 2419, 2017).

The final criterion is that there is a need for specially designed instruction and/or services beyond those normally provided in the general classroom. Differentiated instruction for students who are gifted may include enrichment of the content emphasizing the development of higher level thinking. This includes critical thinking, creative thinking, and problem solving skills, and/or acceleration of content while the student remains in the chronologically appropriate grade (Policy 2419, 2017). Related services can also include guidance, counseling, and other services that are not provided in the general classroom (Policy 2419, 2017).

Identification of Exceptional Gifted Status

Before the end of the 8th grade, a student in the gifted program in West Virginia will be re-evaluated to determine if he/she is an Exceptional Gifted student. A review of existing data will include evaluations and information from the parent, current classroom-based assessments and observations, and observations by teachers and other related services providers. Based upon that review, and any other additional data, a student may qualify for special education services from grades 9 through 12 if he or she meets one or more of four criteria. First, he or she would meet the eligibility criteria for one or more of the disabilities as defined in the section for Exceptional Gifted, Grades Nine through Twelve in Policy 2419. For example, the student is gifted and learning disabled, in a wheelchair, and/or visually impaired. Second, he or she may meet the definition for economically disadvantaged. This can be determined by whether a student is on free or reduced lunch or other information provided by the parents or school. Third, the student may meet the definition for underachievement. This takes into consideration the student's ability level, educational performance and achievement levels. For instance, a student may have the ability to be performing well in math and science based upon his or her identification scores for giftedness in those areas, but is receiving Ds and Cs in those areas. Fourth, a student may meet the definition for psychological adjustment disorder as documented by a comprehensive psychological evaluation. For example, this could mean that the student is gifted, but suffers from depression, which affects his or her ability to successfully complete classes to graduate from high school (Policy 2419, 2017).

Characteristics of the students who are Exceptional Gifted consist of a wide range of gifts, talents, and accompanying factors that impede their progress and success in school. They can be easily bored, frustrated, and defensive. Some carry guilt and insecurity from failure that is debilitating and self-destructive. They are familiar with their labels, and feel powerless and clueless as to where to start. Students who are Exceptional Gifted can appear odd in behavior, and may isolate themselves from peers or be disruptive out of sheer frustration. It is as though they forgot they were gifted, and need to revisit their gifts again.

Services for Exceptional Gifted Students

Once a student is eligible as Exceptional Gifted in West Virginia, the IEP team develops an Individualized Education Plan (IEP) for high school services. If the student is not eligible as Exceptional Gifted, the IEP team writes a four-year plan that appropriately addresses the student's educational needs. The four-year education plan replaces the Individualized Student Transition Plan (ISTP), and includes honors, Advanced Placement (AP), and/or International Baccalaureate (IB) classes that must be provided for the student in grades 9-12. The implementation and annual review of the four-year plan is required by the district, and includes the student, parent, and a school representative (Policy 2419, 2017).

The student who is identified as Exceptional Gifted has an IEP that is written for each year of his or her high school program. This plan is designed to address his or her giftedness, as well as one or more of the factors that related to becoming identified as Exceptional Gifted. Because such children are considered to be at-risk, the teacher of record works with the student, his or her classroom teachers, and often related service personnel to bridge the gap between school and successful completion of classes. This is highly individual to the student involved.

Necessary Collaboration between Gifted Teachers and Other Teachers

When developing a program for the student who is identified as Exceptional Gifted, one must consider what programming options should be made to address his or her specific needs. When I was hired for the position as teacher of the Exceptional Gifted, there was nothing in place to direct me, and I was simply told that Exceptional Gifted students could be at risk for dropping out of high school. At that time, I also remembered working with many of the students that I had identified in eighth grade as Exceptional Gifted, and the IEP goals and objectives I had written for an unnamed teacher who would take over the student's IEP services once he or she moved on to the high school.

A thorough analysis of the IEP file for the student who is Exceptional Gifted will provide the teacher with information regarding when the student was identified, and his or her academic record and scores to date. The cumulative file is another source of information, and will provide ideas as to where to start when working with the student (Assouline, Nicpon, & Whiteman, 2010). Additionally, the teacher of the Exceptional Gifted will need to begin a dialogue with the regular education teachers who will have the student in their classrooms and any other relevant personnel, such as special education teachers and occupational therapists, because they all need to be aware of the mitigating factors that have contributed to the student being identified as Exceptional Gifted.

Interventions that Support Exceptionally Gifted Students

If the student is Exceptional Gifted with a disability, he or she is usually served by a special education teacher. Response to Intervention (RtI) is an excellent model to use when working with a student who is Exceptional Gifted, whose needs are both remedial and advanced (Pereles, Omdel, & Baldwin, 2009). A course like Learning Strategies can be built into his or her schedule, to work with the special education teacher to remediate and assist him or her in classes. If more time is designated, he or she may even meet with the special education teacher for a collaborative content class, or for a special education class such as reading or math. Also, if speech therapy or occupational therapy is needed, he or she may also receive support services in those areas.

If a student is Exceptional Gifted and economically disadvantaged, he or she may need to overcome learned helplessness, which is the feeling that he or she is powerless over circumstances, and there is no hope, even when strategies are put into place (Mueller, 2005). It may take time for the student to trust others, depending upon how dire are the circumstances, such as homelessness, lack of basic needs, or having to take on roles in the home that are well beyond his or her years, such as raising siblings, cooking, and cleaning. It is very important for the student who is economically disadvantaged to begin to understand that he or she does have the intelligence and self-will to overcome his or her circumstances, and having some successes in school can make a difference in his or her outlook for the future (Slocomb & Payne, 2000).

If a student is Exceptional Gifted and is underachieving, he or she may need to develop real world connections to learning, and have opportunities for exploring interests and expanding upon strength areas. For example, careful selection of classes each year could assist in determining a focus and a direction for post-secondary education. Structure and support are very important interventions, and must be tailored to the student's specific needs (Hoover-Schultz, 2005). Time management, study skills, and organizational skills can provide routine and comfort for students who have experienced a chaotic family and/or school life up to the point of intervention.

If a student is Exceptional Gifted and psychologically maladjusted, he or she may be suffering from depression, a behavioral disorder, or another psychological issue. These factors could be preventing him or her from reaching his or her potential (Assouline, et al., 2010). Depending upon the condition, the student may be seeing a therapist outside of the school environment, and possibly taking medication to assist in coping. Additionally, cognitive behavioral therapy may be used, by the student, the therapist, teachers, and parents.

The programming options I developed to service the Exceptional Gifted were called the "Exceptional Gifted Program in Monongalia County." They were designed to meet the needs of the students who are Exceptional Gifted, and included an Individual Perspective and a Group Perspective. The Individual Perspective consisted of completing Interest and Learning Styles Inventories in an effort to understand and expand upon the students' strengths and to increase areas that would enhance their classroom performance.

The Career and Mentorship Unit (described in the "Exceptional Gifted Program in Monongalia County") provided opportunities to learn about careers through a vocational evaluation through the Monongalia County Technical Education Center (MTEC), West Virginia University Career Services Center, and other options that produced detailed information and counseling about career development and preparation. After consideration of the results, each student could choose a career area and be matched with a mentor in the local area to learn more about the field of interest and what is needed presently in high school and college to attain that career.

Consultative Services were provided which included each student being monitored throughout the semester, regarding grades and progress related to his or her IEP goals and objectives. Interventions were planned as needed. Juniors and seniors were asked for permission to include a representative from the West Virginia Department of Rehabilitative Services (WVDRS), to determine eligibility for grants and loans for college, and transitional services from high school to post-secondary education.

The Individual Perspective consisted of one-on-one and behind-the-scenes work with the student, parent, teachers, counselors, and sometimes the principals. I traveled between the two area high schools, and had a student at Chestnut Ridge Hospital. And even with a relatively small population of about 20 students as a half-time teacher, it took time to plan, execute, and address IEP goals and objectives within that framework.

In the Group Perspective (described in the "Exceptional Gifted Program in Monongalia County"), the students met in their respective grade levels, and selected a community project to work on as a total group. After meeting with the Teen Court representative and the director of the Cooper's Rock Mountain Lion Sanctuary, the students selected the sanctuary. They

volunteered their time outside of school to clean, paint, and maintain the sanctuary. The students also wrote grants, and set up a fund-raising website for the sanctuary. They put together a picture and written folder of their accomplishments, and their interest in the project was sustained over several years by their own choice. Service-learning was a powerful factor in connecting the students who are Exceptional Gifted to their own learning. While the students participated in community service, they evolved and became more motivated to achieve and plan for their futures (Lewis, 1996).

It was interesting to watch the dynamics of the students' reaction to the Group Perspective, as they became a fierce support system for one another, and often encouraged each other to work harder, be more confident, and stretch their limits. This also occurred when the students from different schools in the county came together for their shared community service-learning project.

Teen Court in Monongalia County was another option by which the students who were Exceptional Gifted could choose to participate in as a juror, bailiff, defense or prosecuting attorney. The students were made aware of when Teen Court met and how they could volunteer their time to work in that system.

Students who were Exceptional Gifted were encouraged to consider joining the Health Sciences and Technology Academy (HSTA) at the high schools in Monongalia County, which was, and still is, housed at West Virginia University. It is program for ninth through twelfth graders in science and math, and can lead to college support if the students were active members throughout high school.

All students who were Exceptional Gifted could share input with the teacher of Exceptional Gifted, which could become a part of his or her Individual Perspective or Group Perspective. For example, one student decided to take a Virtual School course through the West Virginia Department of Education over the summer to make up a class that he had failed in ninth grade. He was one of the first students to do so, and now it is standard practice throughout the county.

Another student who was Exceptional Gifted would not have graduated with her peers, because she was a half credit short in Art. Because of the Exceptional Gifted teacher's close collaboration with each student's teacher every year, we were able to negotiate an independent study half credit in Art for this student, and it was approved by the principal. This was an empowering moment for the student, because she realized that her future was not hopeless and that many people cared about her and her progress to graduate.

Important Networking for Teachers of the Exceptional Gifted

In addition to working closely with the teachers of the students who were Exceptional Gifted, there were times when networking with other staff was needed. The nurse was a very important resource for students who had some serious situations occurring at the home, and would come to school ill or exhausted. Close relationships with each student's counselor kept them on track with graduating on time. It sometimes involved building a schedule that was challenging, yet with teachers who were empathetic to a very bright student with many layers of issues that could look like laziness, and were anything but laziness (VanTassel-Baska, 2003).

Developing a strong relationship with parents of students who were Exceptional Gifted was another key factor. Advocacy for their child was integral in the child's successes (Trail, 2012). There was one set of parents that refused to allow their son to take medication for his Attention Deficit Disorder (ADD), convinced that he could "make it" without medication. It took many phone calls, meetings, and persuasions to convince the parents to at least visit their doctor to discuss the idea of trying medication again. After a decision to try medication again, the student's ability to concentrate was evident in his grades, which improved greatly and he sustained them over time.

Sadly, not all students who are Exceptional Gifted have parents that are supportive, or even interested. They can be fighting poverty, drugs, alcohol, and other issues. I once asked the students what was one of their first profound memories, and one tenth grade girl said, "I was nine when my father went to jail." It's hard to concentrate on school when your world is in disarray and your basic needs may be in jeopardy. Sometimes, as a teacher, it was more important to be a good listener, instead of proceeding with a lesson.

Teacher of the Exceptional Gifted Reflection and Conclusion

Over the four years that I served in this role as teacher of the Exceptional Gifted, all but one of my students graduated. The student's mother pushed her out of the house the summer before her senior year when she turned eighteen, believing that her daughter could work, live in an apartment, and complete her studies to graduate high school. Even more appalling, the student was eligible for Social Security benefits, and the mother didn't even take her there to set them up. It was an accident waiting to happen, and it did. It still bothers me to this day that a bright, creative, but depressed young woman fell through the cracks, and I couldn't help her.

When you work with the students who are Exceptional Gifted, you wear many hats. You advocate for a student who is sometimes difficult to find anything good about, because he or she can test and push your limits with negative moods and lack of trust. I once stopped a session because one of the students was sabotaging the lesson. I simply looked at her and asked her if she realized what she was doing. After a long staring contest, she hung her head, and said she was sorry.

The students who are Exceptional Gifted are one of the most confounding populations that I have ever had the privilege to work with, and they deepened my understanding of their complexities and the dichotomy of their conditions. They were a challenge, a gift, and will always remain entrenched in my heart.

The Exceptional Gifted Program was developed to meet the need of the students who were identified as Exceptional Gifted in Monongalia County. It was based upon the relevant research for this population, and continually revised and adjusted to meet the students' specific and individual needs.

Future considerations can include developing identification programs in earlier grades, possibly as early as elementary school, to prevent and/or serve students who are gifted and may show signs of becoming Exceptional Gifted. Gifted programs could become more inclusive at earlier stages to address students who are gifted and disabled, demonstrating signs of underachievement,

need support for low socioeconomic impacts, or have psychological issues. Perhaps then there would be more success in reaching each individual's true potential, a goal all of us wish for each student.

References

Assouline, S.G, Nicpon, M.F., Whiteman, C. (2010). Cognitive and psychological characteristics of gifted students with written language disability. *Gifted Child Quarterly, 54*(2), 102-115.

Hoover-Schultz, B. (2005). Defining underachievement in gifted students. *Gifted Child Today, 28*(2), 46-49.

Lewis, B.A. (1996). Serving others hooks gifted students on learning. *Educational Leadership. 53*(5) 70-74.

Mueller, A. (2005). Antidote to learned helplessness: empowering youth through service. *Reclaiming Children and Youth, 14*, 16-19.

Pereles, D.A., Omdal, S. & Baldwin, L. (2009). Response to intervention and twice-exceptional learners: a promising fit. *Gifted Child Today, 32*(3) 40-51.

Slocumb, P.D. & Payne, Ruby K. (2000). *Removing the mask: Giftedness in poverty*. RFT Publishing Company.

Trail, B.A. (2012). Improving outcomes for 2E children. *Parenting For High Potential, 1*(5) 8-10.

VanTassel-Baska, J. (2003). *Content-based curriculum for high-ability learners*. Prufrock Press, Incorporated, 16.

West Virginia State Board Policies (Policy 2419, 2017)

About the Author

Dr. Patricia Coon received her Secondary English Education Degree from Florida Atlantic University in 1978, teaching students who are gifted until she retired in 2010. She earned her Master's Degree in Gifted and Special Education from West Virginia University in 1984, and her doctoral degree in Educational Psychology from West Virginia University in 2013. Patricia developed and taught gifted coursework for West Virginia University for seven years, until 2009. She has been at West Liberty University since 2010, where she is currently an online adjunct for the College of Education. Patricia's research interests include service-learning, gifted underachieving, and gifted with disabilities.

The Effect of a Skills-Based Behavioral Program on Raising the Self-Concept of Individuals with Mild Intellectual Disability in UAE

Dr. Ousha Almheiri
UAE University, College of Education

Abstract

This study aimed at examining the effect of a behavioral program on raising the level of self-concept among individuals with mild intellectual disability. To achieve this goal, the researcher prepared a skills-based behavioral training program that is geared towards individuals with mild intellectual disability. Subjects were assigned randomly in groups (experimental and control). The results indicate that there were significant differences between the two groups in favor of the experimental group.

Keywords: Self-concept, mild intellectual disability, behavioral program

The Effect of a Skills-Based Behavioral Program on Raising the Self-Concept of Individuals with Mild Intellectual Disability in UAE

Self-concept refers one's awareness of his abilities and characteristics. This concept is formed by the individual's surroundings and his relationships with others, such as family, school, friends and the environment. Particularly, family is considered to be the basic source of delivering positive or negative concepts to the child. So the obstacles that children with disabilities face in their daily lives and the concept of the family and the society, would define the concept they form toward themselves. Self-concept is considered, relatively, one of the modern concepts that includes the awareness of a child's cognitive abilities such as reading, writing, etc., and their social abilities such as making friendships and interacting with others, and children with different disabilities just like their peers, in the formation of self-concept. But the surrounding circumstances may adversely affect their perception of themselves, and they feel the weaknesses rather than focusing on the strengths. Supportive communities for children with disabilities can stimulate and motivate them to release their abilities, depending on the reflection of a self-perception the child gets, despite his health problems (Al Ganadi, 2013; Azzak, 2009).

Researchers studied the relationship of self-concept and behavioral problems that children in general endure and children with disabilities in particular. For example, some researchers (e.g. Alzyoudi, 2007; Elbaum & Vaughn, 2001) conducted intervention behavioral programs for those children to improve their adaptability in their communities and raise their self-confidence to make them more capable to face difficulties and obstacles. In the Arab world, Suleiman (2002) recommended for people with intellectual disabilities the importance of training, in general, and the need to develop special behavioral programs commensurate with their abilities, and their potential to alleviate behavioral problems and to raise the self-confidence level, which can help them to acquire the necessary personal skills to cope with daily life requirements and to adapt to society. According to Yamani (2006) behavioral intervention is an important element in treating children with Attention Deficiency and Hyperactivity as it raises the level of self-confidence by creating positive concepts about it. And the most important self-supporting strategies include the

use of positive reinforcement, teaching problem-solving, communication, and treating children as respected individuals in both school and home environments.

A study by Dubies and Alsmaduni (1998) revealed the effectiveness of behavioral program, which is based on training a group of mentally disabled who are willing to learn at the level of self-confidence and provide verbal instructions to oneself to increase the focus of attention. A study conducted by Qasim and Abdul Rahman (2003) aimed at developing a recreational program and to identify its impact on some of life and psychological skills, and motor abilities of children. They used an experimental approach for one group on a sample of 30 children with mild intellectual disability. The results of the study revealed that the proposed recreational program had a positive impact on the improvement of some of the life skills and reduc the intensity of any behavior and build a positive self-concept, and helped adaption of the surrounding community.

One important study, in this area, conducted by Trull et al. (1997) aimed at examining the negative self-concept and its relationship to poor psychological and social compatibility on a group of primary school students (n=89). The study showed a strong relationship between low self-esteem and the presence of obvious defect in personality. The study also recommended creating a behavioral treatment and entertaining programs for students, in order to raise the level of self-confidence rather than relying on traditional methods in education.

Makin (2000) carried out a study on children in kindergarten and child care centers, which showed that threat affects self-concept among kindergarten children. Teachers need to better understand their children's characteristics; especially students with disabilities or health problems. It encouraged them not to discriminate among them to make them feel secure which helps in smooth transition when they enter school which affects positively on their view of themselves.

Behavioral trends that proved effective in treating behavioral problems of children with mild intellectual disability, including low self-concept are scarce in the United Arab Emirates, are training programs aimed at raising the level of self-confidence of children with mild intellectual disability as well as consideration of how this affects both the child's educational and family environment. Also affected are children's acquisition of necessary educational and training skills which can help them be integrated in their community. This study was conducted to design a behavioral training program which could raise the level of self-confidence of children with intellectual disability in rehabilitation centers in the United Arab Emirates.

Problem and Significance of the Study

Surrounding environment like, family, school and friends contribute to shaping the child's concept of himself. Some obstacles, children with disabilities, face in their daily lives and society's trends treatment of them determine the features of their conceptions about themselves. Note that self-concept is relatively modern, and children with disabilities, are the same as their peers in forming this concept. That is why it is so important to support and motivate them to adapt to the surrounding social environment, and unleash their capabilities to be receptive and interactive despite of their abilities (Al Janadi, 2013). Therefore, this study was conducted to identify the effectiveness of the programs offered to people with disabilities, to improve self-

concept they have toward themselves by trying to answer the main research question: "What is the effectiveness of a behavioral program in raising the level of self-concept among a group of people with mild intellectual disability?. This study seeks to achieve the following objectives:

1. Identify the level of self-concept among people with intellectual disability

2. Raise the level of self-concept in people with intellectual disability

3. Investigate the effect of the behavioral training program dimensions of self-concept among people with intellectual disability

Study Hypotheses:

1. There were no statistically significant differences between the children's mean scores of the experimental group in both pre and posttests of self- concept dimensions.

2. There were no statistically significant differences between the performance of students in the control group between both pre and posttests of self- concept dimensions,

3. No statistically significant differences between the performance of the experimental group and control group of students on self- concept dimensions

Study Limitations

The study was limited by the time period which took three months with an experimental sample consisting of 14 students with mild intellectual disability. They were enrolled in the rehabilitation centers of people with disabilities affiliated with the Ministry of Social Affairs in the United Arab Emirates, in the first semester of the academic year 2014 / 2015.

Statistical Procedures

Statistical procedures were used by the modern version of SPSS program according to the following tests in order to examine the null hypothesis: Mann-Whitney test, Wilcoxon Test and Z value.

Terms of the Study: (Glossary)

- Self-concept is a total sum of individual self-perceptions. It is a complex image composed by the individual thinking about himself, his achievement, his physical, mental, and personal characteristics and about his attitude toward himself, and others' perspectives of him and what kind of person he prefers to be. The researcher has adopted this operational definition of self - concept in this study which is represented through students' scores on reliance of the self- concept scale of people with intellectual disability.
- Intellectual disability: is a sub-average intellectual ability equivalent to or less than an IQ of 70 that is accompanied by significant deficits in abilities (e.g. communication or self-care) necessary for independent daily functioning. This disability is usually present from birth or infancy, and is manifested especially by delayed or abnormal development, by learning difficulties, and by problems in social adjustment (DSM V, 2013).

Theoretical framework and previous studies:

Humaidhi's (2004) study aimed to identify the effectiveness of a behavioral program to develop some social skills and self - concept for a sample of children with mild intellectual disability. After the application of the study on two samples (experimental and control group), results showed statistically significant differences in the levels of social skills scores for the sample in the experimental. Furthermore, Hussein and Abdul Ghaffar (2006) conducted a study aimed to determine self-concept of children who suffer attention deficit hyperactivity disorder. The study found low self-concept among this category of children as well as children who have behavioral problems, aggressiveness in particular. The study recommended the need to design behavioral programs for these students that will improve their level of self-concept and thus reduce the severity of behavioral problems.

Another study was conducted by Grossi and Habsh (2000) which aimed to improve social skills scores for kindergarten children, on the basis of a relationship between behavioral problems they have such as aggression, impulsivity, and self-concept. The sample of the study was divided in two groups, experimental and control. The experimental sample received a behavioral and social training program to improve the level of social skills. After six weeks of applying the program, a significant improvement appeared with regard to self-concept of the experimental group compared to the control sample, the level of social and behavioral skills has elevated. In another study by Elbaum and Vaughn (2003) aimed at analyzing a set of studies that have been conducted about interventions based on the school environment in improving the level of self-concept among students with learning difficulties through the analysis of results of previous studies to identify the effect of the intervention of different training programs at the level of self-concept when compared before applying those programs. The results showed that students who have shown low levels of self-concept are the only ones who have benefited from these training programs, and the study has applauded the importance of identifying the level of self-concept of the students in order to identify the extent of their need for training programs that can help them raising the level of self-concept.

A study by Jalili, Becky, Fathi Zhadan and Hassanana (2011) aimed to examine the effectiveness of aerobics on the self-physical concept of children with mental and physical disabilities, aged between 8-10 years. Basically, the study was applied to a group of forty children, distributed evenly into two sample groups, experimental and control. After measuring the self-concept before and after applying the training program, which lasted for 12 weeks, the results showed statistically significant differences in the level of self-concept among the children of the experimental group and that for the interest of the posttest measurement. The study showed the effect of aerobics on the self-concept of children with mental and physical disabilities, and the impact of such programs on the mental state of these children.

Through a study conducted by Ittyerah and Kumar (2007) to investigate the level of self-concept among children and adolescents with disabilities has been verified, in terms of body image, abilities, skills, life experiences, and social interaction. The results showed that children have a positive concept more than adults. It also showed that males have a higher self-concept than females, as the social interaction and abilities have achieved higher scores than the levels of body image and life experiences. It was found that a positive self-concept is derived from internal factors and are related to what extent an individual responds and interacts with those around him.

Negative self - concept is associated with external factors like negative attitudes toward disability.

Another study that was conducted by Daou and Hammoud (2014) aimed to analyze the impact of training on a sample of students with and without disabilities in building self-esteem on their social and academic skills in the in the inclusive environment. The sample was randomly selected from school students in Lebanon. Then the sample was divided into three groups, including two experimental group consisting of (68) students, and a control group consisting of (48) students. The results showed differences between students on self-esteem scale which is for the benefit of the experimental samples. Training program and inclusion not only helped raising the level of self - esteem of students with disabilities, but also showed they helped in improving academic achievement and behavioral problems.

Methodology and Procedures

Methods and Sampling

The study sample consisted of 14 students with mild intellectual disability enrolled in the rehabilitation centers for people with disabilities. The sample of the study was divided into two groups: experimental and control.

Study Tools

Self-concept scale

The scale of the study was prepared by the Department of Welfare and rehabilitation center of people with disabilities at the Ministry of Social Affairs (2014) in order to measure the level of self-concept of people with intellectual disability. The scale consists of 25 questions divided into five main dimensions, so that each of the five questions represent one dimension. The respondent is supposed to express the answer for each question through two pictures, one representing the positive perception of self, the other representing the negative perception.

The child with intellectual disability is required to choose the picture that he feels expresses him and his daily life as if the child dropped his feelings on the picture instead of using spoken language. The scale questions were distributed on the following domains:

- **Physical Self-Concept:** Physical self-concept reflects the individual with disability's sense of his physical potentials, and his ability to do a variety of kinesthetic tasks. It also reflects his general health, in addition to physical appearance compared to others around him.
- **Independence Self -Concept**: Independence Self-Concept reflects the individual's view of himself as someone who is capable of performing independent skills and relies on himself in all life skills such as eating, dressing, using health facilities and moving safely and smoothly.
- **Social Self -Concept:** Social Self-Concept reflects the view of the child with a disability to himself as a social creature, communicates and interacts with the surrounding environment, and is capable of making friends.

- **Cognitive Self-Concept:** Cognitive self-concept reflects the concept of the person with disability about his mental abilities like memory, attention, concentration and thinking. It also reflects his awareness of the surrounding environment, his ability to analyze and interpret daily phenomena, in addition to the basic concepts such as reading, writing and arithmetic.
- **Behavioral Self-Concept**: Behavioral Self-Concept reflects the concept of a person with disability to himself as he is capable of not only controlling emotional reactions like feelings and realizes the right thing to do in such situations.

Instrument Validity
The Ministry of Social Affairs has examined the validity of the instrument through two ways:

1. Content validity, the instrument has been checked by six faculty members at the College of Education at UAE University and by expert academic supervisors, who have long experience in dealing with people with disabilities, in rehabilitation centers affiliated by the Ministry of Social Affairs, in order to judge the adequacy of the instrument in terms of the representation of the five sub-dimensions. In addition to reviewing research and educational studies which were conducted to address self-concept issues, in order to determine the sub - areas related to self-concept among children. Different aspects and areas were expressed through variety of sentences and phrases, in addition to modifying two sub-dimensions and adjusting the related pictures based on the feedback made by the experts.

2. In terms of validity, the initial measure was applied to a sample of 145 students with intellectual disability, enrolled in rehabilitation centers at the Ministry of Social Affairs, between the ages of 7-12 years. Teachers were asked to assess each child, according to the five sub-areas of self-concept. Document their remarks on the answer sheet either by the existence of the behavior or without by “yes” or “no”. Based on that, correlation coefficients have been calculated among teachers’ answers about children’s behaviors. Results of the coefficients are as follows: physical self-concept, 0.29; social self-concept, 0.28; behavioral self-concept, 0.29; cognitive self-concept, 0.29; independence self – concept, 0.31

Reliability
The reliability of the instrument coefficients were calculated by the replication of the instrument, where the instrument was used was re-implement to a sample of 45 boys and girls with intellectual disability, in an interval of 15 days between the first application and the second. The difference between the two correlation coefficients was (0.77), which is a statistically significant coefficient at the level of (0.01).

The Second Tool: Activities Behavioral Training program:
This is a pedagogical training program based on teaching by applying internal and external activities like, kinesthetic, performing and expressive to develop personal and social skills and to help the child to identify himself and gain strategies to express himself and communicate with others. The following are the basic components of the program and its mechanism and application:

1. This program has been prepared by teachers who have long experience in teaching students with intellectual disability, selecting big groups of games and activities suitable for children, and then wording the executive procedures with the cooperation with the researchers for each game and writing the goals that it performs. These activities have been presented for a one week trial period on a group of students from the center and feedback was received about their responses and interactions with the activities by recording points for each activity. Then the points were added and the 10 activities that gained the highest scores have been chosen as the most influential on the student from the teacher's point of view. The varieties of the goals the activities perform like expressive, discharge, communicative and social are also exploratory for capabilities and skills that the child possesses.

2. Technicalities and tools used: a lot of behavioral management technicalities have been used in order to reinforce the intensity of the severity of positive behaviors, and reduce the severity of the behavior of excess movement. The most important technicalities are: reinforcement, punishment, and differential reinforcement of alternative behavior, modeling, and exclusion. The researcher has used a lot of assisting methods during the activities like sport games, mazes, maps, puzzles, puppet show, stories, role playing, and action figures. In addition to all of that, the tools are available in the students'' local area.

3.Teaching style: elements of entertaining, achieving concentration, and body discharge have been taken into consideration when applying the activities, also developing the capability of the student to express himself and explore his physical and cognitive abilities, and give him the self-confidence through the participation with others. And those activities represent an important challenge by raising the motivation of the students to reach the goal. It is worth mentioning that each activity has it is own rules that should be adhered to which let the student gain the capacity of patience, endurance, and adhere to the instructions. All kinesthetic activities are held in the games hall which has been especially designed with floors, walls, and protective pillows to meet the needs of students with disabilities, and provides safety elements and immediate supervision from the teacher, in addition to the cognitive, communicative and social activities that take place in the classroom.

4. The session time: The children of the experimental group were given the chance to play one game per day out of these games over the period of the program application, and the session duration time was (45) minutes.

Strategies adopted in the training program based on the activities:

Kinetic Games Strategy, are ten games as follows:

1. Climbing Game: Allows children to climb walls freely and safely to reach a particular goal and compete with other children, and explore their physical abilities.

2. Hamad says, the child is asked to order the rest of the children to do particular things, or refer to something specific in their bodies or the surrounding environment. This skill develops the ability of attention, concentration and fast reaction and self-knowledge.

3. Mazes: The child is placed in a maze and asked to get out according to certain signs so a competition, among students, takes place. This game mainly relies on cognitive skills.

4. Map game: Each child or group of children is given a map with particular symbols, then they are asked to find the treasure, as they read some statements, and make some simple calculations and follow the instructions. This game develops social and cognitive skills.

5. Ground puzzle: Students are to attach certain pictures or phrases by putting them together. This skill develops concentration and attention under time pressure.

6. Bowling: This game is based on throwing the balls toward the goal. The goal and the distance are changed through the game, so the competition gets high among students. This game allows the child to explore his skills.

7. Steps game: In this game the child is asked to do a particular thing, according to specific written steps or explained through a video. This skill improves the ability to imitate and listen to the instructions.

8. Trampoline: Free jumping and performing the required motions according to certain musical rhythms, and the child is asked to achieve the desired balance while jumping, and discharging physical and emotional energy.

9. The web ladder: Climbing up the ladder to reach the top of the pyramid, and going down requires balance with a high level of competition between students. This game develops the physical abilities of the child and his competitive spirit.

10. Role-playing games: In this game, the child plays the role of a character he likes such as a teacher, a doctor, a policeman, or any other character. It requires the child to reenact the character with the other party, thus reflecting his desires and inclinations.

Classroom-learning based on narrative style and role - play strategy:
This is a strategy based on delivering information to be implemented by the experimental group teacher, during cognitive classes. She is keen to achieve the educational goals planned for each child using the narrative style. For example: when teaching colors, the teacher reads a story about colors. At the end of the story she asks the children to reenact the roles of the story characters. Here the child gets the opportunity to freely express his mind according to his personal demands and the color he likes.

The same thing applies in the calculations skill, when the teacher asks the child to give the specific number of red balls, or do 10 jumps. The teaching principle counts on translating the cognitive goal into a story in which the children resurrect its characters and live its atmosphere through social, self-expressive and emotional atmosphere.

The study methodology:
The researcher used the experimental design of the two tests pre and post, with two groups (experimental and control). The study variables were determined as follows:

Independent variable: The training program based on activities

Dependent variable: A measure of self-concept illustrated for people with intellectual disability.

Study application procedures
The researcher selected a homogeneous group of students, in terms of age and mental abilities based on the psychological and social files of students. Consulting the psychologist in the center, those whose IQ scores ranged from 55-69 on the Wechsler test, ages between (7-10) years, with a mean (8.75) and a standard deviation (1.13) were chosen.

Results

In this study, the researcher tried to answer the research questions and investigated the validity of its hypotheses, each hypothesis separately, to examine the efficacy of a behavioral program in raising the level of self–concept of children with mild intellectual disability.

The results of the first hypothesis:
There are no statistical differences among the mean scores of the children in the experimental group, between pre and posttests, on the dimensions of the self–concept scale.
In order to examine this hypothesis, the Wilcoxon Test was applied on the test associated samples and the results are as follows (*see* Table 1)

Table 1
Results of Wilcoxon Test

Dimensions of adaptive behavior scale	ranks	number	Ranks mean	Total ranks	Significant level	Value of Z
Physical self – concept	negative	6	3.50	21.00	0.023*	2.271-
	positive	0	0.00	0.00		
	equality	1				
	Total	7				
Social self-concept	negative	5	3.00	15.00	0.038*	2.070-
	positive	0	0.00	0.00		
	equality	2				
	Total	7				
Behavioral self – concept	negative	6	3.50	21.00	0.026*	2.232-
	positive	0	0.00	0.00		
	equality	1				
	Total	7				
Cognitive self – concept	negative	3	2.00	6.00	0.083	1.732-
	positive	0	0.00	0.00		
	equality	4				
	Total	7				
Independence self – concept	negative	7	4.00	28.00	-2.392	*0.017
	positive	0	0.00	0.00		
	equality	0				
	Total	7				

As shown in Table 1, there were significant differences between the mean averages of the children of the experimental group ranks, over the pre and posttests, on illustrated self –concept scale in favor of the posttest. The differences were found on theses dimensions (physical, social, behavioral, and independence) while there were no significant differences at the cognitive concept. The researcher explained that by the low level of mental abilities of the children in the experimental group makes it hard to make progress in their cognitive abilities in terms of calculations, linguistics, and general awareness concepts proposed by the training program, which requires the ability to memorize, sort and associate groups of variables.
This result is consistent with the results of a study conducted by Humaidhi (2004) in terms of the presence of the evolution in the perception of social self - concept among children like the experimental sample, the study of Elbum and Vaughn (2003) found that the students who showed low levels of self-concept have benefited from these training programs, as well as that of the study of Qasim and Abdul Rahman (2003), which demonstrated a positive effect in the experimental group in the areas of life skills, reducing behavioral problems, building a positive self-concept, and adapting to the surrounding community.

Second Null hypothesis: There were no statistically significant differences between the levels of performance of students in the control group over the two, pre and posttests, on the dimensions of illustrated self-concept for people with intellectual disability.

In order to examine this hypothesis, the researcher found and recovered the real grades for the performance of students with intellectual disability. She used the Wilcoxon test for the associated samples to the tests, as shown in Table (2):

Table 2

Results of Wilcoxon Test for control group children for the pre and posttests

Dimensions of adaptive behavior scale	ranks	number	Ranks mean	Total ranks	Value of Z	Significant level
Physical self – concept	negative	2	3.00	21.00	0.157	1.414-
	positive	0	0.00	0.00		
	equality	5				
	Total	7				
Social self- concept	negative	2	3.00	15.00	0.157	1.414-
	positive	0	0.00	0.00		
	equality	5				
	Total	7				
Behavioral self – concept	negative	2	3.00	21.00	0.180	1.342-
	positive	0	0.00	0.00		
	equality	5				
	Total	7				
Cognitive self – concept	negative	2	3.00	6.00	0.180	1.342-
	positive	0	0.00	0.00		
	equality	5				
	Total	7				
Independence self - concept	negative	3	6.00	28.00	0.102	1.633-
	positive	0	0.00	0.00		
	equality	4				
	Total	7				

Data from Table 2 shows the lack of statistically significant differences at the level (0.05) between the mean ranks degrees of the students of the control group on the pre and post-tests, which applies to all areas of self-concept. This evidence indicates no change in the level of self-concept among students, which is attributed by the researcher that the traditional way of teaching dos not focus enough on developing the social and psychological areas of the child. The traditional ways of teaching only focuses on the child self–care aspects and carrying out the tasks of everyday life skills freely and independently.

This finding agreed with the study of Trull and others Trull Conforti and Doan. (1997) which recommended the importance of finding behavioral and entertaining intervention programs for students in order to raise their self-confidence level rather than relying on traditional methods in teaching that did not prove its effectiveness in solving these problems. Additionally, the results supported Grossi and Habich's (2000) findings and the study of Jalili, Becky, Fathizdan and Hossini (2011), which did not show any improvement of self-concept among students with intellectual disability in the control group not examined by the training and behavioral programs.

Third Null hypothesis III: No statistically significant differences between the performance of the experimental group and control group students, on the dimensions of illustrated self-concept for people with intellectual disability

Table 3

The Results of Mann-Whitney Test results. There are differences between the experimental and control groups after the application of the training program.

Significant level at (0.05)

Area	mean		Mean score		Total Score		U	w	z	Significant level
	experimental	control	Experimental	Control	experimental	Control				
Physical self - concept	1.857	0.009*	2.615-	33.00	5.00	72.00	33.00	10.29	4.71	3.142
Social self - concept	1.857	0.039*	2.061-	37.00	9.00	68.00	37.00	9.71	5.29	3.000
Behavioral self - concept	2.142	0.013*	2.475-	34.00	6.00	71.00	34.00	10.14	4.86	3.428
Cognitive self - concept	2.000	0.653	0.450-	49.50	21.50	55.50	49.50	7.93	7.07	2.142
Independence self- concept	2.000	0.004*	2.859-	31.00	3.00	74.00	31.00	10.57	4.43	3.571

As can be shown in Table 3, there are statistically significant differences at the level (0.05) of self-concept between the ranks averages of the experimental group and control group scores after the application of the training program, consisting of children with intellectual disability. It has also shown a rise in the level of self-concept (physical, social, behavioral, and Independence) at the experimental group, while there were no statistically significant differences in self-concept of cognitive differences.

The researcher attributes the reason for these findings to a series of training activities that were applied to children with intellectual disability, which focused on various dimensions of self-concept, drawing children's attention by playing, having dialogues, drawing or playing roles. Providing an opportunity for the children to practice positive roles in and out the classroom reinforced by the teacher and appraised by the peers, gave a sense of pride among students and pride in their abilities and skills on the physical, social, behavioral and independence levels. But the failure of students to grasp a lot of the cognitive concepts occasionally, and their inability to succeed in many of cognitive exercises, due to the speed of forgetfulness and their inability to analyze and interpret, all that did not help to emerge differences in the level of cognitive self-concept.

This result coincided with the results of Grossi and Habsh's study (2000) study in terms of the clear improvement in self-concept experimental sample when compared with the control sample, particularly, the level of social and behavioral skills. The results of this study have also coincided with the results of Jalili, Beiki, Fathizadan, and Hossini (2011), which demonstrated a statistically significant differences in the level of physical self-concept for students with intellectual disability for the experimental group. In addition, the results of the study of Daou and Hammoud's (2014) study showed differences on the self- concept scale for the experimental samples, especially in social and behavioral aspects.

Recommendations

Based on the results of this study, the researcher recommends the following:

1. Pay attention to measuring self–concept of people with intellectual disability, in order to follow activities and programs that contribute to increase their development;

2. Design training programs based on motor, cognitive and social activities, which can be followed by the rehabilitation centers of people with intellectual disability, in order to develop self-concept in all its dimensions of students enrolled in these centers;

3. Focus on the complementarity of educational and rehabilitative programs offered to people with intellectual disability. Also, focus on the importance of the role of activity teachers due to their huge improvement of emotional and physical development;

4. Train special education teachers to design and create training programs for students with intellectual disability, which helps in raising the level of self – concept in all its dimensions;

5. Train psychologists who work with children with intellectual disability to implement appropriate psychological measurements, including illustrations of self – concept. And train them to follow up on the impact of the training program in terms of self–concept;

6. Involve parents in the application of activity programs in the family and provide them with training and support to help them transfer the training effect to the family.

References

Al Humaidhi, A. (2004). The effectiveness of a behavioral program to develop some social skills among a sample of children with mild intellectual disability, unpublished Master Thesis, Naif Arab University for Security Sciences

Al zak, Y. (2009). Perceived self-efficacy in Jordanian university students in terms of sex, college, and academic level variables. *Journal of Educational and Psychological Sciences*. Bahrain University. 10 (2). 37-58.

Diagnostic and Statistical Manual of Mental Disorders Fifth Edition, DSM-5TM (2013). American Psychiatric Association, Washington, DC.

Dubies, S.; Alsmaduna, A. (1998). The effectiveness of training on self-control in treating attention deficit disorder accompanied with excessive hyperactivity in children with intellectual disability, *Journal of Psychology*, No. 46, pp. 88-118.

Elbaum, B. & Vaughn, S. (2003). For Which Students with Learning Disabilities Are Self-Concept Interventions Effective? *Journal of Learning Disabilities*, V (36). N 2, March/ April.

EL-Dawa, B. & Hammoud, H. (2014). The Effect of Building Up Self-Esteem Training on Students' Social and Academic Skills. Procedia - *Social and Behavioral Sciences* 190 (2015) 146 – 155

Galal, A.; Aljunied, S. (2013). Bahrain's self-concept to test Illustrated self - concept for kindergarten children in the Kingdom of Bahrain "psychometric characteristics and criteria of rationing." *Journal of Educational and Psychological Sciences,* Vol. 14 Issue (1) March.

Ganadi, M. (2013). Measure of illustrated self-concept of ordinary children and those with special needs, the Anglo-Egyptian library

Grossi, K. & Habich, J. (2000). Leaping into social skill success. *Master degree dissertation*, Sain Xavior University, USA.

Hussein, N.; Abdul G, Ghada (2006). Self-concept and aggressive behavior among people with attention deficit disorder, accompanied by hyper activity. *Arabic Studies in Psychology*. 5 (1). 45-78.

Ittyerah, M. & Kumar, N. (2007). The Actual and Ideal Self-concept in Disabled Children, Adolescents and Adults, *Psychology and Developing Societies* 19, 1 (2007): 81–112.

Jalili, F., Beiki, Y., Fathizadan, A., Hossini, F.(2011). The Effect of a Twelve -Week Aerobic Exercise Program on Self-Concept among 8 to 10Years Old Physically and Mentally Disabilities Children. Australian. *Journal of Basic and Applied Sciences,* 5(10): 1187-1190.

Makin, L. (2000). Literacy and starting school: Views of parents and early childhood staff and issues for transition. *A report to the early literacy and social justice project.* New South Wales, Australia, 386.

Ministry of Social Affairs (2014). Illustrated self-concept scale for people with intellectual disability, care and rehabilitation of the disabled Management, Dubai: United Arab Emirates.

Qasim, N.; Fatima, A. (2003). The effectiveness of some recreational program on some life, psychological and motor skills of children with intellectual disability _ "mild". Faculty of Education, University of Alexandria

Suleiman, A. (2002). The effectiveness of training program to increase the adaptive behavior in children with mild intellectual disability, Journal of Psychology, No. (62), the Egyptian General Book Authority, June, pp. 165-167

Trull, T., Conforti, K. & Doan, B. (1997). Borderline personality disorder features in nonclinical young adults, 2 years outcomes. *Journal of abnormal behavior*, 106(2), 307-314.

Yamani, Suad (2006). Hyperactivity disorder and Attention Deficit one of the most common neurological diseases among primary students. Al-riyadh newspaper. No. 0.13855, in May.

Democratic Citizenship Education and Inclusion: Preparing Preservice Teachers for Inclusive Social Studies

Dennis J. Urban, Jr.
Touro College

Abstract

Students classified with disabilities make up more than 13 percent of the public school population in the United States, but they remain on the margins of social studies research. Thus, we know very little about social studies education in inclusive settings. This study explores how social studies methods classes in one teacher education program prepare teachers for inclusive education. Combining theoretical perspectives from democratic citizenship education and Disability Studies in Education (DSE), this study explores how themes of democracy, community, diversity, disability, and inclusion manifested in two social studies methods classes. Findings indicate the methods instructor encouraged and practiced democratic and inclusive pedagogy, but his approach often met resistance from preservice teachers' experiences with disability and inclusion, the intransigence of a traditional special education paradigm, and the limitations of diversity education vis-à-vis DSE. Implications for democratic citizenship education, inclusive education, and teacher education are discussed.

Keywords: democratic citizenship education, inclusive education, teacher education, special education, Disability Studies in Education

Democratic Citizenship Education and Inclusion: Preparing Preservice Teachers for Inclusive Social Studies

Citizenship education is a cornerstone of social studies education. Even as K-12 education moves toward more academic and career-oriented objectives, social studies' goal of promoting the "common good" through the education of "knowledgeable, thinking, and active citizens" remains a stated aim (NCSS, 2013). For too long, however, a sizeable student constituency, those with disabilities, has been sidelined in research on citizenship education, and the common discourse connecting democratic citizenship education and inclusive education has been bisected into discrete domains. More than six million students with disabilities in the United States annually receive special education and related services under the Individuals with Disabilities Education Act (IDEA), which accounts for approximately 13 percent of the total K-12 student population. In addition, more than two-thirds of students classified with disabilities spend most their school day in general education classrooms, and 65% graduate with a high school diploma (National Center for Education Statistics, 2016). Considering these facts, social studies educators cannot afford to marginalize students with disabilities in research and practice, as they must teach all students to become active participants in a democratic society. What is more, it is important to understand how and what prospective social studies educators learn in their preservice programs about teaching students with disabilities to become knowledgeable, thinking, and active citizens.

Research has shown that teacher education programs tend to exclude topics on diversity and disability, or segregate them into separate courses, instead of weaving them into the entire program (Ladson-Billings, 1999; Melnick & Zeichner, 1995). This approach can reinforce traditional paradigms of citizenship education and special education, as well as preservice teachers' apprenticeships of observation (Grossman, 1991; Kennedy, 1999; Labaree, 2000; Lortie, 1975; Zeichner & Gore, 1989; Urban, 2013). Moreover, many experts in the fields of teacher education and Disability Studies in Education (DSE) have not collaborated in meaningful ways to foster the type of educational environment that might prepare prospective teachers for inclusive education (Cosier & Pearson, 2016). And although social studies scholars have examined the teaching and learning social studies in special education and inclusive settings, very few of these studies explicitly consider the theoretical links between inclusive education to democratic citizenship education (Dieker, 1998; Donaldson, Helmstetter, Donaldson, & West, 1994; Hamot, Shokoohi-Yekta, & Sasso, 2005; Lintner & Schweder, 2008; McFarland, 1998; Sheehan & Sibit, 2005; Steele, 2007; Stufft, Bauman, & Ohlsen, 2009; Taylor & Larson, 2000; van Hover, Hicks, & Sayeski, 2012; van Hover & Yeager, 2003).

To address the absence of literature that engages the intersections between social studies, teacher education, and inclusive education, this case study seeks to explore the relationship between inclusive education and democratic citizenship education in preservice social studies methods classes to answer the question, *(How) do social studies methods classes help prepare prospective teachers for inclusive social studies?* Inclusive education is not merely a justice-oriented moral obligation to educate all students (Ashby, 2012), but it is also a federal and state mandate. In New York State, for example, where I conducted this study, preservice teachers seeking certification were required to "develop the skills necessary to provide instruction that will promote the participation and progress of students with disabilities in the general education curriculum" (NYSED, 2010, p. 2). Additionally, this study provided space for preservice students and instructors to engage with and reflect critically upon complex issues of democratic citizenship, inclusion, and disability, and to challenge the discursive contexts that allow traditional special education frameworks and narrow conceptions of democratic citizenship education to persist.

Review of Literature

Although inclusion seeks to realize a vision of democratic education that allows students access to knowledge and social settings that they had previously been denied, much of the research on inclusive social studies rests on traditional, fact-based conceptions of citizenship education (Parker, 2003). At a minimum, social studies education in an inclusive environment must provide curriculum access for students with disabilities through instructional accommodations and differentiated instruction, whereby "teachers select methods through which each individual may learn as deeply…as possible" (Baglieri & Knopf, 2004, p. 527). The existing literature does cover this aspect of citizenship education, but inclusive social studies requires teachers to go beyond the mere transmission of content and skills. Building on Parker's (2003) model of advanced citizenship and the definition of inclusive education that Baglieri et al. (2011) articulate, inclusive social studies education should foster a community of learners within the classroom and school; allow for student participation, deliberation, decision-making, and action; and embrace difference and diversity as essential elements of democracy, incorporating content and skills that reflect this orientation.

Content-Based Learning for Traditional Citizenship Education

Recent research on social studies and special education has stressed pedagogical interventions to facilitate the acquisition of social studies content and skills for students with disabilities. With an emphasis on the transmission of values, knowledge, and skills about United States history and government, this research is situated in the traditionalist camp of citizenship education, which "minimizes social and cultural heterogeneity," ignores student choice and participation, and distances matters of race, gender, class, and ability (Parker, 1996, pp. 111-113). The literature on social studies for students with disabilities stresses the transmission of content knowledge and basic social-science skills (Marshak, Mastropieri, & Scruggs, 2011), such as reading comprehension (Harniss, Caros, & Gersten, 2007; Kinder, Bursuck, & Epstein, 1992), expository writing (De La Paz, 2005), map and chart reading (Brigham, Scruggs, & Mastropieri, 1995), historical reasoning (Ferretti, MacArthur, & Okolo, 2001), and civic knowledge (Hamot, Shokoohi-Yekta, & Sasso, 2005; Hollenbeck & Tindal, 1996). While the content and skills that these authors highlight may be an important foundation for democratic citizenship education, many of these studies do not explore the potential for citizenship education in an inclusive environment by embracing difference and fostering student participation, nor do they resonate with the broader, social aims of democratic citizenship education. Moreover, it is limited because it does not address the ways in which social studies educators, or prospective educators, understand and conceptualize the relationship between democratic citizenship and inclusive education.

Inclusive Democratic Citizenship Education

A small body of research conducted in the fields of elementary education, service learning, and literacy education demonstrates the potential for integrating inclusive education and democratic citizenship education. In her analysis of social networks within an elementary classroom, Zindler (2009) found that careful teacher planning, cooperative learning groups, and social skills instruction contributed to a more inclusive classroom, in which students with disabilities "became increasingly popular as a whole across the year…but it was also clear that they had formed their own social networks within the margins of the class" (pp. 1986-1988). Alleman, Knighton, and Brophy (2007) describe techniques for creating a classroom community by making home-school connections, focusing on cultural universals, and helping students establish their own "ideal classroom." Service learning in inclusive settings also provides opportunities for students with and without disabilities to engage in advanced levels of democratic citizenship education (Dymond, Renzaglia, & Chun, 2008). Finally, research on literacy strategies in inclusive social studies classrooms demonstrates the potential for promoting democratic skills and behaviors for all students (Kliewer, Fitzgerald, Meyer-Mork, Hartman, English-Sand, & Raschke, 2004; Jacobowitz & Sudol, 2010). The emphasis on democratic dispositions, coupled with the curriculum enhancements and interventions detailed in this and other research on social studies and students with disabilities, can move teachers toward more inclusive conceptions of citizenship education.

Education for democratic citizenship must work to "extend the promise of democracy to previously excluded individuals and groups" and to promote "participatory parity" for all students (Bérubé, 2003, p. 56). This endeavor is unlikely to succeed if prospective teachers do not learn how to foster inclusive, democratic classroom environments. Although the research on

social studies and students with disabilities may pay lip service to inclusion and democratic citizenship (Slee, 2001), much of it remains situated within a traditional special education paradigm. Many of these studies continue to rely on a medical model of disability, which seeks to "develop and test professional interventions that attempt to cure or ameliorate deficits in specific areas of human functioning" (Danforth, 2008, p. 46). Social studies research on content acquisition aims to test interventions or find "treatments" for "symptoms" and "deficits" in students with disabilities (Brigham, Scruggs, & Mastropieri, 1995; Curtis, 1991; Horton, Lovitt, & Bergerud, 1990; Kinder, Bursuck, & Epstein, 1992; Lederer, 2000; McFarland, 1998). Traditional special education research for any subject area—to be sure, in this research paradigm, literature on social studies education is no different from research on math or science for students with disabilities—rests on a model of "prevention/treatment/remediation/measurement" rather than providing "a critique of the normative practices, beliefs, and assumptions about disability outlined in the bulk of the traditional special education literature" (Ware, 2005, pp. 104-107).

Pugach (2001) calls for a reorientation of special education research in a qualitative direction to reflect the interpretive nature of inquiry and the democratic potential of inclusive schooling. According to Danforth (2006), "The challenge to disability researchers and theorists is to spend less time worrying about attempting to represent 'the way things are' and more time working…to create greater equality and dignity in public schools" (p. 340). Only after researchers and practitioners redress traditional conceptions of citizenship education and special education can they begin to create greater equity and equality for all students and to move toward inclusive democratic citizenship education. There is some movement in the field of social studies to highlight the narrow focus on historical content and standardized testing in co-taught inclusive social studies classes (Urban, 2010; van Hover, Hicks, & Sayeski, 2012), and to reframe the discourse away from special education and toward Disability Studies in Education (Connor, 2013). The current study seeks to build upon these recent trends by focusing on the preparation of prospective social studies teachers for inclusive education within a theoretical framework that combines democratic citizenship education with Disability Studies in Education.

Theoretical Framework: Inclusive Social Studies

In this article I advance a theoretical framework of inclusive social studies, combining perspectives from democratic citizenship education and Disability Studies in Education (DSE). According to Parker (1996, 2003), democratic citizenship education encourages student agency, emphasizes the shared path of democracy, and balances unity and diversity. DSE seeks to foster inclusive educational communities by problematizing normative assumptions about (dis)ability, recognizing students with disabilities as a historically marginalized social constituency, and embracing a social interpretation of disability that "challenges the view of disability as an individual deficit that can be remediated" (Gabel, 2005 p. 7). Highlighting the similarities between these discrete discursive communities, I attempt to distill a theoretical framework of inclusive social studies that balances the unity and diversity of democratic citizenship; adopts a curricular vision that is flexible, participatory, and accessible to learners of all abilities; and envisions a socially democratic setting that facilitates the development of a community of learners.

Democratic Citizenship Education

Democracy is a concept of affiliation for innumerable groups, movements, and governments, but it is a concept that goes beyond merely learning about and for political participation. "It is," according to Dewey (1927), "the idea of community life itself" (p. 148). This conjoint, associated living, however, does not simply come about of its own accord. Rather, democratic communities must be "appreciated" and "sustained," for "the clear consciousness of a community life, in all its implications, constitutes the idea of democracy" (Dewey, 1927, p. 149). Moreover, as Gutmann (1987) contends, "the democratic ideal of education is that of *conscious* social reproduction," which, in accordance with principles of "nonrepression and nondiscrimination" and with consent of *all* citizens, "focuses on practices of deliberate instruction by individuals and on the educative influences of institutions designed…for educational purposes" (p. 14). To nurture this broad but purposeful conception of democracy, Parker (2003) argues for an "advanced" version of citizenship education.

Parker (2003) delineates three elements of citizenship education that constitute advanced democracy, which include encouraging student participation, treating democracy as an ongoing path, and embracing pluralism and individual difference as essential components of democracy. The first of Parker's advanced ideas about citizenship is student participation, or citizenship education that is both *for* and *through* democracy. Parker's second advanced idea of citizenship education views democracy as an ongoing path, a journey that manifests itself in the social context of the classroom, the school, or, more broadly, the public sphere. Although educators must work to foster democracy in their classroom, it is a goal that is "forever incomplete" (Greene, 1993, p. 218; see also Dewey, 1927). The third element of "advanced" democratic citizenship education embraces pluralism and difference as hallmarks of democracy. Narrow conceptions of citizenship education have minimized cultural heterogeneity and assimilated different groups into a dominant American culture. Parker (2003) argues that diversity is "a democratic necessity" (p. 26). Advanced democratic citizenship, then, must balance political and social unity with group and individual differences.

Schools can provide curricular and civic spaces for purposeful democratic citizenship education. As an educational reform conceived with democratic aims, inclusive education holds great promise for the teaching and learning of democratic citizenship education. Rather than simply providing modifications and accommodations for students with disabilities, however, inclusion requires a social setting that fosters the democratic participation of all students. According to Baglieri and Knopf (2004), "a truly inclusive school reflects a democratic philosophy whereby all students are valued" (p. 525). DSE offers great promise to citizenship education, as it views people with disabilities as a social constituency who must have access to the full benefits of democratic citizenship. Moreover, DSE affirms inclusive education as continuous "struggle against exclusion and oppression…[for] the rights of all to access, participation, and success in education" (Slee, 2011, p. 151). Like democracy, it is an ever-unfinished journey.

Disability Studies in Education

Until the late twentieth century, persons with disabilities had been denied access to the rights and privileges of full citizenship in the United States. They had been labeled "as menaces to society needing control, as children to be pitied and cared for, and as objects of charity" (Griffin, Peters, & Smith, 2007, p. 338). During the nineteenth century, disability was thought to be associated

with immorality and some people advocated that students with disabilities be "institutionalized for life" or sexually sterilized (Giordano, 2007, pp. 15-17). In the 1960s, following the Supreme Court case of *Brown v. Board of Education* and the success of the African-American civil rights movement, persons with disabilities began to organize for equal treatment under the law. The federal government responded with the Rehabilitation Act of 1973 (P.L. 93-112) and the Education for All Handicapped Children Act of 1975 (P.L. 94-142), but a comprehensive law protecting those with disabilities would not arrive until 1990, with the Americans with Disabilities Act (P.L. 101-336).

Even with the passage of civil rights legislation, though, disability has been used to exclude many groups of minority students from mainstream educational settings. For example, students of color, students in poverty, and immigrants are more likely to be classified as learning disabled, and race, class, ethnicity, and disability have been used to exclude students from full citizenship to maintain normative power structures in school and society (Ferri & Connor, 2005; Reid & Knight, 2006). Because the lines of demarcation regarding normalcy and ability have often been employed to exclude and stigmatize certain members of society, scholars have come to see disability as dependent on "social (rather than biological) constructions" (Ferri & Connor, 2005, p. 469).

To redress persistent inequality of students with disabilities, the critical discourse of DSE stresses a social interpretation of disability, which "promotes the importance of infusing analyses and interpretations of disability throughout all forms of educational research, teacher education, and graduate studies in education" (Gabel, 2005, p. 1). Rather than viewing disability as an innate individual deficit, this social interpretation considers the collective social, political, cultural, and educational experiences that have historically marginalized and excluded persons with disabilities (Danforth, 2008; Gabel, 2005). Moreover, DSE repositions students with disabilities and treats them as fully included members of society, promoting "democratic participation" to counter "the destructive consequences of 'Othering'" (Reid & Knight, 2006, p. 18).

In the age of inclusive education, defined broadly as a school-wide initiative for equity and equality for all students, educators must recognize students with disabilities as a social group—as fully integrated, participating citizens in American society (Baglieri, Bejoian, Broderick, Connor, & Valle, 2011). By viewing disability as both a constituency and a concept, DSE "problematize[s] a range of unexamined attitudes, beliefs, and assumptions" people hold about students with disabilities (Ware, 2001, p. 108). Stigmas, stereotypes, perceived inferiority, and other "identity threats…impair a broad range of human functioning" among various social groups (Steele, 2010, p. 15). Questioning educators' conceptions of disability, this framework addresses the ongoing stigmatization of students with disabilities, which can result in a "form of social quarantine" and a denial of education and democratic citizenship (Brown, 2010, p.186; Goffman, 1963). Moreover, a DSE approach critiques the traditional special education paradigm that is often reified in normative school settings and practices, a paradigm that seeks to identify and classify deficits in students, and to treat and cure individuals with disabilities (Pugach, 2001; Ware, 2005).

Toward a Theory of Inclusive Social Studies

While terms like "democratic citizenship" and "inclusion" have contested meanings in the field of education, both aim to extend learning opportunities so that all students may contribute to the classroom community and participate meaningfully in the broader social sphere. Parker's (1996, 2003) framework provides a starting point for the type of citizenship education that suits our increasingly diverse democratic republic, one that emphasizes the shared path of democracy and encourages student deliberation and participation. But in most literature on citizenship education, there is little consideration of the unique circumstances of students with disabilities along the unfinished journey toward inclusive education and democratic citizenship: their shared history of oppression, their recent attainment of full citizenship and civil rights, their gradual integration into mainstream educational settings, and their continued struggles with stigma and ableism. Additionally, while the goals of democratic citizenship education align closely with those of inclusive schooling, there also needs to be consideration of multilevel, differentiated, and universally-designed instruction, which "offers a wide range of learners opportunities to acquire skills, explore content, and develop conceptual understanding" (Oyler, 2006, p. 13).

Unfortunately, much of the research on social studies and students with disabilities is situated within a traditional special education paradigm, which aims to test interventions for students with disabilities to learn basic skills and content. While necessary, this approach is hardly sufficient for the democratic aims of inclusive education, which, like democratic citizenship, is more than simply "a place or a service" but is a "mode of associated living" (Oyler, 2011, p. 206; see also Dewey, 1916). That is why social studies educators and scholars must consider a more inclusive form of democratic citizenship, which incorporates a social interpretation of disability, challenges normative conceptions of both disability and citizenship, and recognizes the promise of citizenship education in the age of inclusive schooling. Moreover, teacher educators should consider what these issues mean for the next generation of social studies teachers, who must attempt to balance the democratic goals of citizenship education and inclusive education with the increasingly undemocratic, content- and test-driven realities of standards-based schooling.

Methodology

With the goal of understanding the teaching and learning of inclusive social studies during a semester of methods coursework and fieldwork—and answering the research questions, *(How) do social studies methods classes help prepare prospective teachers for inclusive social studies?*—I conducted an instrumental case study in a local social studies teacher education program and included students enrolled in undergraduate, graduate, and dual-certification programs in social studies and special education (Stake, 1995). Guided by my theoretical framework, I explored how participants engaged with complex issues like disability, democratic citizenship, and inclusive education.

Context of Study

I conducted this case study at Eastbrook University[1], a university located in the New York City suburbs, which provided access to a college of education that graduates many social studies teachers who live and work in the New York metropolitan and suburban areas, and who teach

[1] Pseudonym

diverse student populations at the secondary level. All undergraduate and graduate social studies majors were required to take the same social studies methods class, and each student also recorded at least 100 hours observing secondary social studies classes.

I chose to observe and select volunteers from the social studies methods courses because they represented the closest thing to a holistic view of Eastbrook's social studies program. The subject-specific methods course "has traditionally been regarded as a cornerstone of teacher education programs," and is one that "most social studies teachers are likely to have in common" (Thornton, 2005, p. 97). They provided a space where I could examine "interaction among instruction, student response, and learning within and, often, outside the methods course" (Clift & Brady, 2005, p. 313). In addition, the requisite middle- and high-school social studies observations were an opportunity for candidates "to establish connections between their university and school learning as well as to trouble the relationship between them" (Segall & Gaudelli, 2007, p. 78). Finally, in the field of social studies, research has demonstrated the impacts of methods courses on preservice teachers' beliefs and practices, particularly in democratic citizenship education (Adler, 2008; Clift & Brady, 2005; Cutsforth, 2010).

Participants

Student participants in this study included undergraduate and graduate students in the preservice social studies teacher education program at Eastbrook University. On the first day of the semester, I distributed a questionnaire to students enrolled in the required social studies methods classes, and 16 students indicated a willingness to participate further in the study, which meant sitting down for a series of three interviews and submitting all their coursework from the methods classes.

Based on students' responses to the questionnaire, their backgrounds, and their willingness to take part in the research project, I identified nine students, four undergraduates and five graduates, to participate in the interviews and to submit coursework for analysis. Participants represented a diverse cross-section of ages, genders, racial identities, abilities, and student statuses, and they had a range of viewpoints on citizenship education and inclusive education (Table 1). Along with the student participants, I interviewed the director of the social studies program, Professor Stern[2], who also taught both social studies methods courses, which allowed me to analyze what was taught versus what was learned in the methods classes.

[2] Pseudonym

Table 1:
Student Participant Information

Student Name*	**Status**	**Gender**	**Age**	**Special Education Certification**	**Self-Identified as Disabled**
Kate	Undergraduate	Female	22	Yes	No**
Michelle	Undergraduate	Female	20	Maybe	No
Kyle	Undergraduate	Male	21	Yes	Yes
Dave	Undergraduate	Male	22	Yes	No
Alicia	Graduate	Female	24	Yes	No**
Lisa	Graduate	Female	24	Yes	No
Matt	Graduate	Male	24	Yes	No
Seema	Graduate	Female	22	No	No
John	Graduate	Male	26	No	No**

* Pseudonyms
** During interviews, these participants revealed that they had been classified as students with disabilities at some point in their lives.

Data Collection and Analysis

Data sources included surveys, interviews, observations, and course documents. First, I distributed an introductory questionnaire that assessed students' attitudes, beliefs, and understandings about social studies, democratic citizenship education, and inclusive education. Next, I conducted 20 naturalistic course observations of undergraduate and graduate social studies methods classes—10 observations in each section. Although I adopted the role of peripheral observer, I occasionally took part in class activities at the request of the course instructor, establishing positive rapport with participants (Adler & Adler, 1998). By carefully recording actions and interactions, utterances and silences, and explicit and implicit curricular decisions, I collected useful data about how the methods classes prepared students for inclusive social studies.

I also conducted a series of three in-depth interviews with each of the nine preservice social studies teachers, one in-depth interview with the methods course instructor, weekly informal discussions with the instructor, and one focus group. The interviews were evenly spaced throughout the semester, and the focus group took place after the courses ended. For all interviews, I used open-ended, semi-structured interview protocols, and I recorded all interviews to ensure accuracy and to enable accurate transcription for analysis and coding (Creswell, 1998).

Finally, I collected documents and course artifacts throughout the semester, including methods course syllabi, weekly handouts, textbooks, and student coursework. I also acquired a syllabus from one of Professor Stern's previous methods courses to ensure he was not tailoring his teaching to my study. A content analysis of the course syllabi, textbooks, and assignments for the social studies methods class revealed the explicit and implicit messages about teaching social studies to all students in inclusive educational settings, and about the ways in which the program conceptualized social studies.

Data analysis was ongoing throughout the study, as I adopted Creswell's (1998) data analysis spiral. Although the emergence of meaning and analytic categories from the data was largely an inductive process, my theoretical framework of Inclusive Social Studies informed the design and interpretation of my study, and thus facilitated the instrumentality of my method. To generate codes, I used line-by-line inductive coding of the data transcripts, notes, and documents (Miles & Huberman, 1984). The theoretical framework of inclusive social studies guided my initial deductive categories of democratic citizenship education and inclusive education, and my inductive categories were subsets of these broader themes. My first round of categorical aggregation resulted in chunks of data related to democratic citizenship education, such as knowing democracy, doing democracy, creating a community of learners, and teaching and learning diversity. I also developed categories related to inclusive education, such as disability and identity, disability and stigma, ableism, inclusion as a place, differentiated instruction, and special education. During a second round of coding, I identified additional themes that were not immediately obvious within my guiding framework of inclusive social studies, such as Universal Design for Learning, reflection and critical reflection, disability and/as diversity, and apprenticeship(s) of observation. To verify conclusions, confirm findings, and eliminate threats

to analytic validity, I used data source and methodological triangulation (Huberman & Miles, 1998; Stake, 1995).

Findings

Citizenship education in the United States often emphasizes traditional themes rather than contemporary problems and social justice (Levine & Lopez, 2004). Normative conceptions of schooling, especially in the current era of high-stakes testing, can hinder democratic education and its constituent elements, such as democratic citizenship education and inclusive education. These trends have also influenced teacher education programs, which are struggling to abide by new national and state standards and to compete with efficiency models promulgated by programs like Teach for America. The goals of democratic and inclusive education are theoretically incongruous with the data-driven practices and pedagogy that currently manifest in schools and in teacher education programs (Oakes, Quartz, Ryan, & Lipton, 2000). Thus, despite the best of efforts of teacher educators who emphasize democratic and inclusive approaches to teaching social studies, these practices can be difficult to realize in the face of neoliberal education trends. A thorough analysis of observation notes, interviews, and course documents revealed that the social studies methods instructor attempted to integrate democratic and inclusive themes into his courses, but these efforts were often thwarted by participants' normative conceptions about and experiences with social studies and inclusion.

Social Studies Methods for Inclusive Social Studies

Professor Stern, Eastbrook University's social studies program director and methods class instructor, was an advocate of democratic citizenship education, and with four decades of social studies teaching experience, and more than 20 years as a teacher educator, Stern's approach to social studies education reflected his beliefs about democratic citizenship. A self-described political and social activist, Stern believed that citizenship education should extend beyond the classroom study of history, that it required student participation, deliberation, and praxis. Therefore, Professor Stern designed and enacted a social studies methods curriculum to counteract dominant, traditional conceptions of citizenship education. This approach was evident in his syllabi, assignments, and pedagogy. By fostering student participation, community, and diversity, Stern deployed a vision of democratic citizenship that countered prevailing practices in schooling and social studies education that seek to undermine democratic citizenship education. In addition, Professor Stern's approach to preparing students for inclusive social studies reflected his understanding of the theoretical consonance between democratic citizenship education and inclusive education. His conception of inclusive education went beyond the mere placement of students classified with disabilities into certain classrooms, and it often addressed issues of diversity, community, and differentiated instruction.

Professor Stern's pedagogy represented, in his words, an "activity-based" approach aimed at fostering a "classroom community," an idea that involved students "working together" and "respecting each other's ideas" to "get them active in a democratic society." Underlying Stern's desire to create a community of learners in his methods classes was a strong ethic of caring (Noddings, 1992). For example, during a mid-semester graduate methods class, I observed graduate students sharing their fieldwork experiences. One student was visibly upset, explaining, "I have a special ed. student who just sits in the corner and does nothing." She did not know how to connect or engage with this student. Stern responded, in a calm, measured, and thoughtful

voice, “Tomorrow, ask if he had breakfast.” Stern then explained that when he taught high school, he would often bring snacks for students whose families could not afford breakfast. The graduate student was visibly touched, as she appreciated Stern’s caring approach to her teaching dilemma and to her student’s needs. In this short episode, Stern modeled a caring relation for the methods class; engaged in a reflective dialogue about teaching and learning; allowed for the student to be the *cared-for* and, potentially, the *carer* in her student teaching placement; and encouraged her to work towards being a better teacher (Noddings, 1992). Moreover, Stern’s response indicated his understanding of the intricacies of disability and diversity, and of how special education classification can depend on any number of issues, including race and poverty (Reid & Knight, 2006).

Professor Stern’s lessons sometimes touched upon the complexities of and relationships between continued discrimination based on race, class, and disability. In our interview at the end of the semester, Stern noted, “One of my goals as a teacher is to create a sense of community, and community means there are going to be diverse people, and that includes people with disabilities. And what I try to get kids to do is to respect each other in the class as part of a community.” In fact, during methods class sessions, Professor Stern often discussed disability and inclusion in terms of diversity and community, drawing on the same principles that guided his teaching of democratic citizenship. In his methods classes, he explained to students that ability, whether actual or perceived, is often linked to a host of factors, such as race, ethnicity, and social class.

Sometimes, however, Stern tended to conflate issues related to disability with the challenges facing English language learners or students in poverty. These diversity factors play a role in how, or whether, children learn in traditional academic settings (Banks & Banks, 2004). But, there was a risk in attending to disability simply as another form of difference under the umbrella of diversity education, because it denied discussion and explication of what makes disability unique; did not address underlying and alternative assumptions about disability; and contributed to the reductionist “misconception of disability as diversity” (Artiles, 2003; Pugach, 2001, p. 447; Pugach & Seidl, 1998). For example, on the final exam, Stern, as part of an essay question he has posed for years, defined “inclusion” as “containing students from different social and economic backgrounds, with different levels of preparation and interest, and including students who had previously been programmed for…special education classes.” In this way, inclusion was tantamount to creating a classroom community of learners, drawing on and attending to student diversity as an essential component of democratic citizenship. Stern also recognized that inclusion involved all students, not just those with disabilities, and that teachers must work to create inclusive learning environments within their classrooms. This partly explains why Stern did not address inclusion and disability as discrete topics during methods classes, but instead integrated them into his broader pedagogical vision regarding diversity and multiculturalism. This approach to teaching about disability and inclusion seemed to result in missed opportunities for students who were not attuned to the same theoretical framework that guided Stern’s methods.

Preparing prospective teachers for inclusive social studies requires lessons in and experience with democracy, community, diversity, and flexible curriculum. Professor Stern’s activity-oriented, differentiated pedagogy embraced many of these practices and incorporate elements of the Universal Design for Learning (see Appendix A), but it often met resistance from student

participants who were used to normative instantiations of social studies and inclusion, which their own educational experiences and observational fieldwork confirmed. Teacher identity is often shaped by contradictory messages that preservice students receive from prior understandings, program coursework, and fieldwork.

Learning to Teach Inclusive Social Studies?

Learning to teach takes place within a complex matrix of prior understandings, social interactions, formal and informal curriculum, and educational fieldwork. Students' prior knowledge, beliefs, and socialization influence what, how, and whether they learn in a traditional preservice teacher education program (Darling-Hammond and Baratz-Snowden, 2005; Donovan, Bransford, & Pellegrino, 1999; Feiman-Nemser, 2008; Lortie, 1975; Pajares, 1992; Zeichner & Conklin, 2005; Zeichner & Gore, 1989). In this study, student participants' attitudes, identity, and prior knowledge, as well as their apprenticeships of observation, were often reinforced by their program experiences outside of Professor Stern's methods class, including classroom observations and special education coursework, which marginalized Stern's pedagogy of inclusion and democracy and instead bolstered normative discourses of schooling. What is more, the stigma of disability and persistence of ableism obstructed students' embrace of inclusive social studies.

Identity, stigma, and ableism. All participants in the study had some personal connection to disability, either from their own educational histories or their relationships with people with disabilities, but they seemed to view disability through a lens of deficiency. In nearly every interview I conducted, participants often attempted to distance themselves from the disability label to avoid the continuing stigma of disability. Disability was a stigmatizing marker for participants. In his seminal work on the subject, Goffman (1963) defines stigma as "an attribute that is deeply discrediting" because of social definitions of what is normal and ordinary (p. 3). Often, stigmatized individuals will manage information about themselves to "pass" for what they and society deem normal (Goffman, 1963, p. 42). The stigma of disability intersects with broader trends of ableism in education, or the social "devaluation of disability" that is deeply "rooted in the discrimination and oppression that many disabled people experience in society" (Hehir, 2002, p. 3). The desire to "overcome" disabilities, or "problems," and to associate with "normal" students, were evidence of the impact that ableism had on the participants (Hehir, 2007). Of the nine student participants in the study, only one, Kyle, identified himself as disabled on the initial survey, and none mentioned their disabilities openly in the methods courses, despite being forward about race, ethnicity, and religion. During my interviews, however, three additional participants eventually revealed that they had been labeled as students with disabilities in primary and secondary school, revealing how participants views disability differently from other identity markers.

Participants dissociated themselves from disability in part because they believed they had overcome it and no longer required the services afforded to them in primary and secondary school. For example, although Kate, an undergraduate student at Eastbrook, still struggled with reading comprehension in college, she decided in high school that she no longer wanted to be associated with special education. John, a second-year graduate student who also did not identify himself as disabled, was classified with a disability in school and had access to resource room, academic services, and IEP accommodations, such as extra time on exams. When I asked why he

did not identify himself as a person with a disability on the questionnaire, he mentioned the embarrassment that comes along with a disability label.

> Interviewer: *You said you were kind of embarrassed. Do you think there was this kind of stigma attached to special education [and] disability?*
>
> John: *Definitely. Definitely. Because people see you socially as normal, per se. You have normal classes, you hang out with normal people outside of school, you're around these students socializing and then they see you in these [resource] rooms and they kind of get a negative perception: "Why were you there? You don't seem like you should be." Because they think it's like a zoo, but it's really not. It definitely has a negative perception and hopefully with time that will go away.*

John's sense of what was "normal" was shaped by social perceptions of disability as abnormal, which was, and continues to be, reinforced by traditional models of special education that label, classify, and segregate students per ability. Alicia, a graduate student seeking dual certification in social studies and special education, discussed how the stigma of disability affected her own identity as a student with Attention Deficit Disorder (ADD). She said,

> *My parents never had a problem with [resource room] because they knew that I was gifted, and I'm not saying that to toot my own horn. My IQ's like 151, I think, or 152…. I have an exceptional 99th-percentile ability. And my life is, it's always been like super-duper struggle.*

Alicia's experiences were somewhat like Kate's and John's. She acknowledged her disability diagnosis, but quickly attempted to distance herself from it to demonstrate that she was "normal," or that she was smarter than the average student classified with a disability. Even though most participants were familiar with disability through relationships or personal experiences, it was not something with which they wished to identify. Unlike other forms of diversity, like race or gender, disability manifested as a source of shame rather than pride.

Disability and/as diversity. When participants discussed their social studies observation fieldwork, many commented that a successful inclusion class was one in which they could not identify students with disabilities. This assimilationist view of inclusive education, a disability studies corollary to the colorblind perspective on race, made it difficult to realize the full potential of pluralistic educational settings (Banks, 2001; Schofield, 2004). For example, Dave, who was skeptical about inclusive education, was excited to share his observation experiences with me. He discussed how all students were fully included in the class, saying, "You didn't even know who had a disability. I didn't know. I still don't know to this day…. They were just treated like everyone's a regular student." John brought up a similar point during our second interview, recalling, "You can't tell who's who. You really can't. Is everyone special ed.? I don't think so." And Kate said of her social studies observations, "I couldn't tell [who had a disability] at all. I think I got a sense of maybe one or two and only because like we learned in special ed.…that they deviate far away from the standard or typical answer."

Participants' attitudes about disability demonstrated the shortcomings of situating disability within a diversity paradigm. Kyle, the only student who acknowledged his own identity as a person with disabilities disability on the initial survey, reflected on the nature of inclusive education: "Inclusion is extremely beneficial for the students with disabilities because it gives them a sense of…[hesitates]…not *normalness*, because no one's normal, but a typical life." As a person with disabilities, Kyle recognized that difference was normal, but his statement revealed how the default discursive mode regarding inclusion presupposes the non-disabled students as "typical."

Participants' responses to interview questions and during the focus group highlighted the challenges of balancing unity and diversity—tensions that manifest in any democratic endeavor—and how community can be misinterpreted as assimilation. Moreover, their comments revealed how disability differed from other forms of diversity. With discussions of race and gender, there were no expectations, at least not explicitly, that all groups should conform to masculine, white, Eurocentric ways of being and knowing. When discussing disability, however, participants perpetuated "the fiction that human variation is a problem that needs solving" (Bejoian & Reid, 2005, p. 221), and remarked repeatedly that inclusion should help students conform to normal academic standards, which may be impossible for some students with disabilities. Cochran-Smith (2004) argues that preservice and new teachers must "move beyond color blindness" and learn to "work effectively in local contexts with learners who are like them and not like them" (p. 62). And some preservice teachers did embrace this model, even if they remained skeptical of the efficacy of inclusive education.

Equity versus efficacy. Based on the results of the introductory survey I distributed to student participants, attitudes toward inclusion were generally favorable, a trend borne out by other research on the topic (Berry, 2010; Gately & Hammer, 2005; Mendez, 2003; Passe & Beattie, 1994; Passe & Lucas, 2011; Pugach, 2005; Stufft, Bauman, & Ohlsen, 2009; van Hover & Yeager, 2003). But participants were ambivalent about the efficacy of inclusion, a concern they expressed in interviews and during methods class discussions. For example, Seema, a graduate student, explained she was "on the fence" about inclusive education:

> *An inclusive classroom does not work for every child. I think there's a degree to what type of a need the child has that can be met in an inclusive classroom, but not every child is meant for an inclusive classroom, I think.*

Several participants had reservations about inclusion, particularly about its potential impact on the pacing and rigor of instruction. This line of thinking was indicative of broader trends in high-stakes testing, in which the deliberative, unhurried path of democratic learning is sacrificed for the sake of the fast-paced academic content coverage (Vinson, Ross, & Wilson, 2011).

Throughout the study, there was an assumption of a normal, ideal pace of instruction, a fixed body of content—a metanarrative or canon of historical knowledge—and skills that teachers must deliver within a given timeframe for class to be successful. Moreover, there was little consideration of democratic citizenship education as a conjoint, communicative experience. For example, Matt, a graduate student, wondering if inclusive social studies "might have to be…[hesitates]…not dumbed down, but maybe you have to spend more time on a specific

topic." Michelle, an undergraduate history major, wondered whether general education classes "might actually be a little too fast for them or something," and that students without disabilities "would feel the class is slowed down or something a little bit."

Participants' fieldwork—100 hours of observation in secondary schools—seemed to reinforce these assumptions, as many of them observed teachers lecturing to cover content. During the focus group, Dave said, "Out of the hundred hours I observed, I have seen one time where they weren't straight lecturing." The other participants nodded in agreement, and it teacher-centered content coverage remained a priority in the classrooms they observed. Participants' concerns about pacing and coverage seemed exacerbated by New York State's testing requirements, where all secondary students must pass two standardized social studies Regents Exams—one in Global History and Geography and one in United States History and Government—and by recent developments in standards-based educational reform. Professor Stern taught, however, there are ways of negotiating through this standardized curriculum of "official knowledge and skills" to allow students "past the gatekeepers of socioeconomic access" while still teaching democratic citizenship education, but participants remained skeptical (Beane & Apple, 1995, p. 17).

Perhaps one of the greatest obstacles to learning inclusive social studies was the belief among participants that teaching methods for students with disabilities were reserved for special education methods courses. In other words, despite the myriad examples of differentiated and Universally Designed instruction I observed in the methods classes, the student participants could not recall the examples until I pointed to them in our interviews and focus group. The dualistic nature of special education instruction—its continued segregation both in secondary schools and as a separate course in teacher education programs—led participants to think that learning to teach in inclusive environments took place in a separate department, not in the social studies program. Ironically, while the teacher education program aimed to promote inclusion by requiring a course in special education, it reinforced the normative notion that education for students with disabilities takes place in a separate environment, and it was one several obstacles to teacher education for inclusive social studies.

Discussion

Inclusive social studies envisions a socially democratic educational setting that fosters the development of a community of learners, attempts to balance the unity and diversity of democratic citizenship, and adopts a curriculum that is flexible, participatory, and accessible to learners of all abilities. Through an examination of participants' prior knowledge and the teaching and learning that took place in the program, this study investigated how social studies methods courses prepared students for inclusive education. Findings revealed that Professor Stern modeled a democratic and inclusive approach to social studies education. His methods courses taught prospective educators about teaching advanced concepts of democratic citizenship, fostering a classroom community of diverse learners, and creating a flexible curriculum for all students. Unfortunately, there was little congruence between what students learned in Stern's class and their own conceptions of social studies education and inclusive education, which their fieldwork confirmed. Participants clung to their initial perceptions about democratic citizenship education, inclusion, and disability. Moreover, the dominance of a normative special education paradigm, which segregated instruction for students with

disabilities, prevented participants from learning many elements of inclusive social studies that were presented in their methods class. Participants' prior knowledge and socialization were reinforced by program coursework and fieldwork that stressed teacher-centered pedagogy, official knowledge, segregationist schooling, and a traditional special education framework—all obstacles to realizing inclusive social studies.

Community, Diversity, and Flexibility

The practice of fostering a classroom community of learners is essential for both democratic citizenship education and inclusive education, and it is a concept that students learned throughout the program. For example, Professor Stern's methods course stressed that creating a "sense of community" in the classroom was paramount, and it hinged on elements of respect, cooperative learning, inclusion, and caring (Matusov, 2001; Noddings, 1992). Stern recognized that classroom communities are neither self-evident nor self-executing, especially given the ethos of individualism that standardized testing promotes. Rather, these democratic educational environments must be nurtured (Zindler, 2009). Data from this study revealed that students supported inclusive education on grounds of equity, even if they were suspicious of its impact on the academic progress of students, and this helps to explain why the concept of classroom community resonated with them. Students recognized the importance of purposefully integrating students with and without disabilities for purposes of socialization and, despite the ever-present subtext of the normative special education paradigm, participants decried segregationist models of schools as unfair and unjust. Others highlighted the significance of having all students work together, in groups or class, to solve problems and accomplish their goals. In this way, participants' positive attitudes about the equity of inclusive education helped them to recognize the broader democratic purposes of schooling.

Creating a flexible curriculum requires many of the same approaches that help to foster a classroom community of learners, such as cooperative learning and peer teaching, but it also demands innovative teaching strategies and classroom structures, including multilevel teaching, differentiated instruction, attention to multiple intelligences, and UDL (Sapon-Shevin, 2007). During our formal and informal interviews, Stern made explicit reference to differentiated instruction on many occasions, and UDL was evident in nearly every methods class I observed (Appendix A). Even if they did not always recognize Professor Stern's integration of differentiated instruction into his methods classes, participants incorporated differentiated instruction into the lesson plans and unit rationales that I collected and analyzed. They included art and music in their lessons to tap into students' multiple intelligences and interests, differentiated texts to facilitate literacy for students of all ability levels, and encouraged cooperative learning to allow for peer and reciprocal teaching and learning. Students sometimes misinterpreted differentiation for modification (see Broderick et al., 2005), but their willingness to integrate differentiated approaches into their lessons demonstrated the potential for inclusive social studies, despite the persistence of the traditional special education framework and the teacher-dominated pedagogy they experienced before and during their time in the program.

The Traditional Special Education Paradigm

Inclusion and special education are very different concepts. Situated in the medical model of disability, special education stresses the identification and classification of students with disabilities to be placed in an appropriate, least restrictive environment. Rather than restructuring

the educational process, schools often expect students with disabilities to adapt, with certain accommodations, to existing, normative structures of schooling with the goal of overcoming their disabilities (Hehir, 2007; Sapon-Shevin, 2007). Much of the existing research on social studies and inclusive education is situated within this traditional special education paradigm, which requires a shift toward the critical discourse of DSE to transform teachers' understandings of disability and inclusion.

The traditional special education paradigm and medical model of disability have deep roots in American education, and they influenced participants' experiences with and beliefs about disability. Nearly half of the participants were reluctant to admit that they had been classified as disabled, but they were quick to mention that they had overcome, or at least mitigated, their disabilities. Other participants, despite their ostensible support for inclusive education and diverse classroom communities, expressed concern about the presence of students with disabilities in mainstream educational settings. In this way, participants' beliefs in educational equity for students with disabilities did not correlate with their skepticism about the efficacy of inclusion as a model for excellence in schooling.

The Limits of Diversity Education

There is a risk in teaching disability in the context of diversity or multicultural education. (Pugach, 2005; Pugach & Seidl, 1998). Stern attempted to avoid this risk by highlighting links between poverty, race, and disability; by teaching lessons on flexible, differentiated instruction; and by embedding "discussion of disability within the larger framework of diversity" (Pugach, 2005, p. 570). But, efforts to weave disability into that broader pedagogy of diversity education often went unnoticed because of the persistence of a traditional special education framework, participants' narrow conceptions of diversity, and the unique challenges that disability poses compared to other forms of diversity.

Students did not view disability the same way as other forms of diversity, such as race, ethnicity, or gender, and perhaps that is because there are very real differences. No doubt, disability classification is often linked to other racial and cultural factors, resulting in the overrepresentation of certain groups, such as students of color and English language learners, in special education settings (Ferri & Connor, 2005; Reid & Knight, 2006). Disability, however, permeates all diversity categories; it weaves through and between other diversity markers, as any individual might become disabled at some point in his or her life. Teaching about disability and inclusion poses unique challenges within a framework of democratic citizenship education**.**

Implications

Over the past decade, democratic citizenship education has steadily been supplanted by math, science, technology, and language arts education. What is more, the current high-stakes, test-based educational climate not only narrows the social studies curriculum, but also affects the "teaching styles and activities" that social studies educators adopt (Mathison, Ross, & Vinson, 2006). Therefore, despite of Professor Stern's best efforts to move toward advanced models of democratic citizenship education—which stressed the importance of student participation, community, and diversity—participants continued to question the value of more democratic approaches to teaching secondary social studies. Within this context, one that emphasizes

objective content coverage over democratic deliberation, teachers, as curricular-instructional gatekeepers, must work "to carve out space" for the type of democratic citizenship education that inclusive social studies demands (Oyler, 2011, p. 153).

The current trends in public schooling also place students with disabilities at a measurable academic disadvantage and make inclusive education increasingly difficult to realize (Bejoian & Reid, 2005). Although legislative accomplishments like IDEA provide a legal mandate for the inclusion of students with disabilities in the least restrictive environment, the current emphasis on standards-based, high-stakes testing undermines inclusion and reinforces the traditional special education paradigm (Baglieri et al., 2011). Moreover, as priorities in education shift "from student needs to student performance, and from what the school does for the student to what the student does for the school," students with special needs become a liability (Apple, 2004, p. 20). Given participants' apprehension about the negative impact students with disabilities might have on the pace of instruction, the standardized testing bears on teachers' attitudes toward inclusive education.

Additionally, neoliberal trends in schooling have forced traditional teacher education programs to undergo changes that make democratic and inclusive education more difficult to realize. As teacher education becomes increasingly market-based and evidence-driven, "the sine qua non of good teacher-preparation policies and practices is that they ensure teachers can ensure pupils' achievement" on standardized exams (Cochran-Smith, 2005, p. 9). What is more, competition from alternative teacher education programs, such as Teach for America, have placed pressure on traditional teacher education programs, like Eastbrook University's, to become more streamlined and cost-efficient. Unfortunately, this "open-market approach to entry into teaching" has resulted in "reduced teacher confidence and efficacy" (Darling-Hammond, Chung, & Frelow, 2002, p. 297). Because time and space for critical reflection are not measurable evaluation data, perhaps schools of education are simply excising this practice, which has implications for democratic schooling within and beyond teacher education programs.

As schools continue to move toward standards-based educational reforms that demand a greater emphasis on testing objective knowledge, the space for democratic education becomes narrower. This study demonstrates how the high-stakes nature of schooling leads to apprehension among preservice teachers about embracing inclusive education and advanced models of citizenship education, which slow down the pace of curriculum and instruction to allow for student deliberation, dialogue, and discovery. No doubt, the deep channels of schooling make it more difficult to navigate against the strong normative current, but there is room to realize an inclusive and democratic version of social studies education.

Conclusion

Social studies methods classes must work to bridge the theoretical and practical divide that persists between the teaching and learning of inclusive social studies. This theoretical inconsistency between coursework and fieldwork is a longstanding problem in teacher education, evidence of the "two-worlds pitfall" that Feiman-Nemser and Buchmann (1985) documented over three decades ago. Overcoming this pitfall—which sent mixed messages to participants and caused them to question the efficacy of Stern's inclusive methods— "requires acknowledging

that worlds of thought and action are legitimately different" (Feiman-Nemser & Buchmann, 1985, p. 64). Such acknowledgement means that teacher education programs must afford students the opportunity to reflect critically and socially on the discursive contexts that shape these two worlds.

Given the time and space to reflect critically upon the dominant conceptions of democratic citizenship education and inclusive education, and to trouble the existing special education paradigm, prospective teachers can build upon notions of classroom community and flexible curriculum, which are essential for both inclusive education and democratic citizenship education and which seemed to resonate with this study's participants. In addition, a DSE approach to teaching and learning about inclusion and disability can help to chisel away the medical model of disability, which serves to perpetuate ableism and stigma, and to complicate the diversity model, which oversimplifies the unique qualities of disability vis-à-vis other socio-cultural identities. Finally, greater collaboration between general and special education departments at schools of education could potentially result in theoretical and pedagogical consistency within teacher education programs, and might trickle down to primary and secondary schools to subvert the segregationist special education paradigm that continues to dominate schooling for students with disabilities. Despite the many barriers with which educators must contend, inclusive social studies is not necessarily a lost cause, although it is certainly a challenging one. But, for the sake of democracy, inclusion, and justice in education, it is an essential endeavor.

References

Adler, P. A., & Adler, P. (1998). Observational techniques. In N. K. Denzin and Y. S. Lincoln (Eds.), *Collecting and interpreting qualitative materials* (pp. 79-109). Thousand Oaks, CA: Sage Publications.

Adler, S. (2008). The education of social studies teachers. In L. S. Levstik and C. A. Tyson (Eds.), *Handbook of research in social studies education* (pp. 329-351). New York: Routledge.

Alleman, J., Knighton, B., & Brophy, J. (2007). Social studies: Incorporating all children using community and cultural universals as the centerpiece. *Journal of Learning Disabilities, 40*(2), 166-173.

Apple, M. W. (2004). Creating difference: Neo-liberalism, neo-conservatism and the politics of educational reform. *Educational Policy, 18*(1), 12-44.

Artiles, A. J. (2003). Special education's changing identity: Paradoxes and dilemmas in views of culture and space. *Harvard Educational Review, 73*(2), 164-202.

Ashby, C. (2012). Disability Studies and Inclusive Teacher Preparation: A Socially Just Path for Teacher Education. *Research & Practice for Persons with Severe Disabilities, 37*(2).

Baglieri, S., & Knopf, J. H. (2004). Normalizing difference in inclusive teaching. *Journal of Learning Disabilities, 37*(6), 525-529.

Baglieri, S., Bejoian, L. M., Broderick, A. A., Connor, D. J., & Valle, J. (2011). [Re]claiming "inclusive education" toward cohesion in educational reform: Disability Studies unravels the myth of the normal child. *Teachers College Record, 113*(10). Retrieved on August 16, 2011, from http://www.tcrecord.org/content.asp?contentid=16428.

Banks, J. A. (2001). Citizenship education and diversity: Implications for teacher education. *Journal of Teacher Education, 52*(1), 5-16.

Banks, J. A., & Banks, C. A. M. (Eds.). (2004). *Multicultural education: Issues and perspectives* (5th ed.). Hoboken, NJ: Wiley.

Beane, J. A., & Apple, M. W. (1995). The case for democratic schools. In M. W. Apple and J. A. Beane (Eds.), *Democratic schools* (pp. 1-25), Alexandria, VA: Association for Supervision and Curriculum Development.

Bejoian, L. M., & Reid, D. K. (2005). A disability studies perspective on the Bush education agenda: The No Child Left Behind Act of 2001. *Equity & Excellence in Education, 38,* 220-231.

Bérubé, M (2003). Citizenship and disability. *Dissent, 50*(2), 52-57.

Berry, R. A. W. (2010). Preservice and early career teachers' attitudes toward inclusion, instructional accommodation, and fairness: Three profiles. *The Teacher Educator, 45*, 75-95.

Brigham, F. J., Scruggs, T. E., & Mastropieri, M. A. (1995). Elaborative maps for enhanced learning of historical information: Uniting spatial, verbal, and imaginal information. *The Journal of Special Education, 28*(3), 440-460.

Broderick, A., Mehta-Parekh, H., & Reid, D. K. (2005). Differentiating instruction for disabled students in inclusive classrooms. *Theory into Practice, 44*(3), 194-202.

Brown, L. M. C. (2010). Stigma: An enigma demystified. In L. J. Davis (Ed.), *The disability studies reader* (3rd ed.) (pp.148-160). New York: Routledge.

Clift, R. T. & Brady, P. (2005). Research on methods courses and field experiences. In M. Cochran-Smith and K. M. Zeichner (Eds.), *Studying teacher education: The report of the AERA panel on research and teacher education* (pp. 309-424). Mahwah, NJ: Lawrence Erlbaum Associates.

Cochran-Smith, M. (2004). *Walking the road: Race, diversity, and social justice in teacher education.* New York: Teachers College Press.

Cochran-Smith, M. (2005). The new teacher education: For better or worse? *Educational Researcher, 34*(7), 3-17.

Connor, D. J. (2013). Who "Owns" Dis/ability? The Cultural Work of Critical Special Educators as Insider–Outsiders. *Theory & Research in Social Education, 41*(4), 494-513.

Cosier, M., & Pearson, H. (2016). Can we talk? The underdeveloped dialogue between teacher education and disability studies. *SAGE Open, 6*(1), 1-10.

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions.* Thousand Oaks, CA: Sage Publications.

Curtis, C. K. (1991). Social studies for students at-risk and with disabilities. In J. P. Shaver (Ed.), *Handbook of research on social studies teaching and learning* (pp. 157-174). New York: Macmillan.

Cutsforth, J. (2010). *Preservice teachers' changing understandings about teaching social studies: The role of three secondary social studies methods courses*. Unpublished doctoral dissertation, Teachers College, Columbia University.

Danforth, S. (2008). John Dewey's contributions to an educational philosophy of intellectual disability. *Educational Theory, 58*(1), 45-62.

Danforth, S. (2006). From epistemology to democracy: Pragmatism and the reorientation of disability research. *Remedial and Special Education, 27*(6), 337-345.

Darling-Hammond, L., & Baratz-Snowden, J. (2005). *A good teacher in every classroom: Preparing the highly qualified teachers our children deserve*. San Francisco: Jossey-Bass.

Darling-Hammond, L., Chung, R., & Frelow, F. (2002). Variation in teacher preparation: How well do different pathways prepare teachers to teach? *Journal of Teacher Education, 53*(2), 286-302.

De La Paz, S. (2005). Effects of historical reasoning instruction and writing instruction in culturally and academically diverse middle school classrooms. *Journal of Educational Psychology, 97*(2), 139-156.

Dewey, J. (1927). *The public and its problems.* Denver: Alan Swallow Press.

Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education.* New York: Free Press.

Dieker, L. A. (1998). Rationale for co-teaching. *Social Studies Review, 37*(2), 62-65.

Donaldson, R.M., Helmstetter, E., Donaldson, J., & West, R. (1994). Influencing high school students' attitudes toward and interactions with peers with disabilities. *Social Education, 58*(4), 233-237.

Donovan, M. S., Bransford, J. D., & Pellegrino, J. W. (1999). *How people learn: Bridging research and practice.* Washington, DC: National Academy Press.

Dymond, S. K., Renzaglia, A., & Chun, E. J. (2008). Inclusive high school service learning programs: Methods for and barriers to including students with disabilities. *Education and Training in Developmental Disabilities, 43*(1), 20-36.

Feiman-Nemser, S. (2008). Teacher learning: How do teachers learn to teach? In M. Cochran-Smith, S. Feiman-Nemser, and D. J. McIntyre (Eds.), *Handbook of research on teacher education: Enduring questions in changing contexts* (3rd ed.) (pp. 698-705). New York: Routledge.

Feiman-Nemser, S., & Buchmann, M. (1985). Pitfalls of experience in teacher education. *Teachers College Record, 87*(1), 53-65.

Ferretti, R. P., MacArthur, C. D., & Okolo, C. M. (2001). Teaching for historical understanding in inclusive classrooms. *Learning Disability Quarterly, 24*, 59-71.

Ferri, B. A. & Connor, D. J. (2005). Tools of exclusion: Race, disability, and (re)segregated education. *Teachers College Record, 107*(3), 453–474.

Gabel, S. L. (Ed.). (2005). *Disability studies in education: Readings in theory and method*. New York: Peter Lang.

Gately, S., & Hammer, C. (2005). An exploratory case study of the preparation of secondary teachers to meet special education needs in the general classroom. *The Teacher Educator, 40*(4), 238-256.

Giordano, G. (2007). *American special education: A history of early political advocacy*. New York: Peter Lang.

Goffman, E. (1963). *Stigma: Notes on the management of spoiled identity.* New York: Simon and Schuster.

Griffin, P., Peters, M. L., & Smith, R. M. (2007). Ableism curriculum design. In M. Adams, L. A. Bell, & P. Griffin (Eds.), *Teaching for diversity and social justice* (pp. 335-358). New York: Routledge.

Grossman, D. L. (2008). Democracy, citizenship education and inclusion: A multi-dimensional approach. *Prospects, 38,* 35-46.

Grossman, P. L. (1991). Overcoming the apprenticeship of observation in teacher education coursework. *Teaching and Teacher Education, 7*(4), 345-357.
Gutmann, A. (1987). *Democratic education*. Princeton: Princeton University Press.
Hamot, G. E., Shokoohi-Yekta, M, & Sasso, G. M. (2005). Civic competencies and students with disabilities. *Journal of Social Studies Research, 29*(2), 34-45.
Harniss, M. K., Caros, J., Gersten, R. (2007). Impact of the design of U.S. history textbooks on content acquisition and academic engagement of special education students: An experimental investigation. *Journal of Learning Disabilities, 40*(2), 100-110.
Hehir, T. (2002). Eliminating ableism in education. *Harvard Educational Review, 72*(1), 1-32.
Hehir, T. (2007). Confronting ableism: Improving instruction for students with learning needs. *Educational Leadership, 64*(5), 8-14. Retrieved on July 6, 2012, from http://www.ascd.org/publications/educational-leadership/feb07/vol64/num05/Confronting-Ableism.aspx.
Folbre, N., Heintz, J., & Center for Popular Economics. (2000). *The ultimate field guide to the US economy: A compact and irreverent guide to economic life in America*. New York: New Press.
Hodder, I. (1998). The interpretation of documents and material culture. In N. K. Denzin and Y. S. Lincoln (Eds.), *Collecting and Interpreting Qualitative Materials* (110-129). Thousand Oaks, CA: Sage Publications.
Horton, S. V., Lovitt, T. C., & Bergerud, D. (1990). The effectiveness of graphic organizers for three classifications of secondary students in content area classes. *Journal of Learning Disabilities, 23*(1), 12-29.
Huberman, A. M. & Miles, M. B. (1998). Data management and analysis methods. In N. K. Denzin and Y. S. Lincoln (Eds.), *Collecting and interpreting qualitative materials* (pp. 179-210). Thousand Oaks, CA: Sage Publications.
Jacobowitz, T. & Sudol, K. A. (2010). Literacy strategies that promote democratic skills, attitudes, and behaviors in the social studies classroom. *Social Studies Research and Practice, 5*(3), 62-73.
Kennedy, M. M. (1999). The role of preservice teacher education. In L. Darling-Hammond and G. Sykes (Eds.), *Teaching as the learning profession: Handbook of teaching and policy* (pp. 54-86). San Francisco: Jossey Bass.
Kinder, D., Bursuck, W., & Epstein, M. (1992). An evaluation of history textbooks. *The Journal of Special Education, 25*(4), 472-491.
Kliewer, C., Fitzgerald, L. M., Meyer-Mork, J., Hartman, P., English-Sand, P, & Raschke, D. (2004). Citizenship for all in the literate community: An ethnography of young children with significant disabilities in inclusive early childhood settings. *Harvard Educational Review, 74*(4), 373-403.
Labaree, D. F. (2000). On the nature of teaching and teacher education: Difficult practices that look easy. *Journal of Teacher Education, 51*(3), 228-233.
Ladson-Billings, G. (1999). Preparing teachers for diverse student populations: A critical race theory perspective. *Review of Research in Education, 24*, 211-247.
Lederer, J. M. (2000). Reciprocal teaching of social studies in inclusive elementary classrooms. *Journal of Learning Disabilities, 33*(1), 91-106.
Levine, P., & Lopez, M. H. (2004). Themes emphasized in social studies and civics classes: New evidence. CIRCLE: The Center for Information & Research on Civic Learning & Engagement. Retrieved on July 31, 2012, from

http://www.civicyouth.org/PopUps/FactSheets/FS_Themes_Emphasized_SocStudies_Civics.pdf.
Lintner, T. & Schweder, W. (Eds.). (2011). *Practical strategies for teaching K-12 social studies in inclusive classrooms*. Charlotte, NC: Information Age Publishing.
Lintner, T. & Schweder, W. (2008). Social studies in special education classrooms: A glimpse behind the closed door. *Journal of Social Studies Research*, 32 (1), 3-9.
Lortie, D. (1975). *Schoolteacher: A sociological study*. Chicago: University of Chicago Press.
Marshak, L., Mastropieri, M. A., & Scruggs, T. E. (2011). Curriculum enhancements in inclusive social studies classrooms. *Exceptionality, 19*(2), 61-74.
McFarland, J. (1998). Instructional ideas for social studies teachers of inclusion students. *The Social Studies, 89*(4), 150-153.
Mathison, S., Ross, E. W., Vinson, K. D. (2006). Defining the social studies curriculum: Influence of and resistance to curriculum standards and testing in social studies. In E. W. Ross (Ed.), *The social studies curriculum: Purposes, problems, and possibilities* (pp. 99-114). Albany, NY: SUNY Press.
Matusov, E. (2001). Intersubjectivity as a way of informing teaching design for a community of learners classroom. *Teaching and Teacher Education, 17*, 383-402.
Melnick, S. L., & Zeichner, K. M. (1995). *Teacher education for cultural diversity: Enhancing the capacity of teacher education institutions to address diversity issues.* East Lansing, MI: The National Center for Research on Teacher Education. Retrieved on August 22, 2012, from http://ncrtl.msu.edu/http/rreports/html/pdf/rr954.pdf.
Mendez, M. E. (2003). *Beliefs and attitudes of preservice secondary history teachers toward inclusion and collaboration.* Unpublished doctoral dissertation, Illinois State University.
Miles, M. B., and Huberman, A. M. (1984). *Qualitative data analysis: A sourcebook of new methods*. Newbury Park, CA: Sage Publications.
Minarik, D. W., & Lintner, T. (2011). The push for inclusive classrooms and the impact on social studies design and delivery. *Social Studies Review, 50*(1), 52-55.
National Center for Education Statistics. (2016, May). The Condition of Education - Participation in Education - Elementary/Secondary - Children and Youth with Disabilities - Indicator May (2016). Retrieved July 12, 2016, from http://nces.ed.gov/programs/coe/indicator_cgg.asp.
National Council for the Social Studies (2013). *The college, career, and civic life (C3) framework for social studies state standards: Guidance for enhancing the rigor of k-12 civics, economics, geography, and history.* Silver Spring, MD: NCSS.
New York State Education Department. (2010). *Regulation changes for all teacher education programs and restructuring students with disabilities certification*. Retrieved on February 12, 2011, from http://www.highered.nysed.gov/pdf/memo1152010.pdf.
Noddings, N. (1992). *The challenge to care in schools: An alternative approach to education.* New York: Teachers College Press.
Oakes, J., Quartz, K. H., Ryan, S., & Lipton, M. (2000). Becoming good American schools. *Phi Delta Kappan, 81*(8), 568-575.
Oyler, C. (2006). *Learning to teach inclusively: Student teachers' classroom inquiries.* Mahwah, NJ: Lawrence Erlbaum Associates.
Oyler, C. (2011). *Actions speak louder than words: Community activism as curriculum*. New York: Routledge.

Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research, 62*(3), 307-332.
Parker, W. C. (1996). "Advanced" ideas about democracy: Toward a pluralist conception of citizen education. *Teachers College Record, 98*(1), 104-125.
Parker, W. C. (2003). *Teaching democracy: Unity and diversity in public life.* New York: Teachers College Press.
Passe, J. & Beattie, J. (1994). Social studies instruction for students with mild disabilities: A progress report. *Remedial and Special Education, 15*(4), 227-233.
Passe, J., & Lucas, A. (2011). Social studies teachers' beliefs and practices for teaching students with disabilities: A progress report. In T. Lintner and W. Schweder (Eds.), *Practical strategies for teaching k-12 social studies in inclusive classrooms* (pp.1-8). Charlotte, NC: Information Age Publishing.
Pugach, M. C. (2001). The stories we choose to tell: Fulfilling the promise of qualitative research for special education. *Exceptional Children, 67*(4), 439-453.
Pugach, M. C. (2005). Research on preparing general education teachers to work with students with disabilities. In M. Cochran-Smith and K. M. Zeichner (Eds.), *Studying teacher education: The report of the AERA panel on research and teacher education* (pp. 549-590). Mahwah, NJ: Lawrence Erlbaum Associates.
Pugach, M. C., & Seidl, B. L. (1998). Responsible linkages between diversity and disability: A challenge for special education. *Teacher Education and Special Education, 21*(4), 319-333.
Reid, D. K. & Knight, M. G. (2006). Disability justifies exclusion of minority students: A critical history grounded in disability studies. *Educational Researcher, 35*(6), 18-23.
Sapon-Shevin, M. (2007). *Widening the circle: The power of inclusive classrooms.* Boston: Beacon Press.
Schofield, J. W. (2004). The colorblind perspective in schools: Causes and consequences. In J. A. Banks and C. A. McGee Banks (Eds.), *Multicultural education: Issues and perspectives* (5th ed.) (pp. 265-288). Hoboken, NJ: Wiley.
Segall, A., & Gaudelli, W. (2007). Reflecting socially on social issues in a social studies methods course. *Teaching Education, 18*(1), 77-92.
Sheehan, J. J., & Sibit, S. A. (2005). Adapting lessons for the special needs student. *Social Studies and the Young Learner, 18*(1), 4-6.
Slee, R. (2011). *The irregular school: Exclusion, schooling, and inclusive education.* New York: Routledge.
Slee, R. (2001). Social justice and the changing directions in educational research: The case of inclusive education. *International Journal of Inclusive Education, 5*(2/3), 167-177.
Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage Publications.
Steele, C. M. (2010). *Whistling Vivaldi and other clues to how stereotypes affect us.* New York: W. W. Norton & Company.
Stufft, D. L., Bauman, D., & Ohlsen, M. (2009). Preferences and attitudes toward accommodations of traditional assessment in secondary social studies classrooms. *Social Studies Research and Practice, 4*(2), 87-98.
Taylor, H. E. & Larson, S. M. (2000). Teaching elementary social studies to students with mild disabilities. *Social Education, 64*(4), 232-235.
Thornton, S. J. (2005). *Teaching social studies that matters: Curriculum for active learning.* New York: Teachers College Press.

U.S. Department of Education (2009). 28th annual report to Congress on the implementation of the *Individuals with Disabilities Education Act*, 2006. Retrieved on February 1, 2010, from http://www2.ed.gov/about/reports/annual/osep/2006/parts-b-c/28th-vol-1.pdf.

Urban, D. J. (2013). *Toward a framework of inclusive social studies: Obstacles and opportunities in a preservice teacher education program.* Unpublished doctoral dissertation, Columbia University.

Urban, D. J. (2010). *The roles of collaborative teachers in an inclusive social studies classroom.* Unpublished manuscript, Teachers College, Columbia University.

van Hover, S. D. & Yeager, E. A. (2003). Secondary history teachers and inclusion of students with disabilities: An exploratory study. *Journal of Social Studies Research, 27* (1), 36-45.

van Hover, S., Hicks, D., & Sayeski, K. (2012). A case study of co-teaching in an inclusive secondary high-stakes World History I classroom. *Theory & Research in Social Education, 40*(3), 260-291.

Vinson, K. D., Ross, E. W., & Wilson, M. B. (2011). Standards-based educational reform and social studies education: A critical introduction. In W. B. Russell (Ed.), *Contemporary social studies: An essential reader* (pp. 153-172). Charlotte, NC: Information Age Publishing.

Ware, L. (2005). Many possible futures, many different directions: Merging critical special education and disability studies. In S. L. Gabel (Ed.), *Disability studies in education: Readings in theory and method* (pp. 103-124). New York: Peter Lang.

Yin, R. K. (1994). *Case study research: Design and methods* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Zeichner, K. M., & Conklin, H. G. (2005). Teacher education programs. In M. Cochran-Smith and K. M. Zeichner (Eds.), *Studying teacher education: The report of the AERA panel on research and teacher education* (pp. 645-735). Mahwah, NJ: Lawrence Erlbaum Associates.

Zeichner, K. M., & Gore, J. M. (1989). *Teacher socialization.* East Lansing: National Center for Research on Teacher Education, Michigan State University. Retrieved on March 10, 2011, from http://ncrtl.msu.edu/http/ipapers/html/pdf/ip897.pdf.

Zindler, R. (2009). Trouble in paradise: A study of who is included in an inclusion classroom. *Teachers College Record, 111*(8), 1971-1996.

Zinn, H., & Arnove, A. (2007). *Readings from voices of a people's history of the United States*. New York: Seven Stories Press.

About the Author

Dennis J. Urban, Jr., Ph.D., is an adjunct professor of education at Touro College, New York, where he teaches classes on social studies methods, elementary education, history, and philosophy. He is also a full-time social studies teacher at John F. Kennedy High School in Bellmore, New York, where he has taught United States history, government, sociology, and historical research. Dr. Urban has published and presented on inclusive education, democratic citizenship education, social studies methods, local history, social justice, and educational technology.

APPENDIX A

Examples of Universal Design for Learning in Stern's Methods Courses

UDL Principle	Examples from Methods Courses
Multiple Means of Representation	- Students designed an activity sheet with rewritten and/or adapted documents from Zinn and Arnove (2007) (assignment). - In pairs, students edited a *New York Times* article for use in an inclusive High School class (observation 9/20). - Professor Stern presented examples of differentiated text: edited, adapted, and rewritten versions of Anne Hutchinson's trial (observation 9/20). - Professor Stern took students on a walking tour of the history of slavery in Manhattan, which was preceded by an interactive Web site activity (observation 10/25; field trip). - Professor Stern gave a mini-lesson on using music and song in social studies classes (observation 10/25). - Professor Stern modeled a "Gallery Walk" about the transformation of the United States during the 1920s (observation 11/8). - Professor Stern modeled a lesson on Irish immigration that included a discussion of present-day immigration issues followed by multiple sources of information, such as songs, poems, newspapers, personal correspondence, and images (observation 11/8). - Professor Stern distributed portions of a curriculum on the Irish Famine that included differentiated text (observation 11/15). - Professor Stern distributed portions of a curriculum guide on "Slavery and the Law" to provide examples of differentiated instruction, noting that teachers can incorporate these in various ways, depending on the class (observation 11/22). - Professor Stern assigned portions of an economics book in which the lessons were differentiated (Folbre, Heintz, & Center for Popular Economics, 2000), including an image, a graph, and written text for each economic theme (observation 12/6).
Multiple Means of Action and Expression	- Students created and presented a Tree of Liberty poster, which represented their understandings of American history and society (assignment). - Students performed a rap, poem, interpretive dance, or song that explained the main ideas of their Unit Plan (assignment). - Some students performed portions of the differentiated texts of Anne Hutchinson's trial (observation 9/20). - Professor Stern arranged students into a classroom assembly line to model methods for teaching about industrialization (observation 10/18).

	- During class discussions and debates, students engaged in written and oral expression (multiple observations). - Following the 1920s "Gallery Walk," students had the option of presenting a rap or a poem to the class to summarize the lesson (observation 11/8). - During discussion/debate on Occupy Wall Street, some students stood to deliver portions of a speech by Mary Elizabeth Lease (observation 11/15). - Students engaged in a role-play activity about the Civil Rights march in Selma in 1965 (observation 11/22).
Multiple Means of Engagement	- In groups, students created a Unit Plan that required differentiated teaching approaches (assignment). - In groups, students chose five significant newspaper headlines to frame study of American history (observation 9/6). - Students practiced a "writing buddies" approach for peer reviewing and editing (observation 10/11). - For many assignments and activities, students worked in groups and regulated their own progress (multiple observations).

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 75 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