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***Responses to Positive versus Negative Interventions to Disruptive Classroom Behavior
in a Student with Attention Deficit Hyperactivity Disorder (ADHD)***

**Renee B. Brown
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Abstract

This study reviews pertinent research, then uses a single-subject experimental design and methodology to assess the impact of both positive and negative interventions to reduce the incidence of inappropriate classroom behavior in a 12.2 year old male student with Attention Deficit Hyperactivity Disorder (ADHD). In the context of this study, inappropriate classroom behavior is defined as speaking out inappropriately in class. Evaluation of the data indicates several methods that (a) succeed in reducing instances of inappropriate behavior, and (b) demonstrated synergistic effects when used in combination. While not eliminated completely, instances of this inappropriate behavior were reduced from 5.2 instances per class session to less than one instance per class session.

***Responses to Positive versus Negative Interventions to Disruptive Classroom Behavior
in a Student with Attention Deficit Hyperactivity Disorder (ADHD)***

Because speaking out in class is a frequently occurring problem (though not limited to students with ADHD), and because of the distractions and frustrations associated with such negative behavior (Reid, Maag, & Vasa, 1993), this research is focused on identifying the methods most useful and effective in curbing such behavior. A student making off-topic comments is not optimizing his class-time, as indicated by his attention to off-topic subjects. In the following excerpt, Nelson and Nelson (2000) summarize the impact of ADHD on the student:

It is when the child enters the more structured environment of the elementary school that the difficulties become significant. Poor attention span, impulsiveness, lack of self-control, poor social skills, high incidence of “off-task” behavior, and difficulty finishing school work make learning difficult for the ADHD child. ADHD children tend to focus on the wrong stimuli at the wrong times and for the wrong lengths of time. They are distracted from what is relevant to the learning process, leading to poor academic progress (p. 16).

As discussed in the above excerpt, speaking out inappropriately and other distracting behaviors can lead to poor academic performance. This poor academic performance may be misinterpreted – by the parents, the teachers, and the student – as a lack of innate intelligence. More correctly, and more commonly, this lack of performance is a reflection of other factors. If these other factors can be identified and remedied, academic improvement well may follow. Regardless, remedying these factors – such as talking out

inappropriately in class – can reduce frustration and improve the learning environment for everyone in the classroom.

Literature Review

Recent literature indicates positive, rather than negative, corrective actions have the most beneficial and dramatic impact on undesirable behaviors in students with ADHD (e.g., Smith & Gouze, 2004). In addition to being a powerful tool for changing students' behaviors, positive feedback and strategies can help boost students' self-esteem. Positive feedback and strategies help students see themselves as capable and responsible (whereas frequent punishment tends to reinforce a self-perception that the student is irresponsible or inherently bad) (Smith & Strick, 1997).

In addition to positive reinforcement steps, students with ADHD benefit from structure – so long as that structure is not overly rigid or inflexible. Structure provides a known, stable framework for learning, and provides a foundation for building and harnessing creativity within acceptable boundaries (Hallowell & Ratey, 1994).

As with most areas of life, to effect positive change, there must exist some desire for improvement on the part of the student himself. In his popular work on ADHD, Stein (2001) maintains that the key to improved school performance is the child's motivation. In the absence of the student's desire – whether spoken or even acknowledged – to change and improve, little positive impact can be made by others. Additionally, consistent with other behavior modifications, timely reinforcement of positive behaviors is a vital aspect of improving overall behavior (Garber, Garber & Spizman, 1990). Timely positive feedback keeps the student focused on (and rewarded for) near-term goals and objectives, when the student may have difficulty focusing on broad, long-term goals.

In their article on classroom management of students with Attention Deficit Hyperactivity Disorder (ADHD), DuPaul, Weyandt, and Janusis (2011) discuss a variety of strategies for educators to employ with students with ADHD. The primary methods discussed include “behavioral interventions, modifications to academic instruction, and home-school communication” (p. 35). The behavioral interventions discussed include preventive strategies such as ensuring the student is aware of classroom rules and providing frequent praise for following the rules (p. 36). Academic modifications are frequently reduced-length assignments, but the authors note another effective strategy is giving the student choices of methods to complete a task (e.g., choosing among similar assignments, choosing sequencing of actions) (p. 36). DuPaul, Weyandt, and Janusis also note that behaviors associated with ADHD frequently manifest at home as well as at school; communication and cooperation with parents can help the student both inside and outside school (p. 38). Lastly, these authors contend that a combination of strategies, including coordination between teachers and a multi-year continuous effort, produce the most effective results (p. 39).

DuPaul, Weyandt, and Janusis stress integration not only of strategies and collaboration by faculty members, but also reaching outside the school to contribute to a greater quality of life for the student. Consequently, by focusing not just on a checklist of strategies to ease the teacher's frustrations in the classroom, but also on factors outside the classroom, the authors provide a broad-based discussion of integrated home and school strategies; such broad-based strategies should pay dividends for the teacher, for the parents, and most importantly for the student as he sees a greater similarity and continuum of care between his teacher/school and his parents/home.

DuPaul, Weyandt, and Janusis provide helpful strategies to effect improvements not just in the student with ADHD, but as well in the student's life both in and out of school; in this regard, the authors' strategies contribute to the student's life education as well as his academic education. Within the classroom, the authors' strategies provide easily adopted methods to effect positive changes with minimal disruption to the other students in the class. Further, these strategies can be implemented without extensive training or preparation on the part of general education teachers, who are currently being asked to provide increasing support and accommodations to students such as those with ADHD.

Interestingly — and pertinent to the interventions used in this study — several recent studies, including Pellegrini and Bohn (2005), discuss the role and benefits of recess as a curriculum component for primary school students. Pellegrini and Bohn maintain that unstructured play time both provides an outlet for youthful energies and provides the students a break from mentally challenging classroom studies (p. 14). As the focus for educators continues to shift towards accountability, schools are maximizing instructional time, but with corresponding reductions in non-instructional time, such as recess (p. 13). Notably, the authors contend that extended academic periods without recess could be a factor in the increased incidence/diagnosis of Attention Deficit Hyperactivity Disorder (ADHD); such extended academic periods provide inadequate outlets for natural energy levels among primary students (p. 17). The authors conclude that recess is necessary for social interaction, for physical conditioning, and for relief from sustained academic studies (p. 17).

Pellegrini and Bohn provide credible support for their claims, both with supporting research and with logical, convincing arguments. Their research calls for a reexamination of school scheduling with a view toward reintroducing/reinforcing recess time in the primary school day (p. 17). Pellegrini and Bohn effectively posit the academic and holistic benefits of recess; benefits that indicate more, not less, recess is necessary for primary school students.

By pointing out the benefits of recess during a demanding academic day, Pellegrini and Bohn draw attention to the diminished time allotted for recess as a means to accommodate more academic time. In too many instances, reduction in time allotted for non-instructional activities has been pursued as a means to boost academic performance. Despite these non-instructional reductions, schools have generally not achieved the desired levels of academic performance. Pellegrini and Bohn point out that reductions in recess time have been seen as “commonsensical” (p. 14) and widely adopted, despite a

lack of empirical evidentiary support. Whether considering recess time reductions or other fundamental changes to the historical educational model, educators should base decisions on empirically validated options rather than on unproven ideas that may have unintended consequences (e.g., the possible increased incidence of perceived ADHD resulting from reduced recess time).

In unrelated research, Birchwood and Daley (2012) provide the results of a study confirming that much of what is known about Attention Deficit Hyperactivity Disorder (ADHD) in primary school children also holds true for older populations with ADHD (e.g., middle school, high school, and adults) (p. 230). Early thought in ADHD held that it was “outgrown” at puberty or during the middle school years (p. 225); the authors demonstrate that ADHD has long-term effects extending even into adulthood. While most recognize that ADHD has a negative impact on one’s academic performance and prognosis (p. 225), the authors found consistent outcomes between ADHD and anxiety, motivation, and depression (p. 225).

Birchwood and Daley conducted a statistically rigorous study to support their idea that ADHD has negative impacts for students well beyond the primary school years. As the authors note, the ADHD symptoms were self-reported (by subjects aged 15 to 16 years old); a secondary (e.g., parental) reinforcement of the symptoms may have added validity to the results, but the subjects were of an age considered reliable in self-reporting (p. 226). An analysis of the correlation, rather than just the concurrence, of ADHD and depression, motivation, and anxiety would be helpful, but the authors held that their study included too many variables to make reliable correlations of these factors (p. 230).

By pointing out the long-term “continuum” (p. 230) of the effects of ADHD, Birchwood and Daley demonstrate that ADHD is not just a problem affecting younger students. Given the authors’ conclusion that ADHD has long-term effects, educators should be more diligent in helping students with ADHD master self-management skills – the student with ADHD should not be considered merely in the light of helping the educator determine short-term accommodations or interventions, but with a longer view of helping the student learn to cope with a long-term impairment.

Method

The data for this study, collected and documented at a faith-based private school with the assistance and support of my previous administrator, as well as the informed consent of the student’s parents, was designed to indicate the relative effectiveness of positive versus negative reinforcement for this student, a 12.2 year old Caucasian male. For student privacy, no identifiable information will be revealed; the student is identified by the pseudonym “Owen.”

This study used a single-subject experimental design and methodology, which as Gall, Gall, and Borg (2010) note, is useful for behavioral analysis/modification in a given subject to reduce the incidence of undesirable behavior (e.g., speaking out inappropriately in class) (p. 310). The variables involved in this research included multiple independent

variables (differing interventions, combinations of successful interventions) and a fixed dependent variable, defined as the number of times the participant student spoke out inappropriately per class session. The working hypothesis for this research stated that a student with ADHD would be more responsive to positive interventions than to traditional negative interventions in curbing inappropriate behavior. The specific interventions evaluated included traditional (primarily negative) interventions (e.g., punishment- or administrator-oriented interventions) as well as less traditional reward-based positive interventions.

The baseline and each intervention were measured over five consecutive days' class periods each, recorded by the teacher. To minimize the effect of extraneous variables, the observations were taken within a consistent subject area, and a consistent time of day. Other extraneous variables, such as the participant's health, mood, and family/social factors, could not be measured or evaluated.

Results

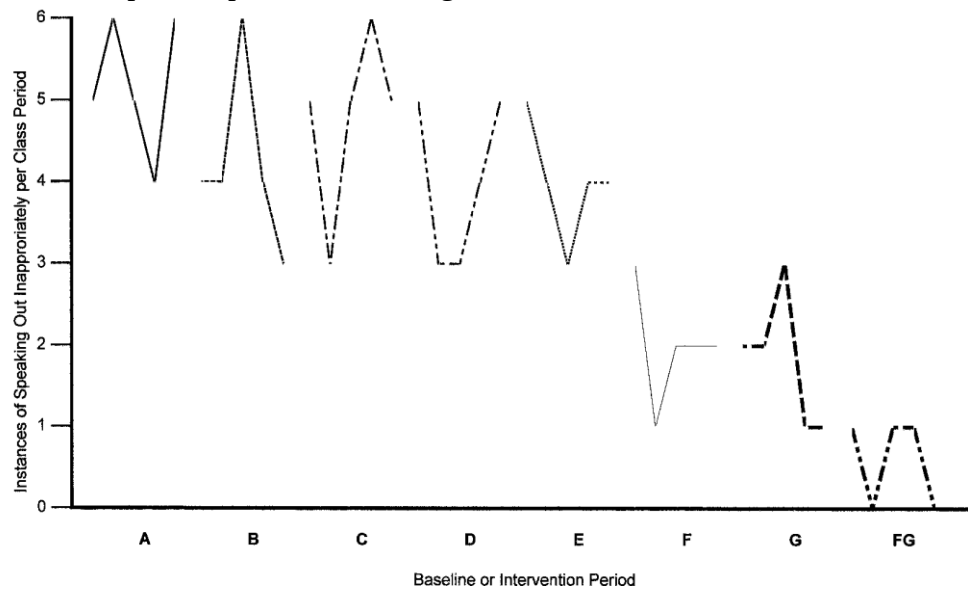
Baseline data, recorded in Figure 1 as variable A, indicates that before intervention, Owen spoke out an average of 5.2 times per class period. Following this baseline data, interventions labeled in Figure 1 as variables B through G, then a combination intervention FG, involved both negative and positive interventions.

Intervention B involved separating Owen from the rest of the class, placing his desk near the wall to minimize his distractions to/from other students. In Intervention C, Owen was sent to the office for principal-assigned after-school detention. Intervention D involved a conference with Owen and his mother. Intervention D was the last negative intervention; later interventions were positively focused.

Having noticed Owen's keen interest in basketball, Intervention E involved attending Owen's after-school basketball games to improve teacher-student rapport. In Intervention F, Owen was allowed to "earn" time in the school gym playing basketball by improving his in-class behavior. This intervention is consistent with the position of Pellegrini and Bohn (2005) regarding the role of recess/free play in students' development. After Intervention F, a new "earning" opportunity was introduced as Intervention G, which involved Owen earning time visiting with a basketball coach at school. Lastly, Intervention FG was a combination of Interventions F and G, where Owen was allowed to earn his choice of time either playing basketball or visiting with the coach.

The most effective intervention technique, reported in Figure 1 as Intervention FG, was effective in helping Owen focus his efforts in class to gain a reward within his control. Notably, the results of this intervention were greater than the sum of Intervention F and G when considered individually.

Figure 1: Participant response to differing interventions



Discussion

The results of this study support the original hypothesis in the participant evaluated. Specifically, for this participant with ADHD, positive interventions had a greater impact than negative interventions in curbing inappropriate classroom behavior. These results must be interpreted carefully, however. These results were valid for the specific participant involved, but may not be repeatable for other students with ADHD.

The results are, however, intriguing and strongly support the hypothesis that positive interventions are more effective than traditional, primarily negative, interventions in students with ADHD. Further, educators recognize the inherent value of each individual student. It seems both valid and worthwhile to tailor interventions according to the giftings or abilities of the involved student. As Beam and Keith (2011) note, “Our challenge as educators is to find the best way to instruct each student, not one way to instruct all students” (p.6).

As schools seek to serve an increasingly diverse student population while concurrently moving toward increasingly inclusive classrooms, and as diagnoses/identification of students with ADHD increase, teachers – whether in public or private school settings – must be correspondingly equipped to deal with the complexities and potential frustrations of students with conditions for which the teacher was not initially trained. Further, recognizing the position of Birchwood and Daley (2012) that ADHD is a long-term condition, educators should attempt to equip students with life-skills as well as academic skills; this includes helping students with ADHD or other conditions learn to self-manage their condition to the maximum degree possible.

Areas for follow up or additional research could involve other teachers attempting such measures with different students with ADHD, who may respond differently than Owen.

Further, this research could be repeated with conditions other than ADHD, or across a larger population of students with ADHD. Regardless, Owen benefitted from this research, and it has broad implications for both special education teachers, and for inclusive classroom teachers who have little prior exposure to strategies for dealing with students with ADHD.

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A Comparison of Two Curricular Models of Professional Development to Increase Teacher Repertoires for Instructing Students with Autism

**Lisa Dille, Ed.D.
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Abstract

This study compared the effectiveness of two curricular models of professional development to increase teacher repertoires for instructing students with autism. Specific focus was on the use of a Blended Model of professional development in comparison to a Behavioral Model of professional development in regard to increasing teacher knowledge, teacher self efficacy, teacher self report and teacher application of instructional methods, strategies, and learning supports with students with autism. The findings suggest that when the goal is to specifically increase teaching repertoires for applying instructional methods, strategies, and learning supports to students with both mild/moderate and severe autism the blending of both behavioral and socio-emotional approaches for teaching students with autism may be more effective.

A Comparison of Two Curricular Models of Professional Development to Increase Teacher Repertoires for Instructing Students with Autism

Autism is one of the fastest growing disorders and within the last ten years annual growth in the diagnosis of the disorder has increased by 17% (Autism Society of America, (ASA) (2006). According to Centers for Disease Control and Prevention (CDC) (2007) 1 in every 150 children are diagnosed with autism. The current prevailing view of autism considers it to be a spectrum disorder in which symptoms and characteristics are defined by a certain set of behaviors that present themselves in a wide variety of combinations and degrees ranging from mild to severe (ASA, 2005; APA, 1994). This heterogeneity of autism in which symptoms and characteristics in the areas of social interaction, communication, and restricted, repetitive, and stereotyped patterns of behavior manifest in a wide variety of combinations and degrees ranging from mild to severe (ASA, 2005; APA, 1994; WHO, 1992) has made it difficult to conduct research to determine appropriate educational treatment for individuals with autism. Given this heterogeneous nature of the disorder a singular method that is either a behavioral approach or socio-emotional approach may not be effective for a particular behavior, skill, or individual (ASA, 2005).

Implementation of any instructional method or intervention requires that teachers be trained in its effective application to meet the needs of students with autism. Although some teachers may receive training in a specific singular method they are often not required to have specific training in evidence-based practices specifically designed for individuals with autism (National Research Council, 2001). The teaching certifications

required for teaching students with autism vary according to each state's specific requirements. Although some states have recently added certification requirements which require specific university coursework to be completed in autism others have minimized special education requirements. In many states, special education certifications are no longer a standalone certificate and teachers need to hold a general education certificate with an endorsement appropriate to the subject or grade level to be taught. This trend has further limited the qualifications of teachers for teaching students with autism. Therefore, teachers may not have the teaching repertoire needed to address the heterogeneous learning needs of students with autism.

This study investigated the relative effectiveness of a behavioral model of professional development versus a blended model of professional development that draws upon multiple approaches for teachers of students with autism. The heterogeneity of autism, the scarcity of specialized preparation for special education teachers in teaching students with autism, and the traditional use of singular approaches provide the rationale for evaluating the relative effectiveness of a blended model relative to a singular behavioral model for teachers to increase their repertoire of skills for teaching students with autism. The purpose of this study was to compare an intervention designed to train teachers in a Blended Model with an intervention designed to train teachers in a Behavioral Model.

Specific focus was on the use of a blended model in comparison to the behavioral model in regard to increasing teacher knowledge of autism, teacher self efficacy of use of instructional methods, strategies and learning supports, teacher self report of use of instructional methods, strategies and learning supports, and teacher application of instructional methods, strategies and learning supports with hypothetical cases of students with autism. Specific research questions were: Do treatment groups differ significantly on posttest measures of (a) teacher knowledge, (b) teacher self efficacy, (c) teacher self report of use of instructional methods and strategies and learning supports, (d) teacher application of instructional methods, strategies, and supports to hypothetical cases of students with autism? Does application of instructional methods, strategies and supports by teachers differ significantly for students with mild/moderate and severe levels of autism? Are there any significant interactions among the effects of type of treatment and severity of autism in terms of teacher application of instructional methods, strategies, and supports to hypothetical cases of students with autism? Are there significant correlations between (a) teacher knowledge, (b) teacher self efficacy , (c) teacher self report of use of instructional methods and strategies and learning supports, (d) teacher application of instructional methods, strategies, and supports to hypothetical cases of students with autism?

Method

Participants

There were 48 participants in this study. All were teachers recruited from various school districts and school settings throughout New Jersey, New York and Pennsylvania. Recruitment of teachers was conducted by advertising with local school districts, educational agencies, and universities and included teachers who taught in various

settings including school-based specialized classes and programs, inclusion programs, preschool integrated school settings, center-based early intervention programs, and home-based programs. A screening questionnaire was administered to determine demographic variables for each participant.

The demographic characteristics measures were coded to form nine categorical variables. Equal numbers of subjects were randomly assigned to groups – two experimental and one control, using a JavaScript random number generator. Each group contained 16 participants. Pearson Chi-Square tests were conducted to compare groups on each of the categorical demographic variables. The results for each categorical demographic variable (level of education ($\chi^2 = 1.592$, 6 *df*, $p = .953$), years of teaching experience ($\chi^2 = .821$, 6 *df*, $p = .991$), specialized training ($\chi^2 = 7.714$, 14 *df*, $p = .904$), teacher certification ($\chi^2 = .750$, 6 *df*, $p = .991$), type of disability taught ($\chi^2 = 1.872$, 10 *df*, $p = .997$), family member with disability ($\chi^2 = .671$, 2 *df*, $p = .715$), age ($\chi^2 = 1.882$, 6 *df*, $p = .930$), gender ($\chi^2 = .000$, 2 *df*, $p = 1.000$), and geographical location of teacher ($\chi^2 = .263$, 4 *df*, $p = .992$) were not statistically significant. All participants who completed the pretesting went on to complete the training and post testing for both groups. The control group completed the pre-testing and six weeks later completed the post-test.

Materials

The Blended Model curriculum was divided into 10 lessons. Lessons 1-3 provided background information of autism and a review of the diagnosis of autism including diagnostic components, symptoms, and characteristics associated with autism. These lessons were intended as a review for teachers and/or to establish foundational knowledge and information needed to participate in the proceeding lessons of the training.

Lessons 4-9 provided teachers with knowledge and instruction in using a blended model to teach students with autism. These lessons focused on instructing teachers in a pedagogical approach that blends of key elements of behavioral approaches and socio-emotional approaches to instruct students with autism. Specific aspects covered are instructing teachers in use of positive and differential reinforcement (Cooper, Heron, & Heward, 1987; Snell, 1983), selecting reinforcement to meet individual student needs (Cooper, Heron, & Heward, 1987; Snell, 1983; Deci & Ryan, 2002), use of prompting procedures (Cooper, Heron, & Heward, 1987; Snell & Brown, 2006; Schopler, et al., 1995), calibrating teaching language and interactive teaching style (Greenspan & Weider, 1997; Prizant et al. 2002; Prizant et al. 2006), teaching students self-regulation (Wehmeyer, Agran, Hughes, 1998; Agran, 1997) and joint attention skills (Mundy et al. 1994; Mundy et al. 1996; Hobson, 2005) and use of the three-term contingency and a trial format of instruction (Skinner, 1953; Baer, Wolf & Risley, 1968; Hart & Risley, 1968, 1974; Lovaas, Koegel, Simmons, & Long, 1973; Koegel & Schreibman, 1977; Lovaas, 1987; Koegel & Koegel, 2006), to facilitate student engagement and learning. Lesson 10 was an overall summary of the curriculum.

The Behavioral Model curriculum was also divided into 10 lessons. Lessons 1-3 provided background information of the current crisis of autism and a review of the diagnosis of autism including diagnostic components, symptoms, and characteristics associated with autism. These lessons were intended as a review for teachers and/or to establish

foundational knowledge and information needed to participate in the proceeding lessons of the training. Lessons 4-10 provided teachers with knowledge and instruction in using a behavioral model to teach students with autism. Lessons focused on instructing teachers in selecting and defining target behaviors, data collection procedures (Cooper, Heron, & Heward, 1987), use of the three-term contingency, a trial format of instruction (Skinner, 1953; Baer, Wolf & Risley, 1968; Lovaas, Koegel, Simmons, & Long, 1973; Koegel & Schreibman, 1977; Lovaas, 1987; Koegel & Koegel, 2006), prompting, reinforcement and schedules of differential reinforcement practices (Snell, 1983; Cooper, Heron, & Heward, 1987). Lesson 10 was a summary of the curriculum.

Assessment instruments (*Teacher Knowledge of Autism and the Educational Treatment of Autism Questionnaire*, *Teacher Self-Efficacy of Use of Instructional Methods, Strategies, and Supports for Students with Autism*, *Teacher Self Report of Use of Instructional Methods, Strategies, and Supports for Students with Autism* and *Performance Assessment of Application of Use of Instructional Methods, Strategies, and Supports*) were initially developed by the researcher based on literature about each treatment approach. To test for face validity all four assessments were presented to thirteen reviewers including teachers, clinicians, and experts experienced in both behavioral and socio-emotional approaches of instructing students with autism. Reviewers shared and aided in the revision of each item of all four assessments. Revisions made each item and assessment more specific to each dependent variable of the study. To determine validity and reliability for testing measures a split-half reliability and coefficient alpha was computed.

To measure the dependent variable of teacher knowledge the *Teacher Knowledge of Autism and the Educational Treatment of Autism Questionnaire* pretest was administered. This assessment consisted of 30 multiple choice questions that measured teacher knowledge of the diagnosis and classification of autism, symptoms, and characteristics associated with the disorder, and educational approaches used for students with autism. Each question was answered with either a correct response or an incorrect response and a dichotomous scale (1 = correct response and 0 = incorrect response) was used to score responses. The maximum score for this assessment was 30 points. In summary for Teacher Knowledge the split-half reliability was .77, and coefficient alpha was .846.

To measure the dependent variable of teacher use of instructional methods, strategies, and supports the *Teacher Self-Efficacy of Use of Instructional Methods, Strategies and Supports for Students with Autism* was administered. This instrument was a 30-item checklist in which teachers rated their efficacy of their knowledge and instructional skills in teaching students with autism using a Likert scale. Scoring was as follows: 3=I feel I have the knowledge and skills needed, 2=I feel I have some knowledge and skills needed in this area, 1=I feel knowledgeable in this area but I do not feel I have the skills needed, 0=I do not feel knowledgeable or skilled in this. The maximum score for this assessment was 90 points. In summary on use of instructional methods and strategies and learning supports as measured by the self-efficacy instrument, the split-half reliability was .94, and coefficient alpha was .97.

To measure the dependent variable of teacher use of instructional methods, strategies, and supports the *Teacher Self-Report of Use of Instructional Methods, Strategies, and Supports for Students with Autism* was administered. This instrument was a 30 item checklist in which teachers reported on the frequency in which they utilized instructional methods, strategies, and learning supports with their students with autism using a Likert scale. Scoring was as follows: 4=Always, 3=Most of the time, 2=Sometimes, 1=Rarely, 0=Never. The maximum score for this assessment was 120 points. In summary on use of instructional methods and strategies and learning supports as measured by the self-report instrument, the split-half reliability was .94, and coefficient alpha was .97.

To measure the additional independent variable of level of autism as it relates to teacher application of instructional methods, strategies, and supports the *Performance Assessment of Application of Use of Instructional Methods, Strategies, and Supports* was administered. This instrument measured teacher application of instructional methods, strategies, and supports to teach students identified as having autism in the mild to moderate range versus the moderate to severe range. This instrument consisted of four case studies in which two depict hypothetical students with mild to moderate autism and two case studies depict students in the moderate to severe range. Teachers were presented with a consistent set of six questions across all four case studies which were designed to measure their capacity to apply instructional methods, strategies, and supports with students with autism. Responses were categorized as follows: 0= Response indicates insufficient understanding, no appropriate answers, and/or major errors. 1= Response indicates limited understanding, is incomplete, and/or contains major errors. 2=Response indicates substantial and appropriate understanding but may have minor errors. 3= Response is correct and the underlying reasoning process is appropriate and clearly communicated. Response may contain minor errors if any. The four case studies and their corresponding questions were grouped into two categories: mild and severe. Each category received a categorical score. The maximum score for each category was 36 points. Both scores were totaled yielding one composite score for a grand total. The maximum score for this assessment was 72 points. In summary for Supports for Students with Autism and Performance Assessment of Application of Use of Instructional Methods, Strategies, and Supports the split-half reliability was .88, and the coefficient alpha was .95.

Given that the teacher application of instructional methods, strategies and learning supports to hypothetical cases was scored by two raters an inter-rater reliability score was calculated to assess the level of consistency between the two raters. The inter-rater reliability was calculated by using the Kappa statistic to determine consistency among raters. Each rater rated 24 items for the pre-test and 24 items for the post test. The inter-rater reliability for the pre-test was found to be Kappa=.90 ($p<0.001$), 95% CI (0.504, 0.848), while the inter-rater reliability for the post-test was found to be Kappa=.91 ($p<0.001$), 95% CI (0.504, 0.848).

Design and Procedure

The independent variable of primary interest in this study was type of training. An additional independent variable, which relates specifically to the dependent variable listed below of application of instructional methods, strategies and learning supports to hypothetical cases, is level of autism. There were three groups in total with two being experimental groups and one a Control group. One experimental group received training in the Blended Model and the other received training in the Behavioral Model of instruction. The Control group did not participate in training.

There are two levels of autism: mild/moderate and severe. The dependent variables of primary interest were (a) teacher knowledge, (b) teacher self-efficacy, (c) teacher self report of use of instructional methods, strategies, and supports, and (c) teacher application of instructional methods, strategies, and learning supports to hypothetical cases.

A one-way analysis of variance design comparing the three treatment groups was used for the dependent variables of teacher knowledge, teacher self-efficacy, and use of instructional methods, strategies, and learning supports. In addition a 3X2 factorial analysis of variance with repeated measures on the second factor was used to measure differences on the dependent variable of application of instructional methods, strategies, and supports to hypothetical cases by teachers in regards to mild/moderate and severe levels of autism.

Pretesting for the Blended group was completed during a group session in a classroom setting. The Behavioral group completed pretesting during a separate group session in a classroom setting. The Control group completed pretesting in a group session separate from both the Blended group and the Behavioral group in a classroom setting. Once the pretesting phase of the study was completed participants in each of the experimental groups (Blended group and Behavioral group) participated in training sessions.

Training sessions consisted of ten group instructional sessions, 10 on-line discussions and 10 follow-up sessions on Blackboard. All sessions were two and half hours long, and were taught by the investigator in a classroom setting at a local university. During each in-person training session participants listened to a lecture, received and viewed a PowerPoint presentation, and participated in a discussion on the topic. As follow-up to each in-person training session participants participated in an on-going on-line discussion via Blackboard Discussion Board. Each participant also was able to access PowerPoints and references via the Assignment section of BlackBoard.

All participants in the Blended group and the Behavioral group completed post testing upon completion of the training sessions. Post testing for both the Blended group and the Behavioral group was administered during separate final sessions. The Control group completed post testing in a single session separate from both the Blended group and the Behavioral group.

Results

This study compared three treatment groups on the dependent variables of (a) teacher knowledge, (b) teacher self efficacy, (c) teacher self report of use of instructional methods, strategies and learning supports, (d) teacher application of instructional methods, strategies and learning supports to hypothetical cases in regards to mild and severe levels of autism. The results are presented in the following sections: preliminary analyses, followed by the main analyses, which includes posttest data addressing each research question. Results pertaining to each research question are reported using the following statistical procedures: one-way analysis of variance, analysis of covariance, a general linear model with repeated measures, and Pearson product-moment correlations.

Preliminary Analyses

To begin the analysis of the pretest data, descriptive statistics were run to obtain the means and standard deviations (SD) for each measure. Results are displayed in Tables 1 (see Table 1 & Figure 1).

One-way ANOVAs were used to determine if significant initial differences existed between the three groups (Blended, Behavioral, and control) on pretest measures of teacher knowledge, teacher self-efficacy, and teacher self report of use of instructional methods, strategies and learning supports.

A General Linear Model 3(group) x 2(severity) factorial ANOVA with repeated measures on the second factor was used to determine if there were significant differences among the three treatment groups and whether the teachers' application of instructional methods, strategies, and supports to hypothetical cases differed significantly for students with mild/moderate and severe levels of autism. The one-way ANOVA on teacher knowledge indicated that the three groups differed significantly on the teacher knowledge pretest ($F(2, 45) = 6.056, p < .05$). Using the Bonferroni method for Post Hoc Tests, it was determined that the mean teacher knowledge score for the Control group ($M = 18.678$) was significantly ($p < 0.05$) higher than the mean for the Blended group ($M = 13.187$) and Behavioral group ($M = 12.187$). The Blended group ($M = 13.187$) and the Behavioral group ($M = 12.187$) did not differ. On the teacher self-efficacy pretest, the one-way ANOVA indicated that there was no statistically significant difference among the three groups, however the Control Group had the highest mean ($M = 45.875$). The Blended Group had the second highest mean ($M = 37.562$), and the Behavioral Group had the lowest mean ($M = 32.437$) (see Table 1).

On teacher self-report of use of instructional methods, strategies and learning supports as measured by the self-report pretest the one-way ANOVA indicated a statistically significant difference amongst the three groups ($F(2, 45) = 9.157, p < .01$). Using the Bonferroni method for Post Hoc Tests, it was determined that the mean self-report of use score for the Control group ($M = 48.937$) was significantly ($p < .05$) higher than the mean for the Blended group ($M = 34.687$). However, the mean difference between the Behavioral group ($M = 53.875$) and the Control group ($M = 48.937$) was not statistically

significant. On the other hand, the mean score for the Behavioral group ($M = 53.875$) was significantly ($p < .05$) higher than the mean for the Blended group ($M = 34.687$). The results of the between groups and within groups ANOVA pretest for teacher knowledge, teacher self-efficacy, and teacher self-report are displayed in Table 2 (see Table 2)

A General Linear Model 3(group) $\times$ 2(severity) factorial ANOVA with repeated measures on the second factor was used to determine if there were significant differences among the three groups and whether the teachers' application of instructional methods, strategies, and learning supports to hypothetical cases differed significantly for students with mild/moderate and severe levels of autism on the pre-test. The between-subjects effect for *groups* ($F(2, 45) = .590, p > .05$) was not statistically significant. The within-subjects effect for severity level ($F(1, 45) = 13.429, p < .05$) was statistically significant. The *Severity*Group* interaction ($F(2, 45) = 1.980, p > .05$) was not statistically significant. Results are displayed in Table 3 (see Table 3).

For the pretest and post measures of (a) teacher knowledge, (b) teacher self efficacy, (c) teacher self report of use of instructional methods, strategies and learning supports, and (d) teacher application of instructional methods, strategies and learning supports to hypothetical cases, Pearson r correlations were run to determine if there were any significant relationships between the pre and post-test scores on each dependent variable. Although the pattern of pre- to post- correlations for the total sample generally supports the assumption of linearity of regression, there was not sufficient support for the assumption of an ANCOVA analysis. Therefore, a decision was made to use an ANOVA for the main analyses. The data displayed in Table 4 shows the correlation coefficients between the variables for the pre-test measures (see Table 4).

Main Analysis

To analysis for the posttest data for the question: Do treatment groups (Blended Model training vs. Behavioral Model vs. Control) differ significantly on posttest measures of: (a) teacher knowledge, (b) teacher self efficacy , (c) teacher self report of use of instructional methods and strategies and learning supports, (d) application of instructional methods, strategies, and learning supports to hypothetical cases of students with autism?; descriptive statistics were run to obtain the means and standard deviations for each measure (see Table 1).

ANOVAs were used to determine if significant increases occurred on post-test measures of teacher knowledge, teacher self-efficacy, and teacher self report of use of instructional methods and strategies and learning supports, after the Blended group received the Blended Model training, and the Behavioral Group received the Behavioral Model training. A General Linear Model 3(group) $\times$ 2(severity) factorial ANOVA with repeated measures on the second factor was used to determine if there were significant increases among the two treatment groups and whether the teachers' application of instructional methods, strategies, and supports to hypothetical cases differed significantly for students with mild/moderate, and severe levels of autism.

Teacher Knowledge.

The ANOVA on teacher knowledge indicated that the mean teacher knowledge score for the Blended Group increased from a pre-test mean ($M = 13.187$) to a post-test mean ($M = 22.812$). The Blended Group mean increase was 9.625 points, which was the highest mean increase of the three groups. The Behavioral Group had the second highest mean increase. The Behavioral Group increased from a pre-test mean ($M = 12.187$) to a post-test mean ($M = 20.937$). The Behavioral Group mean increase was 8.75 points. The Control Group had the lowest mean increase. The Control Group increased from a pre-test mean ($M = 18.687$) to a post-test mean ($M = 19.062$). The Control Group mean increase was .375 points (see Table 1).

Self-Efficacy.

On the teacher self-efficacy post-test, the ANOVA indicated that the mean score for the Blended Group increased from a pre-test mean ($M = 37.562$) to a post-test mean ($M = 66.312$). The Blended Group mean increase was 28.75 points, which was the highest mean increase of the three groups. The Behavioral Group had the second highest mean increase. The Behavioral Group increased from a pre-test mean ($M = 32.437$) to a post-test mean ($M = 56.687$). The Behavioral Group mean increase was 24.25 points. The Control Group had a negative mean increase. The Control Group decreased from a pre-test mean ($M = 45.875$) to a post-test mean ($M = 45.187$). The Control Group mean decrease was -.688 points (see Table 1).

Self-Report of Use of Instructional Methods, Strategies, and Learning Supports.

On teacher self-report of use of instructional methods and strategies and learning supports as measured by the self-report post-test the ANOVA indicated that the mean score for the Blended Group increased from a pre-test mean ($M = 34.687$) to a post-test mean ($M = 84.437$). The Blended Group mean increase was 49.75 points, which was the highest mean increase of the three groups. The Behavioral Group had the second highest mean increase. The Behavioral Group increased from a pre-test mean ($M = 53.875$) to a post-test mean ($M = 85.062$). The Behavioral Group mean increase was 31.187 points. The Control Group had a negative mean increase. The Control Group decreased from a pre-test mean ($M = 48.937$) to a post-test mean ($M = 44.937$). The Control Group mean decrease was -4 points (see Table 1).

A General Linear Model 3(group) x 2(severity) factorial ANOVA with repeated measures on the second factor was used to determine if there were significant differences among the three treatment groups and whether the teachers' application of instructional methods, strategies, and learning supports to hypothetical cases differed significantly for students with mild/moderate and severe levels of autism on the post-test. The between-subjects effect for *groups* ($F(2, 43) = 35.740, p < .05$) was statistically significant.

The mean for teachers' application of instructional methods, strategies, and learning supports to hypothetical cases differed significantly for students with mild/moderate

levels of autism indicated that the mean score for the Blended Group increased from a pre-test mean ($M = 8.062$) to a post-test mean ($M = 25.5$). The Blended Group mean increase was 17.438 points, which was the highest mean increase of the three groups. The Behavioral Group had the second highest mean increase. The Behavioral Group increased from a pre-test mean ($M = 9.937$) to a post-test mean ($M = 15.937$). The Behavioral Group mean increase was 6 points. The Control Group had no mean increase. The Control Group had a pre-test mean ($M = 11.375$) and a post-test mean ($M = 11.375$) (see Table 1).

The mean for teachers' application of instructional methods, strategies, and learning supports to hypothetical cases differed significantly for students with severe levels of autism indicated that the mean score for the Blended Group increased from a pre-test mean ($M = 7.250$) to a post-test mean ($M = 25.5$). The Blended Group mean increase was 18.250 points, which was the highest mean increase of the three groups. The Behavioral Group had the second highest mean increase. The Behavioral Group increased from a pre-test mean ($M = 6.5$) to a post-test mean ($M = 15.5$). The Behavioral Group mean increase was 9 points. The Control Group had no mean increase. The Control Group had a pre-test mean ($M = 9.625$) and a post-test mean ($M = 9.625$) (see Table 1).

In regard to the second question of: Does application of instructional methods, strategies and supports to hypothetical cases by teachers differ significantly for hypothetical cases of students with mild/moderate and severe levels of autism? A General Linear Model 3(group) x 2(severity) factorial ANOVA with repeated measures on the second factor was used to determine whether teachers' application of instructional methods, strategies, and supports to hypothetical cases differed significantly for students with mild and severe levels of autism (see Table 5). The within-subjects effect for *severity* ($F(1, 43) = .255$, $p > .05$) was not statistically significant.

In regard to the third question: Are there any significant interactions among the effects of type of treatment and level of autism in terms of application of instructional methods, strategies, and learning supports to hypothetical cases of students with autism? A General Linear Model 3(group) x 2(severity) factorial ANOVA with repeated measures on the second factor was used to determine whether there was a significant group*severity interaction for teachers' application of instructional methods, strategies, and supports to hypothetical cases (see Table 5). The *Severity*Group* interaction ($F(2, 43) = .575$, $p > .05$) was not statistically significant. Results are displayed in Table 5 (see Table 5).

In regard to the fourth question: Are there significant correlations between (a) teacher knowledge, (b) teacher self efficacy, (c) teacher self report of use of instructional methods and strategies and learning supports, (d) application of instructional methods, strategies, and supports to hypothetical cases of students with autism? A Pearson r was used to calculate a correlation matrix between teacher knowledge, teacher self efficacy, teacher self report of use of instructional methods, strategies and supports, and teacher application of instructional methods and strategies and learning supports to hypothetical cases to determine if there were any significant relationships between the independent

and dependent variables. The correlation coefficient between the variables post-knowledge and post-efficacy ($r = .518$) suggest a moderate positive relationship. The correlation coefficient of between the variables post-knowledge and post-performance ($r = .428$) suggest a low positive relationship. Similar, the correlation coefficient between the variables post-knowledge and post-report ($r = .390$) also suggesting a low positive relationship. The correlation coefficient between the variables post-efficacy and post-performance ($r = .422$) suggest a low positive relationship as well. The correlation coefficient between the variables two variables post-performance and post-report ($r = .543$) suggest a moderate positive relationship. On the other hand, when examining the correlation coefficients of the variables post-efficacy and post-report ($r = .690$) a high positive relationship is yielded.

These correlation coefficients reveal that there were statistically significant relationships between the dependent variables. Although some of the magnitudes of the correlation coefficients display low positive relationships, most of the relationships were statistically significant, suggesting that there is a low probability that these correlations occurred simply by chance. Results are summarized in Table 6 (see Table 6).

The results of the main analyses indicated that the mean scores of both the Blended group and the Behavioral group increased significantly after the two experimental groups received the Blended Model training and the Behavioral Model of instructional training, were as the Control group had a low or negative mean increase on all four post-test measures: teacher knowledge, teacher self-efficacy, teacher self-report of use, and teacher of application of instructional methods, strategies, and supports to hypothetical cases. Although there were not significant differences between the mean increases of the Blended group and the Behavioral groups' means, on post teacher knowledge, post self-efficacy, or post self-report of use, means for the Blended group were generally higher than those for the Behavioral group. On post-test application of instructional methods, strategies, and supports to hypothetical cases, there was a significant difference between the two groups' means, with the post-test means for the Blended group being higher than the post-test mean for the Behavioral group. There were no significant post-test differences for the severity levels. The correlations among the measures were generally moderate and positive.

Discussion

The results of this study supported the hypothesis that teachers who received training in a Blended Model for teaching students with autism would increase their teaching repertoires. However, teachers who received the Behavioral Model for teaching students with autism also increased their teaching repertoires. Although the increase in teaching repertoires for the participants in the Behavioral group was limited to certain areas, there was still evidence supporting an overall increase in their teaching repertoires.

Both the Blended group and the Behavioral group had mean increases that were significantly higher than the mean increases for the Control group when pre-test and post-test mean increases are compared using the measures of teacher knowledge, teacher self

efficacy, and teacher self report of use of instructional methods, strategies and learning supports. For the post test measures of teacher knowledge, teacher self efficacy, and teacher self report, there were not significant differences between the mean increases for the Blended group and the Behavioral groups' means scores, but the mean increases for the Blended group were generally higher than those for the Behavioral group.

These findings are interesting in that there were not significant differences across experimental groups in regard to training in a singular behavioral approach and a blended approach of teaching which blended singular approaches together into one pedagogical approach to teaching students with autism. The behavioral approaches that were blended were singular in that they are devoted to the implementation of specific teaching strategies and procedures within the educational setting. Both experimental groups obtained increases in means relative to the control group in the areas of teacher knowledge of the diagnosis and classification of autism, symptoms, and characteristics associated with the disorder, and educational approaches used for students with autism, teaching self efficacy of their knowledge and instructional skills in teaching students with autism, and the frequency of use of instructional methods, strategies, and learning supports with their students with autism. It is suggested that both types of training enhanced participant's exposure and awareness of autism and educating students with autism which possibly led to the participants from both groups being highly motivated with stronger self efficacy beliefs regarding their knowledge and instructional skills for teaching students with autism and a greater tendency to use these instructional methods, strategies, and learning supports with their students with autism.

In regard to correlations between teacher knowledge, teacher self efficacy of their knowledge and instructional skills for teaching students with autism, teacher self report of use of instructional methods, strategies and learning supports, application of instructional methods, strategies, and learning supports to hypothetical cases, there were significant relationships. The strongest correlation was the relationship between post teacher self efficacy and post-teacher self report of use of instructional methods, strategies and learning supports. Participants that rated their efficacy of their knowledge and instructional skills in teaching students with autism high also reported a high frequency of use of instructional methods, strategies, and learning supports with students with autism. This finding suggests that teachers who feel and believe they have the knowledge and instructional skills in teaching students with autism are more likely to report that they utilize instructional methods, strategies, and learning supports with their students with autism more frequently. This is supported by the additional correlation between post teacher knowledge and post-teacher self-efficacy which was also positive.

There was also a moderate positive correlation between post teacher self report of use and post-application, suggesting that increased use of instructional methods, strategies, and learning supports with students with autism may be directly related to the application of instructional methods, strategies, and learning supports to teach students with autism. Also supporting this suggestion were the low positive correlations between post-teacher knowledge and post-application and between post teacher self efficacy and post-application. An additional correlation, although also low, was post teacher knowledge

and post teacher self-report of use which also suggests that when teachers have the knowledge of the diagnosis and classification of autism, symptoms, and characteristics associated with the disorder and educational approaches that can be used for students with autism the frequency of use of instructional methods, strategies, and learning supports with students with autism increases.

In regard to teacher application of instructional methods, strategies and supports to students with mild/moderate versus severe levels of autism there were no significant post-test differences or interactions between the two severity levels of autism. The significant pre-test difference between the two severity levels disappeared on the post-test, largely because of the strong performance of the teachers in the two intervention groups on items pertaining to both levels of severity. However, there was a significant difference between the two treatment groups on the overall mean increase in the application measure. The mean increase of the Blended group was 18.250 points and the mean increase of the Behavioral group was 9 points suggesting that the participants in these two groups applied instructional methods, strategies, and supports to students with autism with more confidence. The larger mean increase of the Blended Group also suggest that the participants in the Blended Model of instructional training did significantly better than the participants in the Behavioral Model of instructional training when it came to applying instructional methods, strategies, and learning supports to teach students with autism. This finding suggests that singular behavioral approaches that are devoted to, the implementation of specific teaching strategies and procedures within the educational setting may not provide teachers with the skills needed to apply instructional methods, strategies, and supports to a range of situations in the instructional setting.

It is suggested that socio-emotional components when blended with behavioral approaches provide teachers with a more comprehensive repertoire of instructional methods, strategies, and learning supports to apply in the instructional setting with students with autism. This may be because the blending of both types of approaches provides teachers with an approach that is a broader model they can utilize to meet the heterogeneous learning needs of students with autism.

This study examined several different variables that have not been previously studied in teachers of students with autism. Assessments were developed to measure the different variables of teacher knowledge of autism, teacher self efficacy of use of instructional methods, strategies and supports, teacher self report of use of instructional methods, strategies and supports, and teacher application of instructional methods and strategies and learning supports with students with mild/moderate versus severe autism. These assessments were developed and identified by consultation with experts in both behavioral approaches and socio-emotional approaches; however this may have been a limitation. In the future a factor analysis for each assessment is warranted to test how the items can be clustered together. Additionally more extensive item analysis should be performed and the construct examined more carefully. It is also possible that the number and content of the items representing each approach is insufficient. Future research should address these validity issues.

Continued research in this area should focus on conducting future studies with a larger sample, more extensive training for participants, inclusion of a component which links findings to student achievement, inclusion of a qualitative component, and inclusion of participants from various regions and internationally. In regard to replicating the study with a larger sample this could allow for the more sensitive detection of other possible differences in the impact of the two training approaches. In regard to increasing the amount of training, more extensive training would provide further information which may produce increased teaching repertoires.

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About the Author

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Table 1 Means and Standard Deviations (SD) for Pre & Post Test

Pre & Post Test	Control		Blended		Behavioral		Total	
	M	SD	M	SD	M	SD	M	SD
<i>Pre-test Teacher Knowledge</i>	18.687	6.674	13.187	5.166	12.187	4.996	14.687	6.271
<i>Post-test Teacher Knowledge</i>	19.062	6.115	22.812	2.455	20.937	1.611	20.937	4.132
<i>Pre-test Self Efficacy</i>	45.875	28.415	37.562	23.383	32.437	14.823	38.625	23.100
<i>Post-test Self Efficacy</i>	45.187	28.218	66.312	16.660	56.687	10.600	56.062	21.324
<i>Pre-test Self Report of Use</i>	48.937	31.642	34.687	8.514	53.875	34.312	45.833	28.035
<i>Post-test Self Report of Use</i>	44.937	35.630	84.437	11.769	85.062	11.769	71.479	30.414
<i>Pre-test Teacher Application Mild/Moderate Autism</i>	11.375	8.716	8.062	5.720	9.937	10.102	9.791	8.546
<i>Post-test Teacher Application Mild/Moderate Autism</i>	11.375	8.853	25.500	5.977	15.937	5.182	17.604	8.965
<i>Pre-test Teacher Applications Severe Autism</i>	9.625	8.546	7.250	5.686	6.500	8.602	7.791	7.685
<i>Post-test Teacher Applications Severe Autism</i>	9.625	8.507	25.500	6.250	15.500	4.774	16.708	9.155

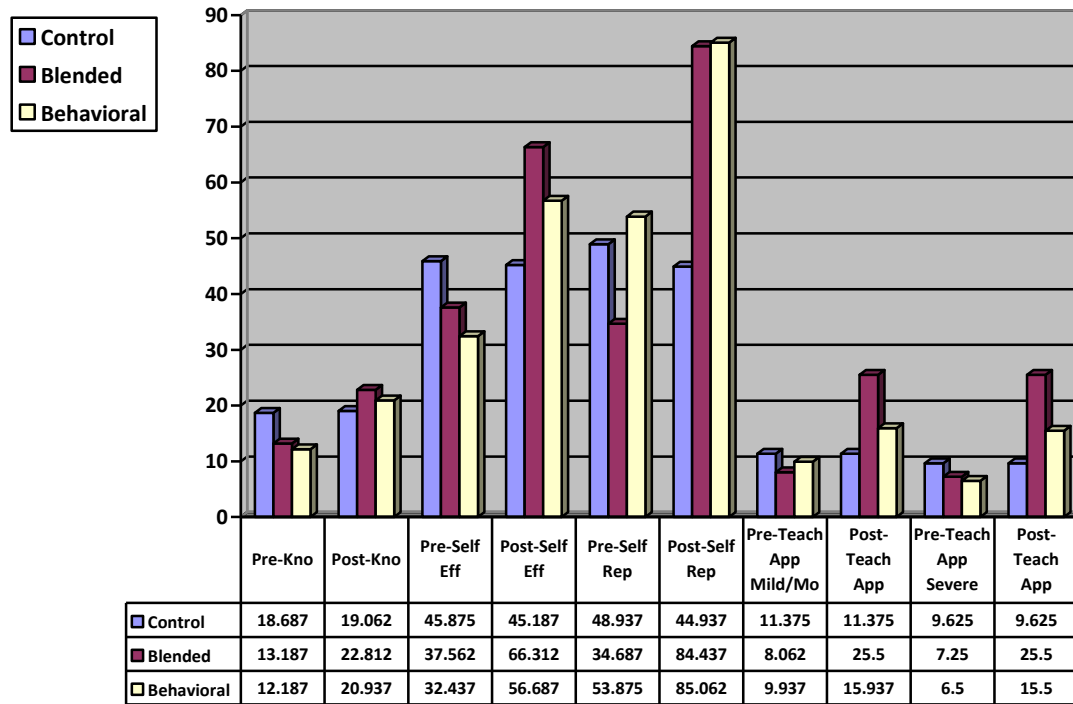


Figure 1 Pre & Post Test Mean Scores

Table 2 *Analysis of Variance for Pre & Post Test*

		Sum of Squares	Df	Mean Square	F	Sig.
Pre-test Teacher Knowledge	Between Groups	392.000	2	196.00	6.056	.005
	Within Groups	1456.312	45	32.362		
	Total	1848.312	47			
Post-test Teacher Knowledge	Between Groups	112.500	2	56.250	3.667	.033
	Within Groups	690.313	45	15.340		
	Total	802.813	47			
Pre-test Self- Efficacy	Between Groups	1471.625	2	735.812	1.402	.257
	Within Groups	23609.625	45	524.658		
	Total	25081.250	47			
Post-test Self- Efficacy	Between Groups	23.500	34	.691	1.057	.480
	Within Groups	8.500	13	.654		
	Total	32.000	47			
Pre-test Self- Report	Between Groups	14869.042	2	7434.521	9.157	.000
	Within Groups	36535.938	45	811.910		
	Total	52404.979	47			
Post-test Self- Report	Between Groups	16910.167	2	8455.083	14.322	.000
	Within Groups	26565.813	45	590.351		
	Total	43475.979	47			

Table 3 *General Linear Model 3 X 2 ANOVA for Pretest Application Scores*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Group	145.146	2	72.573	.590	.558
Error (between)	5530.688	45	122.904		
Severity	96.000	1	96.000	13.429	.001
Severity*Group	28.313	2	14.156	1.980	.150
Error (within)	321.688	45	7.149		

Table 4 *Correlations of Pre and Posttest Variables*

	Control n=16	Blended n=16	Behavioral n=16	Total Sample n=48
Pre/Post Knowledge	.850**	.324	.548*	.327*
Pre/Post Efficacy	.987**	.765**	.632**	.705**
Pre/Post Use	.983**	-.032	.942**	.597**
Pre/Post Applications	.989**	-.132	.576*	.327*

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

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

Table 5
General Linear Model 3 X 2 ANOVA for Post Application Scores

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Group	3983.069	2	1991.535	35.740	.000
Error (between)	2396.054	43	55.722		
Severity	1.555	1	1.555	.255	.616
Severity*Group	7.016	2	3.508	.575	.567
Error(within)	262.397	43	6.102		

Table 6 Correlation Matrix of Independent and Dependent Variables

Scale	Post-Teacher Knowledge	Post-Self Efficacy	Post-Performance	Post-Self Report
Post-Knowledge	1			
Post-Efficacy	.518**	1		
Post-Performance	.428**	.422**	1	
Post-Report	.390**	.690**	.543**	1

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

Information Needs and Information Seeking Behavior of Teachers of Special Education in Shillong, India

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Abstract

Teaching itself, though noble, is a challenging profession. Such a profession calls upon not only the intellectual capacities of the teacher, but the physical and emotional as well. In short, it is a unique profession. Teaching differently-abled students (special education), is even more challenging. By virtue of their teaching a special group of people, the special education teachers' information needs and information seeking behavior are quite different from those of other teachers. This study tried to explore these unique needs of Special Education teachers in three Special Education schools in Shillong, Meghalaya and found that there do exist information needs and information seeking behaviors that distinguish Special Education teachers from other types of teachers, such as, for example, the need for information on the medical conditions of students and the teachers' seeking information from medical professionals. Special education teachers in Shillong are not very different from those in other parts of the world with regard to their qualifications, work culture, teaching methods and information issues.

Information Needs and Information Seeking Behavior of Teachers of Special Education in Shillong, India

Teachers have a strong influence on children and are important in shaping their lives. Hence, ensuring that all students have a highly qualified teacher in every classroom is of vital importance. A special education teacher is an instructor who is specially trained to work with students who experience a wide range of disabilities as specified in the Individuals with Disabilities Education Act (IDEA) (2004). Such teachers need a good knowledge of special education; they need to have good interaction skills in order to engage in consultation. Special Education is that component of education which employs special instructional methodology (Remedial Instruction), instructional materials, learning-teaching aids and equipment to meet educational needs of children with specific learning disabilities.

The term Special education has been used to denote those aspects of education which are applied to handicapped and gifted children but not usually used with the majority of average children. (Kirk, 1962) Special education is also defined as “the profession concerned with the arrangement of education variable leading to the prevention, reduction or elimination of those conditions that produce significant defects in the academic, communicative, locomotor or adjustive functioning of children” (Smith and Neisworth, 1975). Special education teachers work with children who have a variety of disabilities. They are involved in the student’s behavioral, social, and academic development, helping them develop emotionally and interact effectively in social situations. A special education teacher usually forms part of a team of people who deliver special education services. Special education teachers use various techniques to promote learning depending on the students. Special education teachers spend their days providing assistance to students who most their help. These teachers not only educate students; they make education possible for children and youth who may not otherwise be able to learn.

Special educators mostly work in public and private educational institutions. A few work for individual and social assistance agencies or residential facilities, or in homebound or hospital environment.

According to James (2000), special education is provided to students with-

- Visual impairments
- Hearing impairments
- Mental retardation
- Learning disabilities
- Emotional disturbance
- Speech /Language impairments
- Multiple disabilities
- Orthopedic impairments
- Autism

The field is challenging but rewarding, and talented special education teachers are always in demand. Individuals who dedicate themselves to this career will enjoy job security in most any state. (etoolseducation.com)

How is special education different from general education?

- Special education is the education of student using different teaching methods, techniques and equipments to promote learning.
- General education is the standard curriculum presented with standard teaching methods without additional support.

Special and general education remain two essentially separate systems. A variety of forces have kept them apart — from separate legal mandates and funding streams to the historical tendency for schools to sort students by ability.(R&D Alert, 2010)

Special education is distinguished from usual educational provisions in terms of specific objectives, assessment, specialized content, instructional materials and methods of instruction and evaluation procedures (Venkataiah, 1993).

Related Studies

In Malouf's (1989) study, forty special education teachers rated usefulness and preferences concerning software evaluation information. Highest usefulness ratings were given to information on hardware compatibility, appropriateness for students, and software operation and use. The most preferred information source was software tryout, followed by software documentation/manuals and written descriptions from reviews. Special education teachers must possess a unique set of skills and knowledge to teach students with disabilities successfully (Plash, 1997).

According to Whitaker (2003) special education teachers needed the most assistance in (a) learning special education policies, procedures, and paperwork, (b) receiving emotional support, (c) learning system information related to the school, and (d) learning about available materials and resources. To a lesser extent they needed assistance with curriculum and instruction, discipline, management issues, and interactions with others. Beginning special education teachers received significantly less assistance than they needed in all areas, but particularly in learning special education policies, procedures, and paperwork; materials and resources; and curriculum and instruction. They reported receiving the most assistance from other special education teachers, than from their assigned mentor and from the building administrator, and lastly from general education teachers and special education administrators.

IDEA 2004 directly defines the "highly qualified teacher" as one who is "appropriately and adequately prepared and trained" and has "the content knowledge and skills to serve children with disabilities." A special educator may take on roles such as developer and coordinator of student programs, designer and provider of instruction to students, and director of the work of paraprofessionals, (York-Barr, Sommerness, Duke and Ghre, 2005).

Oliver and Williams (2005) conducted a research study on the special nature of special education and the experiences of teachers with regard to the challenges they faced in teaching the mentally handicapped child. The participating teachers stated that special demands were made on them by the specific nature of special education. The problems with regard to the teaching of children with disabilities are the different levels of potential and ability of the learners, communication problems (language difference) and disciplinary problems that they faced in the class. Special education teachers involve in additional work and responsibility.

Marjatta and Minna (2009) studied the work of special education teachers where they revealed that the work of the special education teachers consists of three elements-teaching, consulting and background. Special education teachers have to be experts twice over. A special education teacher has to hold discussions with parents and with other teachers before starting to teach the children.

Ference, (2010) found that the role and responsibilities of special educators in Pennsylvania are unique and that these roles differ highly depending on their employment position. Many special educators see their roles primarily as professional ones and they refer to themselves as teachers, consultants, administrators and parents.

Communication and cooperation are essential skills because special education teachers spend a great deal of time interacting with students, parents, and school faculty and administrators (U.S. Bureau of Labor, 2010-11).

Objectives of the Present Study

As more and more institutions for the differently-abled are being set up in the North-Eastern Indian city of Shillong, the researchers felt it was the right time to explore the issues that Special Education teachers have to grapple with. The approach of this study was finding the information needs and information seeking behavior of such teachers in order to appreciate their situation and perhaps help better the lot of both the teachers and their special students. Hence the objectives of the study can be spelled out specifically as follows:

- i. To identify the information needs of teachers of special education in Shillong.
- ii. To examine the information seeking behavior of teachers of special education in Shillong.
- iii. To investigate the sources of information consulted by teachers of special education in Shillong.
- iv. To find out how information is used by teachers of special education in Shillong.
- v. To find out what problems are faced by the Special Education teachers in Shillong in seeking information

The Teachers

The investigator had taken 30 teachers from the institutions of special education. The selected schools were:-

Jyoti Sroat –Jyoti Sroat means “source of light” in Sanskrit language. The school started its services in a borrowed dhobi house belonging to St. Edmund’s School, Shillong of the Christian Brothers. Later the latter donated the land where the building stood to the Bethany Society which, subsequently with the aid of Government of Spain constructed three buildings on the site. One of the buildings is used by the school and the other two by the Divine Flame Hostels, Bethany Society. The hostels accommodate only 120 children and young people of a cross disability nature studying in the campus.

Thus JSS remained a special school with an enrolment of 70-80 till 2005. By now education for Children With Special Needs (CWSN) had long since taken a turn for the broader world of an inclusive nature. As opposed to residential schooling, CWSN remained in their own home and communities whilst attending their local schools. This is main streaming of education for CWSN. It provides opportunities for CWSN to excess learning and schooling along with other children at a larger scale. Realizing the benefits of children with special needs studying together with other children in general class rooms and such a system not yet in place in Meghalaya, the need was strongly felt that JSS itself should take on the task of a model of inclusive educational programs for ALL CHILDREN. In 2006, the step was taken on an experimental basis and as of date, the system is functioning satisfactorily. In 2009 the school has an enrolment of 170, half of which are children with no special needs. Further complying with the National Curriculum Framework (NCF) 2005, the school admits children:

- with special needs because of disability; from difficult circumstances, orphaned and abandoned, street, slum and abused children.
- from disadvantaged groups – semi rural, families in BPL category.
(<http://jyotisroast.in/who-we-are/>)

Dwar Jingkyrmen (the“Gateway of Hope”)- started on August 1, 1986, is a School for Children in need of Special Education, located in Stonyland, Shillong under the aegis of Ladies and Children Recreation Centre . The school at present has more than 100 students with 8 special educators. The Services Dwar Jingkyrmen offers are: Centre For Special Education; Pre Vocational Training Unit; Out Students Division; Unit For Autistic Spectrum Disorder; Home Based Rehabilitation Programme; Parent Involvement Programme; Respite Care Services; Referral Services; Awareness Programme; Stonyland Inclusive School for Pre Nursery, Nursery and Kindergarten; and Human Resource Development. Out of these the Respite Care Service which was completely funded by Johnson & Johnson Ltd, Mumbai has accommodation for four students for overnight stay in case the parents need to be out of station.

School & Centre for Hearing Handicapped children

The Society for the Welfare of the Disabled, Shillong was registered in 1990, with the aim of providing services to, and promoting rights of persons with disability in Meghalaya. It caters to the needs of over 600 persons with Disability, Cross Disability, Cross age, IBR, CBR, Urban and Rural. The School offers facilities such as:

1. Special Education - Group & Individual.
 2. Physiotherapy & Occupational Therapy.
 3. Vocational Training.
 4. Formation of Self - Help Groups.
 5. Parent Counseling.
 6. Assessment.
 7. Early Intervention.
 8. Transport Facilities.
 9. Follow up of Social Work Issues.
 10. Follow up of Medical Health Work.
- (<http://www.carencureindia.org/maryricecentresped.asp>)

Findings

The technique adopted in the present study was the questionnaire method. A total of 30 questionnaires was distributed to the teachers of the three selected schools. The questionnaire for the present study had been constructed with suggestions and advice from the supervisor keeping in view the objectives of the study. The questionnaire was constructed in such a way as to motivate the respondents and obtain necessary information from them. Out of the total 30 questionnaires distributed, only 25 questionnaires were returned. Therefore the response rate is 83%.

Number of Respondents

- Jyoti Sroat
- Dwar Jingkyrmen
- School & Centre for Hearing Handicapped children

Personal Profiles of the Respondents

Of the 30 respondents, 23(92%) were female and 2(8%) were male. The acquired data show that a large number of the respondents were females. Of the 25 respondents, 8(32%) had a Master's degree, 17(68%) had a bachelor's degree. The highest number of respondents had less than 5 years teaching experience. Seven (28%) had 5-10 years experience, Four (16%) had 11-15 years experience. Only one (4%) respondent had 21 and above years experience. Most of the respondents were between 26-30 years old. Five (20%) respondents were between 21-25 years old. Six (24%) respondents were 25-40 years old. Only one (4%) respondent was more than 40 years old. Sixteen (64%) respondents were permanent employees and Nine (36%) respondents were part-time teachers.

Tabular representation of the received data

The data that were received through the questionnaire are represented in the tables that follow:

Table 1
Types of students taught

Types of students taught	No. of respondents	Percentage
Students with Visual Impairments	9	36%
Students with Hearing Impairments	2	8%
Students with Mental Impairments	16	64%
Students with Speech and Language Impairments	14	56%
Students with Orthopedic Impairments	12	48%
Students with Learning Disabilities	15	60%
Students with Emotional Disturbances	9	36%
All of the above	4	16%
Any other	7	28%

Table 2
Nature of work

Nature of work	No. of respondents	Percentage
Classroom teaching	22	88%
Counseling	4	16%
Assisting the children physically	4	16%
All of the above	1	4%

Table 3
Working hours

Working hours	No. of respondents	Percentage
One hour a day	1	4%
Two hours a day	—	—
Three hours a day	—	—
Four hours a day	—	—
More than four hours a day	24	96%

Table 4
Whether teaching individuals with disabilities is different from other types of
teaching

Whether teaching individuals with disabilities is different from other types of teaching	No. of respondents	Percentage
Yes	25	100%
No	—	—

Table 5
Difficulties faced in teaching children with disabilities

Difficulties faced in teaching children with disabilities	No. of respondents	Percentage
Yes	10	40%
No	15	60%

Table 5.1
If yes, types of difficulties

	No. of respondents	Percentage
Violence	2	20%
Indiscipline	2	20%
Lack of understanding	10	100%
Their Unwillingness	3	30%
Any other	2	20%

Table 6
Feeling of isolation being a teacher of children with disabilities

Feeling of isolation being a teacher of children with disabilities	No. of respondents	Percentage
Yes	23	92%
No	2	8%

Table 7
Purpose of information search

Purpose of information search	No. of respondents	Percentage
To keep up-to-date	21	84%
To write article or book	—	—
General knowledge	4	16%
Reading purpose only	—	—

Table 8
When is the information needed?

When is the information needed?	No. of respondents	Percentage
Before the school session starts	14	56%
During the school session	3	12%
Before a project	5	20%
All of the above	3	12%

Table 9

Whether information search by special educators is different from that of other types of teachers

Where do they search for information?	No. of respondents	Percentage
From colleagues	14	56%
From experts	7	28%
From parents of children	8	32%
From the Internet	8	32%
From the library	10	40%
All of the above	4	16%

Table 10

What happens if information is not available?	No. of respondents	Percentage
Change my information needs	3	12%
Change the way in which I search for my information	14	56%
Give up	8	32%
Any other	8	32%

Table 10.1

Table 11

Contribution of discussions with parents of children

Contribution of discussions with parents of children	No. of respondents	Percentage
Child's Health	—	—
Child's Behavior	—	—
Child's Improvement	—	—
All of the above	25	100%

Table 12
Contribution of discussions with Medical professionals

Contribution of discussions with Medical professionals	No. of respondents	Percentage
Yes	19	76%
No	6	24%

Table 12.1
Medical professionals contacted

Medical professionals contacted	No. of respondents	Percentage
Neurologist	5	26%
Orthopedist	2	10%
Pediatrics	2	10%
Ophthalmologist	2	10%
Audiologist	2	10%
Psychiatrists	4	21%
All of the above	2	10%
Any other	2	10%

Table 13
Contribution of discussions with colleagues

Contribution of discussions with colleagues	No. of respondents	Percentage
Yes	25	100%
No	—	—

Table 13.1
Areas of discussions with colleagues

Areas of discussions with colleagues	No. of respondents	Percentage
Teaching methods	5	20%
Students' behavior	4	16%
Share problems	6	24%
All of the above	8	32%
Any other	2	8%

Table 14
Contribution of Seminars/ conferences

Contribution of Seminars/ conferences	No. of respondents	Percentage
Yes	25	100%
No	–	–

Table 14.1
Ways in which seminars contribute

Ways in which seminars contribute	No. of respondents	Percentage
Exposure to new ideas and methods	18	72%
Interaction with experts	2	8%
All of the above	5	20

Table.15
Access to the internet

Access to the internet	No. of respondents	Percentage
Yes	9	36
No	12	48

Table 15.1
Use of internet

Use of internet	No. of respondents	Percentage
Yes	17	68%
No	9	32%

Table 16
Search engine used

Search engine used	No. of respondents	Percentage
Google	13	76%
Bing	–	
Yahoo	4	24%

Table 17
Account in social networking sites

Account in social networking sites	No. of respondents	Percentage
Yes	8	47%
No	9	53%

Table 17.1
Social networking sites used

Social networking sites used	No. of respondents	Percentage
Facebook	6	75%
Orkut	–	–
Twitter	–	–
Blog	–	–
Both Facebook & orkut	2	25%

Table 17.2
Usefulness of social networks

Usefulness of social networks	No. of respondents	Percentage
Share information with others	2	25%
Update myself	–	
Share problems with others of the same field	1	12.5%
Learn from others	–	
All of the above	5	32%

Table 18
Satisfaction with the information from the internet

Satisfaction with the information from the internet	No. of respondents	Percentage
Yes	10	58.8%
No	5	29.4%
Sometimes	2	11.7%

Table 19
Hours spent on the internet a day

Hours spent on the internet a day	No. of respondents	Percentage
Half an hour a day	6	35.2%
One hour a day	9	52.9%
Two hours a day	1	5.8%
Three hours a day	–	–
More than three hours a day	1	5.8%

Table 20
Use of library

Use of library	No. of respondents	Percentage
Yes	25	100%
No	–	–

Table 21
Type of library used

Type of library used	No. of respondents	Percentage
School library	20	80%
College library	–	–
University library	–	–
State Central library	3	12%
Special library	2	8%

Table 22
Frequency of visit to library

Frequency of visit to library	No. of respondents	Percentage
Daily	–	–
Weekly	12	48%
Monthly	4	16%
Sometimes	3	12%
Not at all	6	24%

Table 23
Satisfaction with the library visited

Satisfaction with the library visited	No. of respondents	Percentage
Yes	12	48%
No	13	52%

Table 24
Personal library

Maintain personal library?	No. of respondents	Percentage
Yes	20	80%
No	5	20%

Table 25
Personal library collection

Personal library collection	No. of respondents	Percentage
Fiction	5	20%
Books related to my work	16	64%
Spiritual books	8	32%
Self help books	7	28%
Newspaper/Magazine	10	40%
Journals	6	24%
Braille	6	24%
Ceiling books	1	45%
Audiovisual materials		
Television	6	24%
Internet	7	28%
Radio	3	12%
Tapes/Film	5	20%

Table 26
Dependence on personal library

Dependence on personal library	No. of respondents	Percentage
To great extent	1	4%
To some extent	22	88%
Not at all	2	8%

Table 27
Membership of other library

Member of other library?	No. of respondents	Percentage
Yes	2	8%
No	23	29%

Table 28
Dependence on other library

Dependence on other library	No. of respondents	Percentage
To great extent	–	–
To some extent	2	8%
Not at all	–	–

Table 31
Format preferred for information source

Format preferred for information source	No. of respondents	Percentage
Print	20	80%
Electronic	5	20%

Table 32
Constraints/difficulties experienced while collecting your information

Constraints/difficulties experienced while collecting your information?	No. of respondents	Percentage
Yes	23	92%
No	2	8%

Table 32.1
Types of constraints faced while collecting information

Types of constraints faced while collecting information	To great extent	To some extent	Not at all
Shortage of resources	4 (17%)	12(52%)	–
Inability or unwillingness of information providers	–	10(43%)	–
Non availability of information source	–	14(60%)	–
Lack of time	3(13%)	15(65%)	–
Non-cooperation from staff	1(4%)	4(17%)	–
Ineffective service of library	–	8(34%)	–

Table 33
Keeping up with the advances in their work

Keeping up with advances in their work	No. of respondents	Percentage
Through literature	10	64%
Through interaction with colleagues	9	60%
Through the media	6	24%
Through the internet	3	36%
All of the above	6	24%

Table 34
Membership of professional group

Membership of professional group	No. of respondents	Percentage
Yes	3	12%
No	22	88%

Table 34.1
Usefulness of professional groups to the field of activity

Usefulness of professional groups to the field of activity	No. of respondents	Percentage
To great extent	–	–
To some extent	3	100%
Not at all	–	–

Discussion

The questionnaire garnered a wide variety of information that presents a fairly good picture of the information needs and information seeking behavior of Special Education teachers. In the light of the data received and analyzed, the findings can be summarized as follows:

Work Culture in Special Education

The result of the study shows that teaching children with disabilities is very different from other types of teaching (Table 4). It was also discovered that ninety-two percent (92%) of the respondents experience a feeling of isolation being teachers of children with disabilities (Table 6). Many of the respondents say that the information search by them is different from that of other types of teachers (Table 9). A majority of the respondents teach the mentally impaired students and the Learning disabilities students and their main activity is classroom teaching. (Table 1)

Purpose and timing of Information Search

For many respondents, the purpose for information search (Table 7) was to try to keep them up-to-date since teaching children with disabilities requires lots of ideas and techniques. Search for information takes place mainly before the school session starts (Table 8)

Information Seeking Behavior

Fifty-six (56%) percent of the respondents mainly search for information from their own colleagues (Tables 13, 13.1). The respondents agreed that discussion with colleagues also contributes a lot in issues related to teaching methods, student behavior etc.

1. If information is not available, 52% of the respondents change the way in which they search for their information. (Table 10.1)
2. All respondents felt that discussion with parents of children contributes a lot to their solving their information needs (Table 11).

3. The study also found that 76% of respondents feel that discussions with medical professionals (Tables 12, 12.1) contribute to their meeting their information needs.
4. Attending Seminars/Conferences (Tables 14, 14.1) contribute helps respondents get exposed to new ideas and methods, a point all respondents wholeheartedly agree on.
5. Professional groups don't seem to have much significance for Special Education teachers in Shillong. Only a small percentage (Twelve percent – 12 %) of the respondents were members of such groups and even these found professional groups useful to a little extent only (Tables 34, 34.1).

Use of Computers and the Internet

The study found that 80% of respondents have computers in their personal library where 36% respondents have access to the internet (Tables 15, 15.1) and 48% do not. Some of the respondents use internet for their information needs where 8 respondents also have accounts in social networking sites (Table 17). Such sites help the respondents to learn from others and also to share their problems with others of the same field (Tables 17.1, 17.2).

Use of Libraries

Many respondents think that the library is a necessity to fulfill their information needs and most of the respondents visit the library weekly. The study reveals that some of the respondents have personal libraries which mostly contain books related to their work. Eighty-eight percent (88%) of the respondents depend on their personal library to some extent only, four percent (4%) to a great extent and eight percent (8%) not at all. Only a dismal percentage (2%) of respondents are members of other libraries and they depend on such libraries only to some extent. (Tables 20, 21, 23, 24, 26)

Information Sources Used

The study found that a majority of the respondents use books related to their work to a great extent. Seventy-six percent (76%) of the respondents depend mostly on foreign sources and twenty four percent (24%), on Indian sources (Table 30). A majority (eighty percent -80%) preferred using information sources in Print format rather than in electronic format (Table 31). Constraints/difficulties are experienced by ninety-two percent (92%) of the respondents while collecting information. The problems arise mainly due to non-availability of sources, shortage of resources and lack of time (Tables 32, 32.1).

Keeping up with advances

A majority of the respondents keep up with the advances in their work through literature and through interaction with colleagues. (Table 33)

Suggestions

The following suggestions (from the research scholar and respondents) have emerged from the study:

- Since most of the respondents depend on the library to some extent due to shortage of resources and non-availability of sources, it is suggested that the institutional library should provide enough resources in their related fields.
- Conferences and seminars are the main communication channels for information, so authorities should encourage the teachers in conducting and attending such programs.
- Books on disability need to be published in India as good books are available only from abroad and are not easily accessible.
- Much effort should be made by the government to assist special education since the information regarding disability is very limited locally.
- Librarians must be aware of how the teachers of special education seek information and librarians should focus on assisting such users to develop a better image for the library.

Conclusion

Just as their students are unique, Special Education teachers too are unique in their qualifications, qualities, and work culture and especially in their teaching methods. This uniqueness needs to be understood by information providers such as government departments, libraries and information centers in order that the right kind of facilities are provided to this special community. Meeting the information needs of the teachers would in turn meet the information needs of the students. This study had set out to discover what those information needs were and how the teachers were meeting them. Despite the small sample and low response rate, the results of this study can, to some extent, bring to the fore the issues Special Education teachers face in connection with information and perhaps help alleviate their situation.

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Helping Preservice Special Educators Scaffold the Reflection Process

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Abstract

Teacher candidates, because of their lack of experience, often display signs of apparent understanding which leads to professional practice and behaviors that are blind, impulsive and many times not appropriate. Through dialogue and reflection, the authors became concerned as to how to scaffold a richer learning opportunity that would lead toward a more effective and engaging practice. In order to deepen teacher candidate pedagogical understanding, the authors implemented an action research project to address the issue. In this article, the authors characterize action research, share their lived experiences regarding how they have improved their professional practice in preparing special education teacher candidates by creating a systematic process for reflection, and describe how to use the KALH (Knowing, Affective, Learning, and Happening) to assist pre-service teachers in their attempt to scaffold their learning. Provided are (a) what we learned from the action research, and (b) examples regarding how the KALH reflection strategy might be used by following the reflection process.

Scaffolding the Reflection Process

Field experiences create opportunities for teacher candidates to practice theories they have learned in the university classroom juxtapose with the experience gained from their work with children (Etscheidt, Curran, & Sawyer, 2012; Snyder, 2011). Dewey (1938) maintained that reflection is an important aspect of learning from experience, in which reflection leads us to act in deliberate and intentional ways instead of acting in blind and impulsive ways. As researchers, what we have observed in our field experiences is that teacher candidates lack a deep understanding of their work with children, as well as how to connect theory to practice. Too often teacher candidates appear to be satisfied with limited signs of understanding and over look the importance of in depth reflection. Reflective practices provide the opportunity for teacher candidates to critically examine their experiences and assumptions while considering the cultural dimensions of their practice and society, which in turn leads to changes in their behavior and pedagogy (Mezirow, 2000; Young, Mountford, & Skrla, 2006; Rich & Hannafin, 2009).

Acknowledging the challenges of the teacher candidates to critically bridge theory to practice led the researchers to think about how they could cultivate a richer learning experience for teacher candidates during their field experience/student teaching semester.

Cognizant of the No Child Left Behind Act of 2001 (NCLB) legislation and its impact on the preparation of teacher candidates in the field of special education, the authors used action research to systematically reflect upon their teacher preparation practice specific to addressing the bridge from theory to practice. The term highly qualified, which is complex and multilevel, is a major focus of the NCLB Act. The criteria identifying a highly qualified teacher as outlined in the NCLB Act are: (a) passing state teacher licensing exams, (b) mastering subject matter knowledge and teaching skills in the academic subjects that they teach, (c) earning undergraduate/graduate degrees in education, and (d) receiving state licensure. East (2002) stated,

...many questions have been raised about the implications of NCLB for special education....In some cases, the implications are quite clear, e.g., students with disabilities need to be included in a state's new accountability system and data has to be disaggregated for students with disabilities. But in other places, the intersection of the laws is not at all clear (p. 1).

Knowing the implications that the NCLB Act presents to the preparation of special education teachers, compounded with knowledge gained about teacher candidates in their field experience/student teaching, the authors are continually challenged to effectively train highly qualified teachers for careers in the field of special education. They argue that the NCLB legislation is theorized in a technocratic and instrumentalist paradigm and that the criteria set forth for defining a highly qualified teacher is not sufficient. Although they teach in a teacher preparation program that helps meet the criteria for highly qualified teachers as outlined in the NCLB Act, the authors expanded the NCLB criteria for a highly qualified teacher by systematically improving their teacher preparation practice to include that teacher candidates acquire a disposition of in depth reflective practices. Moreover, seeing that the reauthorization of the original Elementary and Secondary Education Act (ESEA) has been around the corner for several years now, we posit that reflective practices, or transformational learning, on behalf of the teacher candidate positions teachers for the real demand for highly qualified teachers.

Characteristics of Action Research Methodology

Sagor (1992) stated that, "action research ... is conducted by people who want to do something to improve their own situation. When other people read about their work, notice it, or make use of it that is simply icing on the cake. Action researchers undertake a study because they want to know whether they can do something in a better way" (p. 7).

This action research project was about improving practice in critically preparing special education teacher candidates. The major goals were to better understand how to engage teacher candidates in the reflection process regarding their learning as a result of their

field experience and to think about how to critically improve teacher preparation. The guiding question that framed the work toward improving learning for teacher candidates from their field experience was: What would happen if teacher candidates were given opportunities to systematically reflect on their lived experiences during their field experience? The action research strategy included the following five phases as suggested by Fischer (1996): (a) Phase 1: Identifying a topic for research, (b) Phase 2: Inquiring with observations, interests, and ideas that are systematically pursued, (c) Phase 3: Developing an action plan, (d) Phase 4: Collecting compelling and convincing data, (e) Phase 5: Analyzing the data and identifying patterns, themes, and meanings. Following is a discussion of each phase.

Phase 1: Identifying a Topic for Research

To begin, the researchers engaged in numerous conversations about the work they were doing in their student teaching program in relationship to the NCLB legislation. Dialogue was used as a means to identify and develop questions along with the search for answers. A guiding question that emerged from this dialectical encounter was: *How do we know when something is going well in our seminar and field experience?* What was learned was that the Teacher Preparation Program was doing very well in preparing special education teachers to work in settings with children with disabilities. This was evidenced by the 100% passing rate of the state teacher assessment, cooperating teacher evaluations, university supervisor evaluations, school districts aggressive hiring practices, and the researchers' professional judgments when working with special education teacher candidates during the field experience. What was realized was that these assessments identified the knowledge base of teacher candidates and not necessarily the bridge from theory to practice that demonstrates the in depth understanding field experience supervisors are seeking to identify.

Another guiding question that emerged from the researchers' dialectical encounters was, *How did we get good at preparing teacher candidates to work in settings with children with disabilities?* The researchers realized that their passion for professional development and staying current with best practices in the field were contributors in their efforts to becoming excellent teachers themselves and in their mission to develop critically informed special education teachers. It became evident that there was a strong relationship among the cooperating teachers, university supervisors, teacher-candidates, and researchers. The field experience/student teaching provided guidance, mentoring, and learning activities intended to scaffold student knowing of *best practices* (i.e., collaborative lesson planning, seminar discussions, triad sessions) in the field. As the dialogue about their work continued, the researchers asked the final, guiding question for this phase, *What is missing?* This question positioned the researchers to begin to critically think about their teaching practice in the field experience. As the researchers thought about their practice in terms of bridging theory to practice, they came to the conclusion that the best way to answer the question was through systematic inquiry into their practice. This realization led to Phase 2 of the Action Research study.

Phase 2: Inquiring With Observations, Interests, and Ideas Systematically Pursued

The inquiry began by conducting observations of teacher candidates and exploring the researchers' personal interests and ideas in relation to the preparation of special education teacher candidates. What stood out from this exploration was the suggested definition of teacher quality proposed by the NCLB legislation, which became problematic. They argued that a quality teacher defined by the attainment of degrees, licensure, and passing rigorous state exams was not enough. The researchers added another component to the definition, that of becoming reflective practitioners. Martusewicz (2001) stated,

Of all professionals, educators ought to be able to think about whom they have been, who they are becoming and what the world they live in has to do with any of this. Moreover, they ought to be in the habit of asking what their relation to and experience of the larger world around them has to do with what they believe about teaching and learning, about education, and therefore what they believe education offers a person or a community or the larger world. They ought to be able to ponder what kind of person the world needs and thus make choices for what they ought to be doing in their own classrooms. If they don't, someone else surely will (p. 21).

What was gleaned from Martusewicz's words is the challenge to rethink the present work and responsibilities in the preparation of special education teacher candidates. As reflective practitioners, the attainment of knowledge in content areas, disabilities, and skills for working with children with disabilities is expected. To become a reflective practitioner, teacher candidates must be able to systematically reflect on their practice (Boden, Cook, Lasker-Scott, Moore, & Shelton, 2006). The result of this reflection leads teacher candidates to exercise professional judgment, which ultimately translates into professional change (Jewiss, & Clark-Keefe, 2007; Oner & Adadan, 2011; Rich & Hannafin, 2009).

During the field experience/student teaching, the researchers identified that teacher reflection was a weak component as evidenced in the reflective assignments (e.g., daily lessons, classroom observations, assessments) and their classroom teaching behaviors. The researchers questioned the quality, depth, and usefulness of these assignments and the impact of their classroom teaching behaviors on student learning. What was evident in the written assignments was an indication of superficial professional judgment. The work demonstrated knowledge of many content areas but lacked a strong voice demonstrating understanding. Wiggins and McTighe (1998) argued that knowing does not mean understanding. Wiggins and McTighe further stated, "In short, what we call understanding is not a matter of "mere" semantics but one of conceptual clarity. We sharpen the distinction between a superficial or borrowed opinion and an in-depth, justified understanding of the same idea" (p. 40).

The evidence of understanding that the researchers were looking for from the teacher candidates was the interplay of skills, knowledge, and professional dispositions which lead to understanding of how children with disabilities demonstrated learning that

resulted from the lessons presented to them in the classroom. What the teacher candidates were focused on was the delivery of instruction solely versus the gained knowledge of content by the children. Through discussions in the field experience/student teaching, the same occurrence of understanding was evident. When teacher candidates were asked to share during the field experience/student teaching seminar the learning that children gained by participating in a certain lesson, the teacher candidates reported, “the lesson went well, the kids had fun, and I would do it again.” When asked how they knew that the children learned the content of the lesson and that the lesson objectives were met, they responded by saying that, “If the lesson went well, that would indicate that children learned what they were supposed to have learned and that the objectives were met, they had fun.”

What was interesting to note was that teacher candidates viewed assessment as a separate component of a class lesson and not an integral part of the lesson. What they neglected to identify was that the use of assessment (e.g., children’s evidence of gained knowledge) should be the determinant that the curriculum and instruction was successful versus that the children had fun during the planned activities. After formal classroom observations and discussions with cooperating teachers, teacher candidates, and university supervisors, the same conclusions were derived. Upon further dialogue with the teacher candidates, the university researchers realized that teacher candidates were not able to really understand if children were learning because they lacked in depth, reflective thinking that could provide them with concrete examples to support the gained knowledge. Knowing this, the researchers created the following research problem statements and research questions to provide the focus for this Action Research study.

Problem Statements

- Teacher candidates’ reflection assignments on daily activities in the classroom lack evidence of critically bridging theory to practice in student learning outcomes, lesson process, procedural development, and student/teacher interactions.
- Teacher candidates’ reflection assignment of their observational work of master teachers demonstrate superficial understanding of best practices modeled by master teachers as opposed to in depth critical understandings of theory to practice.

Research Questions

- How will the use of a reflection tool that bridges theory to practice assist teacher candidates in the reflection process and, ultimately, their critical transformational experience?
- How will the use of a reflection tool that bridges theory to practice scaffold understanding of curriculum development, implementation, evaluation, and instructional change?

- How will the use of a reflection tool that bridges theory to practice structure reflection that builds confidence in teacher candidates to exercise professional judgment that leads to critical professional change?

Phase 3: Developing an Action Plan

Prior to developing the action plan, the researchers developed the KALH Reflection Strategy as the starting place for improving teacher candidates' reflective practices. Once the KALH Reflection Strategy was developed, the researchers felt the need to field test the tool for clarity and effectiveness. Initially, the KALH Reflection Strategy had four components: Knowing, Affect, Happening, and Learning. In addition to the KALH, the candidates were required to provide Examples as an indication that they had ultimately connected their reflection to change in their behavior and pedagogy thereby solidifying the critical transformational experience (Mezirow, 2000; Young, Mountford, & Skrla, 2006).

Dieker and Monda-Amaya (1997) stated that, as the focus on developing reflective practitioners increases, there needs to be an examination of the various techniques that affect pre-service teachers' reflective thoughts. Gray (2007) advocated for the development of critical reflection through reflective tools (i.e., storytelling, reflective and reflexive conversations, reflective dialogue, reflective metaphor, journals, etc.) and this led to the creation of the KALH (see Figure 1). What we have done in this article is present one additional "tool" for eliciting critical reflection from teacher candidates.

Figure 1: KALH Reflective Tool

**KALH
Reflection Strategy**

The KALH reflection process that can be used as a guide through the reflection process.

Reflective Process	Guiding Questions	Concrete Examples (E)
Knowing	What do you remember hearing, seeing, or doing?	Include concrete examples in your response.
Affective	How did you feel? When were you excited? When were you frustrated? When were you empathetic? When did you experience anger? What other feelings did you experience and when?	Include concrete examples in your response.
Learning	What would you tell someone who was not in attendance?	Include concrete examples in your response.
Happening	What are you going to do with the information you learned?	Include concrete examples in your response.

Pilot Study

Setting

The pilot study took place in a minority-serving institution located in the southwest. The university is located 45 miles northwest from the United States and Mexico border. The university population is approximately 17,000 undergraduate and graduate students of which 42% are Latino/a, 37% White, 4% international, 3% American Indian, 3% African American, 1% Asian/Pacific Islander, and 9% other. The teacher preparation program is located in the College of Education, Department of Special Education/Communication Disorders.

Field Experience

In addition to a field experience, teacher-candidates were required to attend a 2.5 hour weekly seminar. The seminar is team taught by a general education university faculty

member and a special education university faculty member. The seminar was where the pilot study of the KALH Reflection Strategy took place.

Participants

A convenience sample of 109 teacher candidates (undergraduate and graduate students) from the licensure areas of early childhood, elementary, bilingual education, special education, and secondary education participated in the study. Their ethnic backgrounds included: 20% White, 70% Latino/a, and 10% African American; 90% were females, and 10% were males.

Pilot Study Discussion

Initially, the KALH Reflection Strategy was used as a tool for teacher candidates to use in order to reflect upon a panel presentation that was scheduled as part of the seminar activities and was led by elementary school principals. After the panel presentation, teacher candidates completed a reflection assignment on the presentation by using the KALH Reflection Strategy. In addition, they were instructed to write comments about the KALH Reflection Strategy and its usefulness in scaffolding their reflection. The following responses emerged from the exercise:

Teacher candidates' responses to the first stage of the KALH Reflection Strategy **KNOWING** focused on what they heard, saw, or did during the presentation. See Table 1 for examples of candidates' responses.

Table 1. KALH Reflection Strategy: Knowing Responses.

Student	Responses
1	"I saw how attentive they [principals] were to our questions."
2	"I listened very closely to what they were saying and remember myself trying to make meaning of what they were saying."
3	"...everybody in the room was involved with the discussion."
4	"I remember the principals telling us that it was important for us to really think about our commitment to teaching. I also remember them telling us that today's schools are heavily governed by regulations, standards, testing, and the big word accountability."

Teacher candidates' responses to the second stage of the KALH, the **AFFECTIVE**, appeared to be a little more difficult. Responses to this aspect were basically short, limited, and non-descriptive. Table 2 provides examples of candidates' responses.

Table 2. KALH Reflection Strategy: Affective Responses.

Student	Responses
1	"Most of what I heard made me feel happy."
2	"It relieved my stress a lot to get an inside idea about interviewing."
3	"The most impressed part about nearly every speaker was their love and enthusiasm for their job. They truly presented a positive face and had so many positive comments."
4	"During the whole presentation, I felt very relaxed and comfortable with what was being asked."
5	"I feel the principals were all very professional, and I felt motivated to go right out and submit résumés."

Teacher candidates' responses to the third stage of the KALH, **LEARNING**, positioned them to focus on fact. Table 3 shows how they responded.

Table 3. KALH Reflection Strategy: Learning Responses.

Student	Responses
1	"It is also good to know for all to bring references to the interview because I thought that having them at the Career Placement Center was enough."
2	"I would tell someone who is not in attendance to be sure to bring references with them to an interview and to also bring a sample of their work that could be left behind."

Teacher candidates' responses to the fourth stage of the KALH, **HAPPENING**, positioned the teacher candidates to plan and use the newly acquired information.

Table 4. KALH Reflection Strategy: Happening Responses.

Student	Responses
1	"I will go more prepared to interviews knowing what they expect to see."
2	"I will sell myself to the school."
3	"I will put together my packet for interviewing. I know what they want. I know what papers will be helpful, and I know what questions might be asked so I can help prepare myself."

As previously stated, teacher candidates were asked to write comments about the use of the KALH. Table 5 provides examples of additional comments provided by students.

Table 5. KALH Reflection Strategy: Additional Student Comments.

Student	Responses
1	"The guide was very helpful; it was easy to write on the topic."
2	"It broke concepts into easy to dissect pieces so that I wasn't overwhelmed."
3	"I like how the guiding sparked my memory and helped me recall information presented."
4	"The KALH was very helpful for me because I was able to express myself in writing easier."
5	"The KALH process was helpful. It helped me decide what I needed to write."

What the researchers gained from the pilot study of the KALH Reflection Strategy was evidence that the KALH helped to scaffold teacher candidates' reflection on the principal panel presentation. Based on the data obtained from the pilot study, the researchers concluded that even though the KALH helped to scaffold and elicit a stronger reflection as demonstrated in the teacher candidates' writing assignments, there were still not enough specific examples in their responses to each stage of the KALH to support their comments. Wiggins and McTighe (1998) told us that "understanding is always a matter of degree, typically furthered by questions and lines of inquiry that arise from reflection, discussion and use of ideas" (p. 45). The researchers believed that having teacher candidates include specific examples to support their comments would move them into a richer reflective process. Therefore, the candidates were required to provide specific example for each area of KALH. See how it was incorporated in Figure 1. Feeling confident that the KALH was complete, the researchers continued their action research study geared toward improving their teacher preparation practice by creating an Action Plan to implement in their seminar and study how their teacher preparation practice improved.

Table 6. Scaffolding the Reflection Process

Action Step	Person Responsible	Timeline	Evaluation
Dialogue	Researchers	Ongoing	Field Notes
Develop KALH	Researchers	First Semester	KALH Tool
Pilot Study	Researchers	First Semester	Data, Artifacts
Action Step	Person Responsible	Timeline	Evaluation
Revise KALH	Researchers	Second Semester	KALH Tool
Integrate KALH	Researchers	Ongoing	Artifacts
Action Research	Researchers	Second Semester	Artifacts
Data Analysis	Researchers	Ongoing	Artifacts
Improve Practice	Researchers	Ongoing	Artifacts

Phase 4: Collecting Compelling and Convincing Data and Action Plan Implementation

Martusewicz (2001) in her work with undergraduate students asked,

What does it mean to become educated? I asked them this because I believe that people who teach must be able to reflect upon that question, not in order to come to some final or certain answer, but to constantly challenge themselves to be conscious of what they are doing in relation to what they believe they ought to be doing (p. 20-21).

The researchers echo Martusewicz's words in their teacher preparation practice and have come to believe that reflection is critical for teacher candidates. The KALH was developed as a means to improve teacher preparation practice, to scaffold teacher candidates' reflective practice, and "to be conscious of what they are doing in relation to what they believe they ought to be doing" (p. 21). Each of the 5-stages of the KALH strategy systematically guides teacher candidates to reflect about a teaching situation leading to act in appropriate ways. In an attempt to find answers to the problem statements, why do teacher-candidates' reflective assignments on daily activities in the classroom lack evidence of understanding of student learning outcomes, lesson process, procedural development, and student/teacher interactions; and why do teacher candidates' reflective assignments of their observational work of master teachers, demonstrate superficial understanding of best practices modeled by master teachers, the researchers proceeded to collect data, reflect on the process, and search for solutions.

Steinberg and Kincheloe (1998) provided an interpretative inquiry model that was used as a framework for data collection for the study,

As we think about the progress or development of an interpretative inquiry project, it can be helpful to visualize it as a series of loops in a spiral. Each loop may represent a separate activity that looks like data collection and interpretation. When a study is viewed as a series of loops and spirals, each loop represents a different attempt to get closer to what you hope to understand. Each loop, or separate inquiry, is entered with a question. What is learned in the loop provides direction or a reframing of the question for the next loop (p. 52).

Visualizing the data collection as a series of spiral loops, the researchers first collected reflective assignments from teacher candidates and reviewed them throughout the study. The researchers developed and used a rubric to evaluate teacher candidates' understanding of their seminar assignments. Their work included four classroom observations with reflective write-ups, weekly philosophical exercises, daily lesson plans with a reflection component, and a journal maintained between the teacher candidate and the cooperating teacher.

Even though the KALH was used with all of the teacher candidates (n = 109), data collection was focused on the special education teacher candidates (n = 8): females (7) male (1); White (4); Hispanic (4). On the first day of the seminar

(second semester), teacher candidates were given an orientation to the development of the KALH and its use in all of the seminar assignments. Teacher candidates used the KALH to complete all of their written assignments during the semester. The researchers then reviewed each teacher candidate's assignments to determine if the KALH did, indeed, scaffold their reflective practice.

A one-hour videotaped focus group was conducted with teacher candidates at the end of the semester. The focus group was organized to engage teacher candidates in a conversation on the use and effectiveness of the KALH strategy. The structure of the focus group consisted of (a) welcoming students and thanking them for participating in the study, (b) participating in answering four open-ended questions, and (c) encouraging participants to share additional comments, which were documented as field notes with the researchers. The four questions posed to the group were:

1. How does the KALH strategy scaffold your learning and improve your teaching practice?
2. What is exciting about the use of the KALH strategy?
3. Do you think the use of the KALH is important in teacher reflection? Why? Why not?
4. Will you continue using the KALH strategy in your teaching career? Why? Why not?

The researchers then viewed, listened, and analyzed the videotapes and systematically coded the data. Upon collecting compelling and convincing data, the researchers proceeded to Phase 5: Analyzing the data and identifying patterns, themes, and meanings.

Phase 5: Analyzing the data and identifying patterns, themes, and meanings

Data collected from the video focus group, seminar assignments, and the researchers' notes were organized for analyses. To analyze the data, the researchers used a three-pronged approach to make meaning of the information that was collected as suggested by Graue and Walsh (1998). First, the researchers examined the data and determined *what was unique?* Second, they noted *what was unexpected about the data collected.* And last, they noted *what was missing in the data.*

What was unique? As a means to begin data analysis, the researchers reviewed the data collected and began identifying, categorizing, and coding the data by asking themselves, "What was unique about the data?" This exercise set the data analysis in motion. Participant responses that stood out for the researchers were:

Table 7. What was Unique in the Student Responses?

Student	Responses
1	“The KALH helped me to focus and keep me from straying.”
2	“It helped to know the KALH process [and how] to use it.”
3	“I need to be familiar with the KALH—it was intimidating at first.”
4	“For me, I had to make it personal. I couldn’t see what was happening, I had to hear it in my mind”
5	“How do I apply the information—how is it relevant to me?”
6	“It helped my reflection flow.”
7	“It helps me get through my day especially if something is not working—it helps me refocus.”
8	“I think that the KALH can work with children if the questions were more specific and not open-ended. It can help children organize their writing.”
9	“You don’t always get a chance to feel.”
10	“It forced me to look, see, and feel.”

What was learned from the first level of data analysis is that teacher candidates struggled to be proactive as the result of the ideas gained from the use of the KALH. Teacher candidates appeared *off guard* with the idea of knowing exactly what to do about situations encountered in their field experience/student teaching due to their learned behavior of reacting to situations. What was determined was that teacher candidates using the KALH needed practice in translating their understanding, the knowing of what to do in a particular situation as the result of their reflection, and doing what they needed to do. The researchers then theorized that this dissonance occurred because teacher candidates most likely used methods to inform professional judgment versus teacher reflection on the teaching situation and its relation to methods of instruction.

Continuing to guide the journey of data analysis, the researchers followed the guiding question: *What is unexpected about the data?* Using this question positioned them to begin to look deeper into what the data was telling about teacher candidates' reflective practices. Participants' responses included:

Table 8. What Unexpected about the Data Student Responses

Student	Responses
1	"I could start anywhere. I worked backwards.
2	"I used it wrong."
3	"I am frustrated. How can I avoid being frustrated every day? The KALH has now become second nature...this is now my system for documenting student behaviors."
4	"The KALH is a tool to use as I need it. It's not necessary to use every step every time."
Student	Responses
5	"More steps might get me lost, and then it would just be another piece of paper that I stuff in my bag."
6	"It didn't work for me.
7	"By observing, I did not get enough information to reflect. I needed to interact with the teacher."

What was gleaned from the second level of data analysis was that teacher candidates did not have to follow the order of the KALH stages. The KALH was an organized strategy in itself. The guiding question in the third level of analysis was: *What was missing from the data?* The use of this question enabled the researchers to think critically and reflect on the data collected. Acknowledging critical reflective practices as defined earlier by Young et al. (2006), and Mezirow (2000), it was evident to the researchers that as part of the KALH process more specific examples needed to be included, such as examples related to teacher candidate's experiences and assumptions while considering the cultural dimensions of their practice and society. For example, along with a common societal assumption that a student with any disability connotes low academic performance, teacher candidates need the opportunity to reflect and transform their behavior and pedagogy around the reality that students with disabilities in fact have real gifts and talents. Therefore, in order to transform teacher candidates' behavior and pedagogy, reflection about their classroom experiences related to their own transformation must be examined more critically through the documentation process applied with the KALH process.

Discussion

The purpose of this research was to improve the quality of the teacher preparation program. Through this action research, it was identified that teacher candidates lacked in depth critical reflection as demonstrated in their reflective assignments. They lacked critically examining their experiences and assumptions while considering the cultural

dimensions of their practice and society. Knowing about this weakness, the researchers developed a reflective tool that bridged theory with practice to assist teacher candidates in the reflection process. Even though the sample size was small, it appeared (as evidenced in the teacher candidates' written reflective assignments and in the focus sessions) that the KALH did in fact scaffold teacher candidates' reflections. Teacher candidates demonstrated a more in depth understanding of curriculum development, implementation, evaluation, and instructional change via the application of the KALH and their ability to document how this understanding had occurred, especially considering critical issues around disabilities. As a by-product of this gained knowledge, which was obtained through the use of the KALH, teacher candidates voiced that their confidence had increased as a result of their critical teacher reflection. In addition, teacher candidates expressed that this confidence enabled them to exercise professional judgment that led toward appropriate and critical professional change.

Reflection by University Researchers

Improving teacher practice requires a systematic process for reflection. Action research is a powerful tool to do this. The researchers have attempted to document their reflective journey of improving teacher preparation practice and have discovered the value of action research as a tool to guide professional practice. Based on the data collected, the KALH appeared to be an effective strategy for in depth reflection. Even though the use of the KALH was considered time consuming, teacher candidates gained important and useful knowledge that informed their decisions about the development of assessments, curriculum, and instruction; ultimately, providing evidence of student learning.

By engaging in action research, the researchers have become more reflective practitioners, (Schon, 1987) particularly through the understanding that their students can provide them with the necessary information to enhance their quality of teaching. Rather than dialoguing about intuitive reasons as to why teacher candidates' work was not at the standard identified by the researchers, they implored a strategy that systematically explored those issues. As a result of their lived experiences using action research, change in their teaching practice has occurred.

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Preparing Preservice Teachers to Address Bullying through Cartoon Lessons

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Abstract

Students who qualify for special education services are at risk for being bullied because of their cognitive, emotional, behavioral, or physical differences. Currently, teachers are not effective enough in reducing bullying; better preservice teacher preparation in this area may help to alleviate the problem. The current study explored the effects of preservice teachers using cartoons to spark discussion of bullying issues during practicum experiences with elementary students at urban schools. Twenty-one preservice special education teachers participated in the mostly qualitative study that presented an analysis of their reflections after teaching three cartoon-focused lessons on bullying to students in small groups, each containing at least one student with special needs. Reflections revealed the success of the cartoon lessons with positive effect on classroom climate. Preservice special education teachers became aware of the motivating effects of cartoons, the pervasiveness of bullying and the eagerness of elementary students to discuss it.

Preparing Preservice Teachers to Address Bullying through Cartoon Lessons

Bullying is one of the most common and pervasive behavior problems in school settings (Espelege & Swearer, 2003; Heinrichs, 2003). It has been a concern for generations, probably as long as there have been school systems, and is a national and international phenomenon (Carney & Merrell, 2001). Bullying is defined as repeated acts of aggression or intentions of harm, intimidation, or coercion against a victim who is weaker than the perpetrator in physical size, social power, or other areas that cause a notable power differential (Carney & Merrell, 2001; Farrington, 1993; Glumbic & Zunic-Pavlovic, 2010; Olweus, 1987; Olweus, 1993; Olweus, 1999; Smith & Ananiadou, 2003). Key features of bullying include intent to harm, the repeated aspect of harmful acts, and power imbalance between the bully and victim. Besides physical aggression (hitting, pushing, and kicking), bullying can be exhibited through relational aggression, such as social exclusion, as well as verbal harassment or intimidation (name calling, provoking, making threats, and spreading rumors) (Berger, 2007; Fekkes, Pijpers, & Verloove-Vanhorick, 2005; Merrell, Gueldner, Ross, & Isava, 2008). These behaviors can occur in the school building, on school grounds, going to and from school, or in cyberspace (Swearer, Wang, Maag, Siebecker, & Frerichs, 2012).

Bullies tend to have poor academic skills, lack empathy, have a heightened risk for substance use and criminal behavior, and grow increasingly unpopular as they age. They are often described as hot-tempered, impulsive, and good at talking themselves out of difficult situations. Bullies typically come from homes with poor parental role modeling for how to problem solve without aggression and they lack consistent and effective discipline (Merrell et al., 2008; Olweus, 1993; Schwartz, 2000). Victims tend to be physically smaller and weaker than bullies. They often are anxious, fearful, insecure, depressed, and have poor self-esteem. Victims tend to avoid school and at times drop out of school as a result of bullying. Victims are also more likely than perpetrators to bring weapons to school to seek revenge (Merrell et al., 2008). As a consequence of bullying, victims may develop emotional and social problems leading to increased social isolation which amplify social problems (Kim, Leventhal, Koh, Hubbard, & Boyce, 2006; Reiter & Lapidot-Lefler, 2007).

Bullying and Students with Special Needs

Students with special needs are overrepresented within the bullying dynamic (McLaughlin, Byers, & Vaughn, 2010). As victims, nearly all students with special needs are in danger of verbal harassment, and even physical and sexual violence (Martlew & Hodson, 1991; Morrison, Furlong, & Smith, 1994; Reiter & Lapidot-Lefler, 2007). Students with special needs can potentially become victims because they lack personal qualities valued by their peer groups and bear a stigma related to their learning, physical, or emotional challenges. Additionally, many lack the social skills necessary to avoid being bullied and are often placed in inclusive environments that do not provide adequate protection from bullies. As a result, some special needs students react violently to bullying and become victim-bullies (Glumbic & Zunic-Pavlovic, 2010; McLaughlin et al, 2010; Nabuzoka, 2003; Nabuzoka & Smith, 1993). Additionally, restrictive educational placements (Rose, Monda-Amaya, & Espelage, 2009) and overreaction to rough play (Nabuzoka & Smith, 1999) can place students with special needs at greater risk for becoming a victims, bullies, or bully-victims (Swearer et al., 2012; Whitney & Thompson, 1994).

Students with special needs are described as being twice as likely to be identified as victims and bullies (Rose Monda-Amaya, and Espelage, 2011). Specifically, students with intellectual disabilities (28%) report having been bullied compared to students in the general population (9.8%) (Dickson, Emerson and Hatton, 2005). Whitney, Smith, and Thompson (1994) found that 55% of students with mild disabilities and 78% of students with moderate disabilities reported moderate to severe victimization in inclusive settings compare to 25% of other peers in the same setting. Students with behavioral, emotional, or developmental problems were also two times more likely to become a victim and three times more likely to become a bully or bully-victim in comparison so students without special needs (Van Cleave and Davis, 2006).

Children with clinically significant behavior problems, such as conduct disorders, hyperactivity, emotional symptoms, and peer problems were more likely to experience physical and relational bullying, than children without significant behavior problems

(Woods and Wolke, 2004). Students with observable disabilities, such as language and hearing impairments, were more likely to be victimized and bully others compared to students in general education, while students with non-observable disabilities, such as a learning disability, describe similar levels of victimization and bullying as students without disabilities (Swearer et al., 2012). As a result, special attention must be paid to therapeutic and educational programs which empower all students with special needs (Reiter & Lapidot-Leffler, 2007).

Approaches to Addressing Bullying

Bullying is part of social interaction and peer culture at a particular school (Smith 2004) allowing interventions that focus on turning bystanders into defenders to be successful for pre-puberty students (Salmivalli, Kaukiainen, Voeten, & Sinisammal, 2004). In contrast, interventions that view bullying as an individual personal problem, grouping bullies into therapeutic groups focused on empathy-building, self-esteem enhancement, or anger management created more confident bullies rather than decreasing negative behaviors, as in most cases bullying is a larger social problem not based on anger or low self-esteem (Limber, Nation, Tracy, Melton, & Vlerx, 2004).

Effective bully prevention programs involve the entire school community, with awareness and commitment from adults serving as a prerequisite for success (Heinrichs, 2003). Research has revealed teachers are generally ineffective in their efforts to intervene and address bullying in schools (Bauman, Rigby, & Hoppa, 2008). For example, Fekkes, Pijpers, and Verloove-Vanhorick (2005) discovered that of the children who reported they were bullied several times a week and told their teachers, only 28% of teachers were successful in stopping the bullying, while 8% did not attempt to assist the students. Office referrals were a primary intervention taken by teachers and staff when bullying behaviors were observed or reported by students (Swearer et al., 2012). Teachers also view strategies such as talking with the bully, the victim, and their parents to discuss the problem and generate solutions as effective for addressing bullying. Teachers also endorsed punishment for the bully, but supported the notion of counseling before implementing punitive actions (Dake, Price, Telljohann, & Funk, 2003; Harris & Willoughby, 2003).

Teachers and other adults attempting to successfully address bullying at the school, classroom, and individual levels need prevention programming, which facilitates the following essential components: increases awareness and understanding of bullying; gathers information on bullying; has rules for bullying behavior; includes both teacher discussions and student class meetings; increases supervision in high-risk areas; provides social skills training for victims and bullies; and involves parents (Heinrichs, 2003; Swearer et al., 2012; Vreeman & Carroll, 2007). This programming should also have adaptations and modifications to meet the learning and behavior characteristics of children with special needs and assist them in becoming better integrated into general education classrooms by directly teaching age appropriate social skills students can use with their peers (Heinrichs, 2003).

Limited and consistent teacher success and school-wide intervention programming in stopping bullying has been attributed to the limited anti-bully education in undergraduate or graduate teacher preparation programs. Given the inevitability of encountering incidents of bullying in schools, preparation to handle such incidents should not be left to chance. Reliance only on short lived conferences and school in-service sessions is insufficient in preparing teachers with a variety of strategies to stop bullying (Bauman, et al., 2008; Heinrichs, 2003). What has been recommended is that anti-bullying education be part of teacher preparation programs. The preparation should go beyond awareness of bullying, but provide a variety of strategies for preventing, managing, and responding to bullying. This preparation should not be exclusively didactic, but provide future educators with the opportunity to practice the new skills by role playing and observation (Bauman et al., 2008).

Given the previously discussed findings on the importance of preparing preservice teachers to address bullying, a study of preservice teachers using a relatively new instructional strategy – cartoons – to teach about bullying was designed to provide firsthand experience in hearing about elementary students' bullying experiences and the opportunity to teach several lessons on this topic.

Teaching with Cartoons

Political cartoons have been successfully used to teach social studies concepts such as history and political science for many years (Dougherty, 2002; Risinger & Heitzmann, 2008). This instructional strategy motivates students through humor, wordplay, emotional and often exaggerated situations, symbolism, and interesting, creative drawings. Analyzing cartoons for humor and political or social studies concepts allows students to practice problem-solving skills, maintaining their attention because students want to discover the “jokes” or essential messages (Berk, 2002). Several investigations have been undertaken to find the best teaching strategies for assisting students in making political cartoons, such as making analogical or symbolic substitution lists and concepts maps of ideas before completing cartoons (e.g., Bickford, 2011). These strategies have resulted in students producing more complex social studies cartoons.

Using cartoon panels or comic strips at the start of a lesson to focus attention is a technique long in use for a variety of settings (Trefts & Blakeslee, 2000). However, teaching content information with cartoons is a newer technique that has been shown to be effective in teaching of science concepts (Rule & Auge, 2005; Rule, Sallis, Donaldson, 2008; Sallis, Rule, & Jennings, 2009) and discussing concepts related to gifted education programming (Rule & Schneider, 2009). Rule and Auge (2005) found in a counterbalanced study that elementary students studying rocks and minerals by analyzing cartoons featuring rock and crystal characters excelled in content knowledge and motivation with a large effect size compared to more traditional teaching methods. Besides analyzing the cartoons for humor and science content, students suggested improvements to the cartoons, completed partly-finished cartoons, and then made original cartoons of their own to show additional rock or mineral concepts.

The strategy of using cartoons was investigated for teaching about bullying in this study because this approach was found to be useful in presenting affective ideas about perfectionism to primary grade students (Zousel, Rule, & Logan, in review). The investigators of the current study thought that the humor and charm of visual cartoons and the opportunity to self-express through cartoon completion or creation would motivate elementary students. Therefore, we provided preservice teachers with cartoons for prompting conversations with students on bullying to give them practice in addressing this issue and the opportunity to reflect on the usefulness of this instructional tool.

Method

This study examined reflections of preservice teachers who were seeking endorsements in special education after instructing elementary students with special needs in small groups about bullying using a new cartoon curriculum. This was a qualitative study except for the tabulation of responses in each category.

Participants

Twenty-one undergraduate preservice teachers (20 female, 1male; 21 Caucasian) who were pursuing an endorsement in special education participated in this study. Fifteen of the participants were seeking endorsement for teaching children with high incidence (kindergarten – 8th grade) disabilities while the remaining six participants were seeking endorsement for low incidence or severe/profound mental disabilities (kindergarten – 12th grade). Each participant was enrolled in two methods courses, as well as a three credit practicum experience. The courses focused on methods of assessment and curriculum along with behavior management. The practicum involved spending 12 hours a week in a local classroom for a period of eight weeks. All of the participants were assigned to the practicum in pairs and were responsible for designing and teaching daily lessons to a group of 3-8 students. The preservice teachers seeking the severe/profound endorsement taught lessons in self contained special education classrooms and all children in their groups had IEPs. Conversely, the 15 participants in the high incidence program taught lessons in general education settings and groups consisted of children with IEPs, as well as students experiencing a variety of academic difficulties.

The data in this report reflect the ideas of the twenty-one participants. All participants gave written permission for their work to be included in this article. This study was approved by the Human Subjects Committee of the overseeing university.

Preservice Teacher Practicum Work and Reflection

Preservice teachers spent a total of 72 hours over the semester working with a partner from the course with a group of students, one or more who qualified for special education services, as explained previously. As part of this work, the college students were assigned to teach three short lessons (approximately 15 minutes each) on bullying that used cartoons. Preservice teachers were given a set of lesson plans with three pages of cartoons that conveyed information about bullying to discuss and a set of student

worksheets of partly-made cartoons including a blank area for the elementary student to construct his/her own cartoon. See the appendix for these cartoon lessons. After the preservice special education teachers had completed the lessons, they were asked to reflect on that experience. Preservice teacher responses to reflection questions were used in this analysis of the use of cartoons with elementary students in teaching about bullying.

The Cartoon Bullying Lessons

The sequence of the three lessons was designed so discussions would follow a logical unfolding of the topic. The first lesson defined bullying, the second lesson addressed what bullies do, and the third lesson brought to light ways to prevent or stop bullying. After reading and viewing the cartoons, preservice teachers engaged students in discussion. Finally, each lesson ended with the group making a cartoon together followed by students completing partly-finished cartoons or creating their own original cartoons.

The cartoons used in these lessons had been made by graduate students in an introductory gifted education course taught by the first author of this article, because gifted students, like special education students, represent exceptionality to more typical students and are often the target of bullies. The graduate students were provided backgrounds for the cartoons made from Microsoft clipart and drawing functions in PowerPoint software. They added captions, talking bubbles, and other details. These cartoons were revised by graduate student classmates and then edited by the course instructor, the first author of this article. Appropriate cartoons for elementary students were selected and assembled into three lesson sets for kindergarten-first graders, second-third graders, and fourth-fifth graders. Permission was obtained from the graduate students to use their cartoons in the study and to publish them so that others may benefit from their use.

Figure 1 shows one of the cartoons from the set for kindergarten through second graders. This cartoon uses a group of eagles initially picking on a small bird to show how one person standing up against the bully may be enough to cause a change in bullying behavior. Figure 2 shows a cartoon from the grades three to four set. This cartoon shows the negative consequences of ignoring bullying behaviors. Figure 3 is another cartoon from the grades three to four set, showing how body language can help deter bullies. Finally, Figure 4 is from the grades five to six set and shows how standing up for friends or classmates can stop bullying. All cartoons and a description of the lessons can be found in Rule, Logan and Kohler (2012).



Figure 1. Eagle cartoon



Figure 2. Cat Cartoon

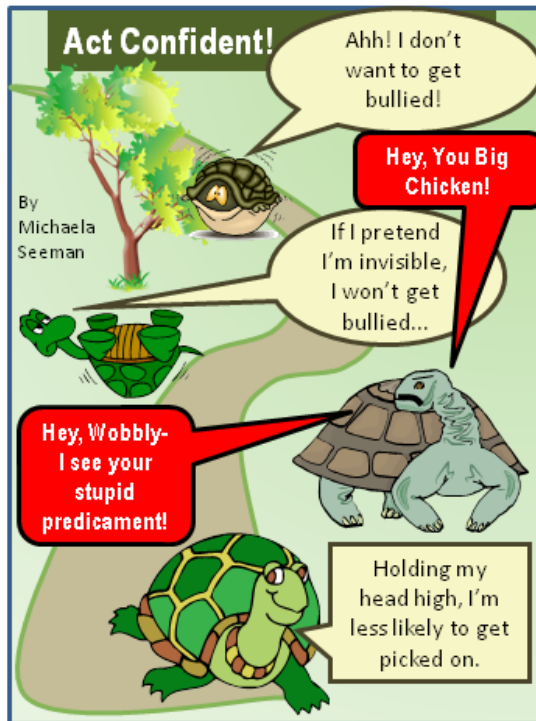


Figure 3. Turtle Cartoon



Figure 4. Friends cartoon.

The Reflection Questionnaire

The instrument used to collect reflection data from the participating preservice teachers contained eight questions. Most students were provided an electronic file of the questionnaire and worked with their partners to complete it, but a few completed theirs individually. The questions asked are listed here:

1. What evidence did you see that students did or did not find the cartoon activities engaging or motivating? Describe facial expressions, body postures, comments, etc.
2. What problems or issues did you encounter teaching the lessons that were related to the cartoon format or the topic of bullying?
3. What things would you change to improve this lesson or approach?
4. What advantages or disadvantages does the cartoon approach have compared to using a picture book or novel, a video; and role-play?
5. When you are a classroom teacher in a year or two, do you think you will use these cartoons to teach about bullying - why or why not? Give reasons.
6. What surprised you about the lesson?
7. What do you now think is particularly important that you did not perceive previously as so important?
8. What new information about bullying did you learn from the cartoons?

Results

Success of the Cartoon Lessons

The overall tone of the preservice teacher reflections was very positive toward teaching about bullying with cartoons. The main issue preservice teachers encountered was that some of the students with severe disabilities, especially those in kindergarten through second grade, struggled with the cognitive and emotional skills necessary to interpret the cartoons and react appropriately to the feelings of others. However, in most cases, progress was made so that, in general, the vast majority of students profited from the lessons.

Table 1 shows observations reported by preservice teachers of student engagement or lack of engagement during the cartoon lessons. The great majority of observations indicated that students were actively involved and motivated to participate and learn during the lessons as evidenced by eye contact, body language, facial expressions, volunteered discussion comments, effort in making cartoons, and immediate application of their learning through expressing concern for others. Only three students were observed to be disengaged; two had severe special needs or emotional issues, while a third was disengaged at first, but gradually became interested in the lesson.

Table 2 lists the problems or challenges that preservice teachers encountered when teaching the bullying lessons. Some issues were more related to the special population of children they were teaching than to the teaching strategy. For example, some students

with more severe cognitive impairment had difficulty reading and understanding the vocabulary used in the cartoons. Additionally, some students with social-emotional disabilities lacked understanding of the feelings of people being bullied. Preservice teachers also reported a desire to have more time for slower-working students and for discussion because students wanted to tell more of their experiences related to bullying. Some students needed to review possible concepts about bullying that might be portrayed in a cartoon before they were successful in making one.

Table 1. Reported Observations of Student Engagement in the Cartoon Bullying Lessons

Observation	Frequency
Eager to raise hands, said, “Oh! oh!” and waved hands high to gain attention.	11
Students kept eye contact and paid attention.	9
Shared feelings and experiences concerning bullying often without prompting.	9
Commented and discussed eagerly.	9
Students expressed excitement in drawing cartoons, adding details.	8
Volunteering to read the cartoons.	6
Students leaned toward the teacher or moved closer.	5
Student body language/ facial expressions changed in reaction to the tone of the cartoons or discussion.	5
Were able to explain the point concerning bullying of the cartoons	4
Students wanted to share cartoons with the group.	4
Students showed immediate application of the lesson by moving evenly between classmates to not make them feel left out for by apologizing for bullying.	4
Students spoke with emotion.	4
No students were playing with other items or messing around.	4
Some students disengaged from lesson because of severe special needs or emotional conflict.	3
Students focused attention on the pictures.	2
Some students understood the real life scenarios better.	2
Students laughed at the humor in the cartoons.	2
A student who was disengaged at first gradually became an active participant.	1

Table 2. *Problems Encountered during the Lessons*

Reported Problem	Frequency
Some vocabulary/ idioms/ phrases with multiple meanings were difficult for our students with cognitive difficulties	10
Students needed more ideas before they could make their cartoons - reviewing ideas about stopping and avoiding bullying helped.	5
Needed more time for the lesson because students wanted to discuss more	5
This topic is such a large issue - we did not always know how to respond to student questions	4
Our students had social difficulties and therefore had difficulty understanding and discussing bullying issues.	4
No problems or issues were encountered.	4
Make the cartoons larger so they will be more in focus when projected on a screen.	4
Difficult for many to control emotions when discussing bullying.	4
Students would rather discuss issues than make cartoons.	2
Fitting the lesson into a busy schedule	2

Preservice teachers' suggestions of ways the lessons could be improved are shown in Table 3. As already indicated by previous responses, many agreed that fifteen minutes was too short for the cartoon lessons; time should be extended to at least a half hour to allow students to fully discuss bullying issues. Because many of the kindergarten special education students had difficulty understanding the cartoons, those teaching these children suggested additional simpler cartoons for these students. Preservice teachers also suggested that other methods of teaching about bullying be used in addition to the cartoons.

Table 3. *Ways to Improve the Lessons*

Suggested Improvement	Frequency
Have more time for the lessons: 30 minutes rather than 15.	15
Have simpler cartoons and alternate activities for kindergarten special education students.	9
Combine with other activities such as writing a play about bullying or watching a video.	9
Make sure each student has a copy of the cartoons or make the original larger for clearer projection	8
Start the lessons by defining bullying and asking "Who has ever been bullied?" and "Who has ever been a bully" so that students see how common this problem is.	6
Show additional bullying situations in the cartoons and what students should do.	5
Teach these lessons to the general classroom population, rather than just students with special needs.	2
Present the lesson early in the year so that student bullying and meanness is prevented.	2
Have detailed directions for teaching the lessons.	2

Advantages and disadvantages of teaching about bullying with cartoons identified by preservice teachers are shown in Table 4. These college students recognized the advantage of using cartoons for attention-getting, short lessons on this topic. They also appreciated the literacy skills practiced in using cartoons and their highly visual, often humorous nature. Although they thought videos might be more engaging and show reality better, and although children's books may have more appealing illustrations and a more in-depth story, they expressed that cartoons should be added as an effective strategy for teaching this topic.

Table 4. *Preservice Teacher Views of Advantages and Disadvantages of Using Cartoons to Teach Bullying*

Advantage or Disadvantage	Perception	Frequency
Advantage	Cartoon lessons can be short and effective, allowing students to maintain attention.	21
Advantage	Students practice literacy skills of reading and speaking when they use expression in reading the cartoon captions and talking bubbles.	6
Advantage	Non-readers can gain understanding from the visual nature of cartoons.	6
Advantage	Students generally feel more comfortable reading and writing cartoons than acting roles in front of peers.	6
Advantage	Students can be creative when they make their own cartoons.	4
Advantage	Making cartoons allows students to work at own pace and self-express feelings.	4
Advantage	Discussing the cartoons and showing cartoons being made was very interactive but still under control.	4
Advantage	Cartoons incorporate humor, which motivates students.	3
Advantage	Cartoons are a new and novel resource for teaching.	3
Advantage	Having animals in the cartoons allows very volatile issues to be discussed through a more distant situation.	2
Advantage	Easier to provide multiple copies of a few pages of cartoons than books.	2
Disadvantage	Videos may be more engaging as they have music and action.	15
Disadvantage	Role play may allow the student to better internalize the issues and feelings	14
Disadvantage	Picture books may have better illustrations and more graphic detail.	11
Disadvantage	Picture books show a continuous story while cartoons are only scenes of many different stories.	7
Disadvantage	Books are easier to read and interpret than cartoons.	4
Disadvantage	Videos may show more situations.	2
Disadvantage	Videos may be more realistic and better show the feelings involved in bullying.	1

It came as no surprise, then, that a strong majority of preservice teachers stated that they planned to use these cartoon lessons themselves when teaching students in their future classrooms, as shown in Table 5. They expressed that they had positive results teaching these lessons and felt very comfortable using them again. The highly interactive nature of the lessons was valued, along with the visual nature, humor, and creative cartoon-drawing activity. College students who thought they would probably not use them were those who taught younger students with severe cognitive and social-emotional impairments.

Table 5. *Preservice Teacher Responses to, “When you have your own classroom, will you use these cartoon lessons to teach about bullying?”*

General Response	Reason Given for Response	Frequency
Yes	I had good results with the cartoon lessons and am comfortable using them.	12
Yes	The lesson encourages interactive discussion about bullying.	10
Yes	Students enjoy drawing and creating cartoons to tell how they feel.	6
Yes	These cartoon lessons reinforce ideas about respect and the feelings of others that I want to teach.	6
Yes	Important information about bullying, such as cyber-bullying, was relayed by the cartoons.	6
Yes	The animals in the cartoons were appealing and allowed students to discuss issues through animals without enraging others.	4
Yes	I would use cartoons as a part of multiple approaches and ways of teaching about bullying	4
Yes	The visual nature of the cartoons was effective.	3
Yes	The humor and cartoon characters of the cartoons are motivating.	3
Yes	The levels of the cartoons were appropriate and useful.	3
Yes	Students enjoy drawing and creating cartoons to tell how they feel.	1
Yes	I would choose different cartoons with people as characters.	1
Partly	We would use cartoons as part, but not the entire lesson.	3
No	Students who are very young and have severe special needs may not be able to read or understand the cartoons.	11
No	Would use something more kinesthetically active like role-play.	2

Preservice Teacher Insights Concerning Teaching about Bullying

Table 6 reveals the aspects of the lessons that surprised preservice teachers. The most frequently reported surprise was the awareness and experiences of elementary students with bullying. Many preservice teachers stated that they expected students to be unfamiliar with the topic and to have few experiences being bullied. Several remarked that even kindergarten students with special needs knew what bullying was and reported having been bullied; some second graders knew what cyber-bullying was; and fifth graders were aware of the recent deaths of students related to bullying that were reported in national news stories. The high level of student interest in the topic caught them off guard.

Table 6. *Preservice Teacher Responses to: "What Surprised you about the Lessons?"*

Aspects that Surprised Preservice Teachers	Frequency
Students gave many personal examples of how they or a relative had been bullied.	17
The level of student interest in the topic and less was a lot higher than expected.	6
Most students pledged to help stop bullying and identified ways to do this.	4
Even though the teacher had told us the students with which we worked had been bullies to others, these students only talked about how they themselves had been bullied.	4
Even kindergarten students with special needs knew a lot about bullying and demonstrated learning at the close of the lesson.	4
The number of students using the example cartoons and half-completed cartoons in their work rather than creating new original cartoons.	2
Second graders already knew about cyber bullying.	2
Our students, who usually have behavior problems, behaved very well during the lessons.	2
Fifth grade special education students knew about the recent deaths of students nationwide because of bullying.	2
A student became very emotional when the topic of bullying was brought up.	2
One of the boys said that if he saw somebody getting bullied, he would punch the one who started it. He didn't see the connection that punching may also be bullying.	1
The statistics about how prevalent and damaging bullying is were surprising.	1

Related to the ideas expressed in the previous paragraph, preservice teachers most frequently commented that what they now perceived as important was teaching students about bullying at a young age and near the start of the school year to set the tone for mutual respect in the classroom and to prevent or halt bullying behaviors. They commented that cartoons can be an effective strategy for teaching about bullying that may be used in concert with other methods. Preservice teachers also evidenced a greater understanding of the causes of bullying and the insight that stopping it will involve continued effort.

Table 7. *Preservice Teacher Responses to What they Now Perceive as Particularly Important*

Aspect Now Perceived as Particularly Important	Frequency
Take the time to teach about bullying and stop any bullying before it gets worse.	12
Using cartoons to teach is an effective strategy that can add variety to teaching.	5
Discussing bullying can have a positive effect on student behaviors in the classroom	4
Some kids continue to bully even when they know how it hurts others and that it is wrong.	4
Bullying needs to be addressed at a young age because there is much more bullying occurring with young children than we thought.	3
It is important to talk about cyber bullying and identify it as bullying before students begin to do it.	2
Some children bully others because they are bullied at home or at school.	2

The final reflection question asked of preservice teachers, “What new information about bullying did you learn from the cartoons?” drew responses reiterating many of the concepts already discussed such as the new awareness that most young students have already experienced bullying, their willingness to divulge their experiences, and the positive effects of classroom discussions of bullying. See Table 8. They also reported learning new information about the prevalence and devastating consequences of bullying and ways it is perpetuated or halted. Finally, several reported that they learned the new effective teaching strategy of using cartoons.

Table 8. *Preservice Teacher Responses to: “What New Information did you Learn through Teaching these Cartoon Bullying Lessons?”*

New Learning	Frequency
Learned surprising statistics about the prevalence or damage caused by bullying.	7
Most people have been bullied and have been bullies.	5
Most students were eager to share what bullying is and the different ways it can happen.	4
Important to teach people to stand up for themselves and friends and tell the teacher about bullying.	6
Bullying hurts feelings and bodies and can lead to depression.	6
Some students do not tell on bullies because of fear of reprisals.	4
An environment of equity including the golden rule prevents bullying.	4
I learned that cartoons can be effective in the classroom.	3
Some students don't make the connection that hurting the person who is bullying may also be bullying.	2
Cyber-bullying should be addressed at an early age.	2
Confident children are less likely targets for bullies.	2

Conclusions and Recommendations

The cartoon curriculum was enthusiastically received by the majority of elementary-age special education students and peers along with the preservice teachers who taught them. The exceptions were preservice teachers instructing kindergarten through second grade students with severe cognitive or social-emotional disabilities. Nevertheless, it should be noted that at least one positive comment was always given by all participants regarding the use of cartoons for teaching this topic.

Through this teaching experience, preservice special education teachers became more aware of the pervasiveness of bullying in our schools and homes, the eagerness of students to discuss and find solutions for their experiences, and the positive outcomes for

student behavior of such lessons. Therefore, we recommend these lessons for special education students with mild disabilities and for elementary students without disabilities.

Preservice teachers also noted the efficacy of the cartoon format for teaching bullying concepts to elementary students, particularly noting the short time frame of lessons and the motivation of students. However, they also noted that other modes of lesson delivery such as bibliotherapy, role-play, and videos have positive aspects. Therefore, we recommend that these lessons be taught in combination with other lesson delivery strategies to provide variety.

Third, because so many young students reported to our preservice teachers their bullying experiences and because the lessons promoted an atmosphere of respect and equity in the classroom, we recommend that teachers not wait until upper elementary or middle school to discuss these issues. Our preservice teachers reported positive effects in student interactions after the bullying lessons. We hope that practicing classroom and special education teachers will use these lessons in discussing this important social issue.

A concluding note comes from the third author, who is a professor teaching the special education classroom management and methods course for preservice teachers. After reviewing the results of this trial of cartoon bullying lessons reported here, he has decided to incorporate three cartoon bullying lessons as a permanent part of his course for the following reasons:

- Bullying is one of the most pressing and pervasive current school problems (Carney & Merrell, 2001): preservice teachers need experience addressing it through lessons during a practicum experience (Bauman et al., 2008).
- The data presented here suggest that the cartoon format, as found in other studies (i.e., Rule & Auge, 2005) was effective for facilitating discussions with elementary students and for causing preservice teachers to reflect on their work during the lessons, gaining important insights.
- Just the younger elementary students (kindergarten through grade 2) with severe disabilities seemed not to benefit from the lessons. Older students with severe disabilities were able to understand and participate in the lessons. Students with mild disabilities and their typical peers appeared to benefit substantially from the lessons.

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Special Educator Evaluation: Cautions, Concerns and Considerations

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Abstract

There is currently little consensus on how special education teachers should be evaluated in a way that is effective, fair and responsive to their unique teaching responsibilities. In this paper, we explain several of the current approaches to teacher evaluation under consideration, and then provide an overview of the challenges associated with the use of these models for special education teachers. We describe a model currently under development that is designed to better meet the unique characteristics of special education teacher evaluation. Our alternative approach proposes to evaluate special education teacher effectiveness through two primary components: observations of the special educator's use of research-based instructional practices, and the resulting student outcomes reported through effect sizes on measures aligned with relevant student goals.

Special Educator Evaluation: Cautions, Concerns and Considerations

The purpose of special education is to provide individualized instruction to meet the needs of a heterogeneous group of students with disabilities. Students served through special education often have the most intense instructional needs, and require specially designed instruction; meeting the needs of this group of students is extremely challenging and requires teachers who are highly skilled. Unfortunately however, students with disabilities are more often served by a special education teaching force that is highly subject to attrition and turnover (Billingsley, 2004; Boe, Cook, & Sunderland, 2008; Connelly & Graham, 2009). Additionally, special education is consistently indicated as a high demand field, with positions filled by teachers who lack adequate preparation to meet the demands of the job (Boe et al., 2008). These factors impact student outcomes – nationally, as few as 30% of students with disabilities are able to meet performance standards (Cortiella, 2011) and post-school outcomes for students with disabilities are not encouraging (U.S. Department of Education, 2011).

To improve the outcomes for students with disabilities, the instructional practice of special education teachers must be improved. Fortunately, the past three decades of special education research have produced a foundational body of knowledge on the use and application of evidence-based instructional practices. However, while arguably no other content area in education has produced more instructional practice research than

special education, the profession itself has made little progress in putting these techniques into practice. Improving special education teacher practice requires a systems-level change that includes providing stronger teacher preparation, improved working conditions, and evaluation systems that focus on measuring instructional practice and supporting teachers in performance improvement (Johnson & Semmelroth, in press). The focus of this paper is on the last component, designing evaluation systems for special education teachers that reliably identify those teachers who are effective, and identifying ways to support the professional development of those who are not, in order to improve student outcomes (Danielson, 2010; Johnson & Semmelroth, in press).

Value-Added Models (VAM): The current approach to teacher evaluation

Within the past three years, 32 states have changed their policies regarding teacher evaluation, and approximately 20 states and the District of Columbia now focus heavily on using student achievement as a primary component of their systems (National Center for Teacher Quality, 2011). The Race to the Top (RTT) state applications, in tandem with *A Blueprint for Reform: The Reauthorization of the Elementary and Secondary Act* (U.S. Department of Education, 2010), were the primary catalysts prompting this policy focus on defining teacher effectiveness through student performance. The most well-known approach for incorporating student outcomes as a primary feature of teacher effectiveness is the value-added model (VAM). VAMs define a relationship between teacher effectiveness and student academic achievement through weighted statistical formulas that incorporate values from a variety of measurements including teacher observation scores, student achievement scores, student/parent surveys, and other factors (Kane & Staiger, 2012). VAMs attempt to account for the multiple factors that may impact student achievement (Scherrer, 2012), and are thought to help answer the question of how effective an individual teacher is at promoting student growth. However, critics argue that VAMs suffer from numerous methodological and philosophical flaws (Newton, Darling-Hammond, Haertel, & Thomas, 2010), and do little to ensure teacher quality or promote professional development, as an effective evaluation system should (Danielson, 2010). This is especially true for special education.

As VAMs become more prolific in teacher evaluation systems, many questions surrounding their application to special education teachers are surfacing (Armario, 2012). These questions relate to issues of effectiveness (i.e. is it a useful way to measure special education teacher effectiveness?) and fairness (i.e. does it capture the salient features of effective special education teaching and the individualized nature of services and outcomes?).

What are value-added models (VAMs)?

The value-added model is defined as “a collection of complex statistical techniques that use multiple years of students’ test score data to estimate the effects of individual schools or teachers” (McCaffrey, Koretz, Lockwood, Hamilton, 2003, p.11). Because of the complexity of this technique, value-added modeling can appear in different forms. Value-added modeling generally refers to a class of models, also referred to as value-added

assessment, that use a range of assumptions to measure an individual teacher's effects on an individual student's performance and growth on standardized measures over time. The assumptions made within a particular VAM include whether teacher effects can be measured at the individual, school or district level, and whether student outcomes include only students the teacher directly instructs, or a more broadly defined group of students (McCaffrey, et. al, 2003). A teacher's ranking in a VAM system is dependent on whether students meet, exceed or fail predicted achievement on state assessments, and a teacher is considered to be *effective* if his/her students perform better than predicted on state assessments, and less effective if most students fail to make predicted gains.

One of the most common value-added approaches relies on vertically equated, developmental scales that measure the same constructs across all grade levels (Martineau, 2006). A vertically equated scale assumes that the teacher has had a constant effect on all students relative to other teachers in the system, which results in a measured effect that is an approximation of a teacher's average effect on students in the population that are likely to be in the teacher's class (McCaffrey, Lockwood, Koretz, Louis, & Hamilton, 2004). Critics question the validity of this approach because it assumes a teacher's impact is immediate, and of a pre-determined and fixed duration (Martineau, 2006).

Value-added measurement issues within special education

The assumptions made in VAM systems are especially concerning when examined through the lens of special education services. Special education teachers typically serve students across a range of grades and settings for varying amounts of time and for various purposes, and in other instances, some students with disabilities receive instruction from the same team of special education teachers and paraprofessionals for multiple years. Other students receive direct instruction provided by a paraprofessional who is supervised by a special education teacher. Some students with disabilities are not directly taught by a special education teacher, however, that teacher may provide consultant services to the general education teacher that impact that student's performance. These distinctions immediately complicate decisions regarding what percentage of student growth should be allocated to identifying particular teacher effects. Additionally, students receiving special education services may have their assessment data excluded from accountability formulas, or may participate in a non-standardized alternate assessment. Thus, the two most important components of a VAM, teacher effect and student performance, cannot universally be quantified in special education.

Challenges of teacher evaluation within special education

In addition to the issues with VAM above, there are several constraints that further complicate the development of a special education teacher evaluation model. The primary challenges include the lack of prepared special education teachers entering the field, the heterogeneity of the contexts and settings under which special education teachers work, the heterogeneity of the population they serve, and the individualized nature of determining appropriate student goals and learning trajectories. We briefly review these challenges below.

Lack of prepared special education teachers. Holdheide, Goe, Croft, and Reschly (2010) identified systemic challenges uniquely associated with special education teachers and evaluation systems, including: a) special education is a high demand field, with many positions either vacant or filled with unqualified personnel (Billingsley, Fall & Williams, 2006; Boe & Cook, 2006; McLeskey, Tyler & Flippin, 2004); b) special education teachers are typically not highly qualified in the core content areas they teach (McLeskey & Billingsley, 2008); c) special education teacher preparation programs do not often integrate the use of evidence-based practices, thus leaving new special education teachers ill-prepared to meet the challenges of the special education classroom (Reschly, Holdheide, Smart & Oliver, 2007; Walsh, Glaser & Wilson, 2007). These types of issues speak to the need for an evaluation system that focuses on the use of effective instructional practices and provides feedback to special education teachers so that they can work to improve. In the words of Darling Hammond (2011), “we can’t fire our way to [effective teaching]”, and should therefore consider approaches to evaluation that emphasize continuous improvement and professional development.

Heterogeneity of special education teaching contexts. As noted earlier, special education teachers operate within a variety of contexts and assume a variety of roles. Parsing out the amount of impact on the performance of students served under collaborative, inclusive, resource or extended resource models is guesswork at best. While some argue that a percentage can be allocated based on the time a student is served in various settings (e.g. 80% in general education, 20% in special education), the validity of this approach is questionable. Unless the idiosyncratic nature of special education service delivery is adequately addressed, significant psychometric issues (i.e., reliability of student achievement scores) could undermine the use of VAM in special education.

Determining appropriate student outcomes, goals and trajectories. In addition to the context variability, the students served in special education reflect a very heterogeneous population. Even when students present with similar needs, they may function at vastly different performance levels. Depending on their baseline performance, their opportunities to learn, and the severity of their disability, students with disabilities will experience very different growth rates and consequently, meet very different outcome targets. Of the three factors related to outcomes for students in special education: a) baseline performance, b) opportunities to learn, and c) severity of disability; the only factor over which a special education teacher has control is opportunities to learn. The special education teacher’s role is to be knowledgeable about the appropriate practice to meet the needs of that particular student, and to be able to design and implement an instructional plan that will support the academic, social and emotional needs of that student.

Using student outcomes to define special education teacher effectiveness requires first being able to identify 1) what kind of student growth *measure* to use and 2) how much student growth to expect. Growth rates for students with disabilities are typically not consistent, and there is evidence that suggests that students with very low initial performances often experience the least growth even when exposed to evidence-based

instruction (Coyne, McCoach, Loftus, Zipoli, Ruby, Crevecoeur, & Kapp, 2010; Wei, Blackorby, & Schiller, 2011). This suggests that models of teacher evaluation that rely on student outcome measures or on a standard growth rate metric (i.e. VAM) may not be valid for special education.

There are clear measurement challenges to addressing both of these issues. The first challenge, defining what kind of student growth to use, is confounded because of the heterogeneous populations typically served in special education. Even small groups of students typically present a significant spectrum of academic, social, and behavioral needs. For example, an extended resource room might serve students representing a range of disabilities including cognitive impairment, autism, behavioral disorders, and other health impairments. Two students might be placed in the classroom with the same exceptionality, e.g. cognitive impairment, but might vary widely in their academic, functional, communicative, and social interaction skills. This variation in student needs makes it difficult to select one student outcome measure that best “fits” a particular exceptionality, student group, or even classroom.

Even if one student outcome could be identified as addressing the needs of all students in a special education classroom, the next perplexing step is to define how much academic growth is considered adequate. Assuming all targeted growth across students to be linear and consistent as represented by specific points on a vertical scale is naive. Differentiation in special education is based upon the notion that each student will achieve academic, social and behavioral growth at their particular pace depending upon factors typically beyond the control of the teacher.

Noting the twin challenges of determining 1) what student outcome measure is most appropriate, and 2) how much student growth is considered adequate for students with disabilities, illustrates the disparity between the necessary and sufficient conditions required by a teacher evaluation model such as VAM and some of the realities of special education. Given the unanswered measurement questions regarding how to define special education teacher effects and student performance, how can special educator teachers be evaluated fairly and effectively? Below are our considerations and suggestions for an alternative approach.

Examining effective instructional practices and student response to instruction

To summarize the discussion thus far, the two primary components of VAM: a) teacher effect and b) student outcomes, pose unique challenges within the field of special education that limit the validity of value-added models as a fair and effective special education teacher evaluation approach. Additionally, macro-level challenges in special education teacher training, recruitment and retention have resulted in a high percentage of underprepared special education teachers working in a challenging field that has been identified as a critical shortage area in many states.

These considerations require an alternative means of evaluating special education teacher effectiveness that focuses on increasing the use of evidence-based practices for students

with disabilities, and through the use of effective instruction, improving student outcomes. In their article discussing what hinders the effectiveness of special education, Heward & Ohio (2003) note the biggest reason we do not teach more children with disabilities better than we do is “not because we do not know enough but because we do not teach them as well as we know how” (p. 201). Considerations of fair and effective special education teacher evaluation systems must be based on the systematic measurement of the implementation of evidence-based practices to support the needs of students with disabilities (Johnson & Semmelroth, in press). Additionally, the measurement of student outcomes as related to the use of research-based practices must be included, and must also be flexible enough to capture the diverse needs of the heterogeneous special education population (Johnson & Semmelroth, in press). Improving outcomes for students with disabilities is the central purpose of such a system (Holdheide, 2012).

Therefore, we propose the following approach to evaluating special education teachers and offer some of the preliminary findings of our pilot work in its development. An effective special education teacher evaluation system that will lead to improved teaching practice and to improved outcomes for students with disabilities, is one that will: 1) reliably discriminate between effective and ineffective special education teachers, 2) measure and provide targeted, specific, corrective feedback for teacher instructional practice, 3) include the use of individualized student growth rates to define teacher effectiveness, and 4) be responsive to the variety of contexts in which special education teachers work. Over the last two years, we have worked on the development of a system grounded in these four principles, called the Recognizing Effective Special Education Teachers (RESET) observation tool.

The RESET observation tool is designed to evaluate instructional practice, provide feedback to special education teachers about the quality of their instruction and ultimately, improve the outcomes for students with disabilities (Johnson & Semmelroth, 2011). RESET is a computerized evaluation system that relies on the use of video capture of instruction which is then evaluated by a trained observer, using clearly specified criteria that align with the research-identified characteristics of effective instruction for students with disabilities (Johnson & Semmelroth, in press). Special education teachers evaluated under this system receive feedback on the specific dimensions of their teaching according to criteria derived from the research on effective instruction for students with disabilities. Additionally, individualized student growth measures are included as an indication of the special education teacher’s effectiveness. Much of the work is preliminary, and below we describe the current status of RESET’s development and validation studies.

Evaluating effective instruction. To evaluate instructional practice, we have created scoring criteria for several evidence-based instructional practices. The process of identifying evidence based practices began with current published reviews of effective practice, such as those published in the special issue on Evidence-Based Practices in Special Education (see *Exceptional Children*, 2009). Identification of other evidence-based practices was patterned on the review process described by Chard, Ketterlin-Geller,

Baker, Doabler, & Apichatabutra (2009). A significant portion of the review of evidence-based practices has been conducted to inform the pilot development of RESET (Johnson & Semmelroth, in press; Johnson, Semmelroth, & Beymer, 2012). From this review, the characteristics of effective instructional practice are specified to create the items used to evaluate a special education teacher's practice. Once these characteristics are defined by each evidence-based instructional practice, an evaluation rubric is created and used to assign scores to the observation of special education teachers delivering instruction.

Reliability. Our initial reliability studies examining the extent to which two independent raters can agree on evaluating a video capture of specific instructional practices are encouraging. We were able to achieve correlations in the moderate range across several of our criteria in pilot studies examining inter-rater reliability (Johnson & Semmelroth, in press), and in a more recent pilot study using revised rubrics, achieved correlations in the moderate to large range. Our next steps include further work to improve the reliability coefficients through more clearly defined criteria, and improved training for evaluators. Additionally, we are continuing to expand the range of evidence-based practices and related scoring criteria so that the RESET tool will be appropriate for use across more instructional contexts and settings.

Validity. Measures of student growth will be an integral component of RESET. For each of the evidence-based practices identified, a corresponding range of effect sizes reported in the research is noted. As we collect data on instructional practices, we are also collecting student growth data from participating special education teachers with the intent of determining whether special education teachers who implement evidence based practices with fidelity are able to report growth levels consistent with those reported in the research. We anticipate that high levels of fidelity of implementation of an instructional practice should correspond with high levels of student growth. Because we are using a measure of effect size, we are able to evaluate data across multiple measures, which addresses the need for a consistent yet flexible indicator of growth for students with disabilities.

Finally, we are also collecting data to examine change in teacher performance over time. To accomplish this, we are conducting a study in which special education teachers are randomly assigned to a treatment or control group. In the treatment group, teachers will have their instruction evaluated using the RESET tool, and will be provided the results of their evaluation. Teachers assigned to the control group will be evaluated, but results will not be shared. Then, improvement over time will be examined to determine the extent to which the feedback from the observations impacts teaching performance. This type of data will provide important information on the extent to which RESET acts as a means of improving instructional practice.

Conclusion

While there is general consensus that teacher evaluation systems are an important component of improving instructional practice, there is little consensus on how best to design a system that is fair and effective for special education teachers. Special education

poses unique challenges to teacher evaluation that current approaches, such as VAM, do not adequately address. In order to address the challenges of special education teacher evaluation, we must consider an evaluation tool that can 1) reliably discriminate between effective and ineffective special education teachers, 2) measure and provide targeted, specific, corrective feedback for teacher instructional practice, and 3) include the use of individualized student growth rates to define teacher effectiveness. We recognize that ongoing research is necessary to refine the RESET tool. Ultimately, though, tools such those developed through RESET and similar initiatives that focus on instructional practice, may be a primary means of helping students with disabilities maximize their potential because special education teachers are being supported in reaching their full potential.

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Working Together for Learning Together: Supporting Students and Teachers with Collaborative Instruction

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Abstract

Professional educators are called upon to provide effective instruction to student populations that increasingly consist of multiple cultures, languages, and ethnic backgrounds. Based on current special education law, schools are working toward establishing more collaborative cultures by stressing partnerships between general and special education teachers, which often includes initiating inclusive practices such as co-teaching. This article reviews the professional literature regarding the inception of inclusive practices and the factors that influenced this concept in the field. Particularly, skills for collaboration and the practice of co-teaching are examined in the context of the developing trend toward more collaborative interactions in school setting.

Working Together for Learning Together: Supporting Students and Teachers with Collaborative Instruction

Implementation of inclusive practices is growing in importance (Friend & Shamberger, 2008; Idol, 2006; Scruggs, Mastropieri, & McDuffie, 2007). However, the concept of including students with disabilities to be educated alongside their peers without disabilities has been in existence for decades, albeit with both early and, sometimes continuing resistance (Reeve & Hallahan, 1994; Connor & Ferri, 2007; Zigmond, 2001). At the same time, professionals increasingly are recognizing the key role that collaboration plays in reaching the educational standards that characterize contemporary education. However, like inclusion, collaboration is a complex endeavor that evokes controversy (Friend, Cook, Hurley-Chamberlain, & Shamberger, 2010).

The purpose of this article is examine the development, current trends for, and disagreements surrounding both inclusive practices and co-teaching and to analyze how the synergy between these two significant educational trends can either lead to improved outcomes for students with disabilities or prevent students from reaching their potential. The intent is to highlight how the field of education has an obligation to address these two critical trends in policy, professional preparation, and practice.

Understanding Inclusive Practices

Until the middle of the 20th century, classrooms consisted mostly of students who shared similar racial, ethnic, and cultural backgrounds with each other and their teachers (Kode, 2002). Further, according to Ferri and Connor (2006), before P.L. 94-142 was passed in 1975, roughly four million children in need of special education services were denied adequate school support and nearly a million others were excluded from school altogether. That exclusionary thinking ultimately resulted in two separate education systems – general education and special education (Skiba, Simmons, Ritter, Gibb, Rausch, Cuadrado, & Chung, 2008).

Early Influences

To a large degree, the civil rights movement influenced parents and advocates of children with disabilities in their struggle to end the practice of excluding their children from public education (Markel & Greenbaum, 1979). Proponents wanted children with special needs to receive their education alongside their typically developing peers (Friend & Shamberger, 2008). As a result of increasing demand for schools to include children with disabilities, the long-standing pattern of educational separatism and inequity began to change through the 1950s and 1960s (Kode, 2002). For example, in 1954 the landmark case of *Brown v. Board of Education of Topeka, Kansas* established that separate educational facilities were inherently unequal for African American students and therefore deemed unconstitutional. One year after that decision, in 1955, the first study was conducted that raised questions regarding whether separate education for students with disabilities was producing desired student achievement outcomes (Blatt, 1958). That research sparked a series of studies and influential articles by researchers and school reformers during the following 10-year period that increasingly questioned the effectiveness of segregating students with disabilities as a way to provide education (e.g., Dunn, 1968; Goldstein, Moss, & Jordan, 1965), at first under specific conditions and referred to as mainstreaming but eventually evolving to today's broader concept of inclusion.

Foundational Law and Court Cases

During the 1960s, the civil rights movement continued to fuel grassroots activism that characterized society during that time. The work of parents and advocates ushered in sweeping change regarding how the educational system treated students with disabilities. For example, the Federal government intervened in exclusionary school practices by signing P.L. 94-142 into law in 1975, which mandated that in exchange for federal funds, states must provide a free and appropriate education for all eligible students with disabilities (Yell, Katsiyannis, & Hazelkorn, 2007). Now commonly known as IDEA, P.L. 92-142 and its subsequent reauthorizations solidified the foundation of inclusive education. Its far-reaching implications helped establish the blueprint for how special education should operate in schools, especially regarding the rights of students with disabilities to be educated in the least restrictive environment, most frequently alongside

their typically developing peers (Winzer, 1993).

Throughout the 1970s and 1980s, despite the new special education law, schools often fell short of parents' expectations for the inclusion of their children with disabilities in general education classrooms (Winzer, 1993). A decade after P.L. 94-142 was signed into law, a few schools were slowly changing and allowing students with significant disabilities to be educated in general education settings. The practice was called inclusion (Kluth, Villa & Thousand, 2001/2002). However, the increase in students served in general education classrooms and resource rooms from 1977-1990 was miniscule; conversely, the decrease in the number of students with disabilities served in separate classes, schools, or similar facilities were negligible (Karagiannis, Stainback, & Stainback, 1996). Eventually, families turned first to due process hearings then sought out the Office of Civil Rights for quicker court involvement and more satisfactory results (Winzer, 1993).

The courts responded favorably to parents' wishes with several major decisions supporting the inclusion of students with disabilities in the general education setting (Friend & Shamberger, 2008). For example, in the 1983 case of *Roncker v. Walter*, it was argued that assigning students to specific programs and schools based on disability was not in the students' best interest. The ruling favored inclusive settings over segregated placements and established a *principle of portability*. In the *Roncker* case, the court found that districts must make placement decisions based on individual student needs. To do otherwise violated federal law (*Roncker v. Walter*, 700 F.2d 1058 (6th Cir.) at 1063, cert. denied, 464 U.S. 864, 1983).

Another favorable case was that of *Oberti v. Board of Education of the Borough of Clementon School District* (1993). A U.S. circuit court ruled that the family of Raphael Oberti, a student with Down syndrome, did not have to prove that he could function in the general education setting. Instead, the burden of proof was on the district to prove why he should not be included in the general education classroom with the appropriate aids and services including professional development for faculty and staff (*Oberti v. Board of Education of the Borough of Clementon School District*, 789 F.Supp. 1322 D.N.J., 1992). A case with similar implications involved a student with an intellectual disability. In *Sacramento City Unified School District v. Holland* (14 F.3d 1398, 994), the 9th Circuit Court made it clear that the presumed setting and starting point for all placement decisions regarding students with disabilities is the general education setting. The burden of proof as to why a student cannot participate in the general education setting is the responsibility of the school district. In order for a student to receive his or her education outside of the general education setting, documentation is required as to why that placement would be better than the general education setting (Friend & Shamberger, 2008).

Controversy over Inclusive Practices

Providing students with disabilities a free and appropriate education in general education settings has been heatedly debated for decades (e.g., Eisenman & Ferretti, 2010). Issues

include those related to (a) educating students with disabilities in the general education classroom without negatively affecting the education of typical peers, (b) roles and responsibilities of general and special educators and other related services professionals in the classroom setting, and (c) equal and/or equitable access to the general curriculum with full and welcome membership in the classroom for students with disabilities (Ferretti & Eisenman, 2010; McLaughlin, 2010).

These controversies began almost as soon as mainstreaming debuted as an educational practice, but they have escalated in the twenty-first century, primarily because of the seeming misalignment of the core tenets of IDEA and the Elementary and Secondary Education Act (ESEA, formerly called the No Child Left Behind Act). Specifically, the requirement that nearly all students, regardless of disability, are held to the same standards of proficiency on high-stakes testing in some ways seems to run counter to the provisions that ensure students with disabilities receive individualized instruction to meet their unique educational and social needs (McLaughlin, 2010).

Beyond the classroom, controversy about inclusive practices extends to families and communities. For example, researchers continue to better understand the social and cultural factors associated with educating students with disabilities. Do some families prefer a separate education? How should school professionals respond when families from some cultures are not particularly concerned with the goal of independence that often characterizes inclusive settings? Further, researchers, policy makers, and professionals in schools continue to analyze what type of teacher preparation is most effective in producing teachers who can ensure academic achievement of the diverse students in today's schools (Eisenman & Ferretti, 2010).

The Need for Collaboration in Educational Settings

For several decades, school reform initiatives, bolstered by federal mandates, have prompted greater emphasis on developing highly collaborative school cultures. This trend is not surprising: Schools are merely reflecting comparable trends that already are well-documented in other disciplines such as industry, medicine and mental health, all of which have modeled the idea that more can be accomplished by collegial partnerships and teams that work together toward common goals than by individuals laboring alone (Hansen, 2007). Further, the increasing diversity among students in schools has made it clear that any single teacher is unlikely to be able to address the complex needs of those learners. Finally, collaboration gradually has become a vehicle in schools for problem solving about student issues, increasing teachers' skills, and managing school operations (Friend & Cook, 2013). Ultimately, students with disabilities are included more often in the general curriculum and classroom, general and special educators are expected to work together collaboratively. Experts prioritize school collaboration in order that these students can receive more comprehensive instruction as a result of professionals sharing goals, planning, and instructional responsibilities (Brownell, Adams, Sindelar, Waldron & Vanhover, 2006).

Defining Collaboration

At the same time that collaboration is being urged among educators, confusion exists over what exactly constitutes collaboration in school settings (Paulsen, 2008). Some professionals refer to any work on a specific project or goal with others as collaboration, while others mistakenly consider it collaboration when a few vocally strong group members persuade less vocal colleagues to go along with their agenda. Friend and Cook (2013) define collaboration as a style of interpersonal interactions that exists between at least two parties having equally valued contributions and sharing in the decision-making process and accountability necessary to reach a common goal. They also emphasize that school personnel who adopt this style of interaction prioritize effective communication, active listening, problem solving and teaming in order to strengthen and maintain dynamic professional relationships.

Controversy Related to Collaboration

Although intuitively appealing—who could argue against professionals working together?—collaboration is not always easily accomplished. Much of the controversy related to it is a direct result of the rising expectation for inclusive practices (Frattura & Capper, 2007). The prospect of educating students with disabilities in a general education classroom alongside typically developing peers is often overwhelming, especially for the general educator but sometimes for the special educator as well. One solution proposed is co-teaching, that is, partnering these teachers for the delivery of instruction (Little & Theiker, 2009; Nevin, Cramer, Voigt & Salazar, 2008). Although not always the case, this relatively sophisticated application of collaboration, one of its most rapidly growing applications, often results in conflict, including interpersonal relationships, feasibility, and perceptions of effectiveness.

Some researchers suggest that co-teaching can help address the challenges faced by general education and special education teachers who find themselves overwhelmed in isolation or struggling in a new teaching partnership (Little & Theiker, 2009), and they have reported benefits for students and teachers. They find that schools that value a culture of collaboration and make co-teaching a priority support student achievement (McDuffie, Mastropieri, & Scruggs, 2009; Rea & Connell, 2005), which is vital in this age of heightened school accountability. Specific findings include that students with disabilities and other diverse learners exhibited increased levels of class participation or engagement in co-taught classrooms in comparison to peers in non-co-taught classrooms (Piechura-Couture, Tichenor, Touchton, Macisaac, & Heins, 2006; Wilson & Michaels, 2006). These findings are attributed to decreased student/teacher ratios made possible by effective co-teaching (Friend, 2008).

In contrast to these optimistic outcomes, other studies (e.g., Bauwens & Hourcade, 1991; Zigmond & Magiera, 2001) raise questions regarding this service delivery model. For example, Scruggs, Mastropieri, and McDuffie (2007) do not fully embrace co-teaching as being a truly evidence-based practice. According to these researchers, many difficult issues can be identified with a rigorous analysis of co-teaching research. Some studies

fail to include appropriate control groups of students, some lack reliable data due to factors such as student absenteeism or attrition due to moving, and yet others lack valid measures of student achievement. Taken together, these problems cast a long shadow on the clarity of co-teaching's effectiveness. The subtext is a question: Is the challenging work of collaborating with a co-teacher going to produce the results needed? Some researchers have concluded that until far better data have been obtained practitioners should be warned to use co-teaching cautiously (Simmons & Magiera, 2007; Zigmond & Magiera, 2001).

Collaboration Skills

At the same time that pressure is building for school professionals to embrace the notion of collaboration, researchers also have reported that many educators lack the self-awareness, dispositions, and professional knowledge and skills necessary for collaborating with each other, diverse families, and other stakeholders involved in the education of students with special needs (Rea & Connell, 2005; Van Laarhoven, Munk, Lynch, Bosma, & Rouse, 2006). For example, some believe that their classrooms are proprietary and they resent the expectation that they should work in partnership with other teachers. Others note that since they are teacher of record for students' test scores they should be the sole determiner of instructional strategies and activities. And so, the supply of teachers with effective collaboration skills remains critically lacking (Grant & Gillette, 2006; Kaufman & Brooks, 1996), especially between general and special education teachers (Smith, 2005).

What is clear is that collaboration requires skills that teachers sometimes lack when they enter the profession (Cahill & Mitra, 2008). The degree of effective collaboration needed to provide competent instruction to diverse learners in today's classrooms, serve their families and communities, and share responsibilities with colleagues and other service providers is significant and should be taught to preservice teachers in their teacher education programs (Grant & Gillette, 2006). For example, Friend and Cook (2013) posit that a critical area of collaboration skill development includes communication skills for effective interactions with families and colleagues from diverse cultures. These authors also stress the importance of having knowledge and skill in navigating the problem solving process.

Professional Development

In addition to ensuring that new teachers have adequate collaboration skills, systems must understand that veteran teachers and administrators need similar support. They need to receive on-going professional development to fully participate in and entirely support collaborative endeavors in the school setting (Cook & Friend, 2010). Enhancing the collaboration skills of school personnel is in line with the professional literature which addresses such topics as collaborative school culture, various education initiatives for improving outcomes for students with disabilities and processes for facilitating effective school reform (Waldron & McLeskey, 2010). Having first established the need for collaboration skills training for pre-service teachers and ongoing professional

development for in service teachers and their administrators, the next step is identification of common barriers that often hinder the development of effective collaborative relationships.

Barriers to Collaboration

Identifying and addressing barriers to collaboration is essential to establishing and sustaining successful collaborative practices that foster student success, including co-teaching. Additionally, pinpointing problems regarding collaboration in school settings could serve as a basis for future school reform initiatives (Cramer & Stivers, 2007). Examining barriers to collaboration also provides a basis for designing appropriate professional development to facilitate a more responsive teaching force (Cramer & Stivers, 2007; Idol, 2006).

Teacher Education

As noted earlier, perhaps the biggest and most pervasive barrier to collaborative practice is the pattern of current teacher education programs. In most settings, university programs train teacher candidates (general and special education) separately and then expect them to work together effectively in the classroom. Although there are a few exceptions to these practices, most teacher education programs, especially those preparing secondary educators, neither teach their candidates the needed skills for establishing and maintaining collaborative relationships nor model them within their universities (Burstein, Sears, Wilcoxon, Cabello, & Spagna, 2004; Griffin, Jones, & Kilgore, 2006). These barriers must be overcome if general and special education teachers are to maximize their instructional potential through collaboration.

Time

Lack of time, especially for joint planning between general and special educators, has been identified as another of the most common barriers to school collaboration (Friend, 2008; Spencer, 2005). General education and special education teachers' daily schedules are so full that they have very little time to work together (Hines, 2008). More time in the school day would allow them (and other school professionals) increased opportunities to talk with each other formally (grade level meetings, staff meetings) or informally (lunch, planning periods) to share ideas, goals, and responsibilities (Griffin et al., 2006). Although some teachers report being able to plan collaboratively during brief snippets of time (e.g., while passing each other in the hall or waiting at the copier), others resort to meeting before or after school hours (Hackman & Berry, 2000). The ideal would be to have time for collaboration incorporated into the school day (Conoley & Conoley, 2010).

Scheduling and Administrative Support

Lack of administrative support in creatively finding and designating mutual planning time usually translates to lack of time during the school day for collaborative lesson planning and discussion of student progress and areas of need (Murray, 2004). When

practitioners lack the benefit of adequate support to help them find time in the school day to collaborate, then it is likely that at least some of the educational needs of the students they serve go unmet, thus jeopardizing their meaningful access to the general curriculum (Burstein, Sears, Wilcoxon, Cabello, and Spagna, 2004). Similarly, lack of support for professional development in collaboration skills can deprive general and special educators of much needed appropriate communication with each other about student needs and progress, parent concerns, and the sharing of ideas to improve instruction; it may also prevent them from being mutually supportive of each other (Titone, 2005).

Attitudinal Issues

Negative attitudes of some educators also hinder collaboration between general and special education teachers (Griffin, Jones & Kilgore, 2006; Hansen, 2007). These barriers may be attributed to a lack of communication, insufficient staff development, stereotypical beliefs, and preconceived notions which are detrimental to establishing collegiality among school personnel and between the school, families, and the community (Friend & Cook, 2013; Jeltova & Fish, 2005). Additionally, parents, guardians and community members who have had negative school experiences and school personnel who are unwilling to operate outside of the regular school day hours are unlikely candidates for successful collaboration (Ditrano & Silverstein, 2006).

Other roadblocks such as limited classroom space and lack of instructional resources also hinder teacher collaboration. Moreover, insufficient staff development opportunities specifically planned to meet teachers' identified needs should also be addressed in order to facilitate ongoing collaboration (Friend & Cook, 2013).

Conditions for Collaboration

Just as there are barriers to collaboration, there are also factors that influence positive conditions for collaboration (Hackman & Berry, 2000). In order for educators who possess adequate skills and knowledge to achieve positive outcomes for their collaborative efforts, certain key elements must first be addressed. Friend and Cook (2013) identified several critical elements to effective collaboration which include the following:

1. Voluntariness – the individuals involved in the endeavor must have the attitude that they will give themselves to working with others, bring their resources and input to the table and value the contributions of others.
2. Parity – each of the collaborating individuals should understand each has equal power and influence.
3. Mutual Goals –collaborative partners should all embrace and work toward a common goal(s).
4. Shared Resources – collaborators should agree that materials, funds, ideas, time and talents are brought to the group and pooled for accomplishing the shared goal(s).

5. Shared Accountability – collaborating partners need to understand that outcomes of the collaboration, good and bad, are the responsibility of all involved.

Friend and Cook (2013) also emphasize additional factors essential to the collaborative process that are concurrently prerequisite and emergent. These include the value placed on collaboration by partners. Collaborators believe that their collective work is more likely to result in better outcomes than if they work individually. These researchers further explain that trust among school professionals who collaborate grows along a continuum, is foundational to establishment of collaborative relationships and progresses as a lifeline for the sustainability of the collaboration. This proves to be beneficial for both students and educators alike.

An Analysis of Co-Teaching as a Collaborative Practice

Schools are in search of solutions to the challenges faced by educators in 21st- century classrooms. Accordingly, districts are undertaking reform efforts that promote inclusive practices within a collaborative school climate. Further, it must be emphasized that collaboration is a style used to carry out activities with its main purpose being to improve outcomes for students with disabilities and other learning needs. Co-teaching, due to its highly collaborative nature, is increasingly initiated to facilitate inclusive practices and thus raise student achievement. The following section provides additional detail on the history, research and current trends of co-teaching.

The origin of the instructional delivery model known today as co-teaching can be traced to the late 1950s. During that era, educators and researchers from the United States and abroad questioned the effectiveness of traditional school organization and teaching practices (Blatt, 1958; Kode, 2002). To address these issues, alternative models of instruction were explored, including team teaching, wherein an expert teacher provided instruction for a large group of students which was later divided and led by other teachers for discussion, extension, and assessment (Friend, Cook, Hurley-Chamberlain, & Shamberger 2010). This practice was viewed as a more efficient use of teacher skills and expert knowledge as they worked closely to coordinate their efforts.

After the passage of special education law and as part of efforts to include students with disabilities, the term co-teaching emerged in the early 1980s as a specialized application of a two-teacher classroom partnership (Friend, et al., 2010). During the remainder of the 1980s, the co-teaching concept drew the attention of researchers. A series of studies examined cooperative support groups which consisted of an administrator and several teachers who engaged in planning, problem-solving and peer-observation with feedback (Johnson & Johnson, 1986). In subsequent decades, understanding of co-teaching was clarified, the complexities of it were identified, and essential components of it were established. Currently, the concept of co-teaching continues to receive attention as an instructional delivery option today (Friend et al., 2010).

Co-Teaching Research

Nearly two decades have passed since researchers expressed concerns over the ability of the then current educational system to adequately address the future needs of an increasingly diverse student population (Bauwens & Hourcade, 1991). Now, well into the 21st century, uncertainty lingers regarding the efficiency and effectiveness of traditional education practices for serving students with disabilities and other diverse needs. These issues have formed the impetus for ongoing implementation and investigation of co-teaching as an alternative method of delivering special education services within the general classroom (Friend et al., 2010).

Questions persist regarding the implementation of co-teaching as a viable method of collaboratively educating students who receive special education services, in spite of the ongoing emphasis on accountability and the use of evidence based practices (Murawski & Swanson, 2001; Scruggs, Mastropieri, & McDuffie, 2007). Although collaborative school environments have been found to support student achievement (Lee & Loeb, 2000; McDuffie, Mastropieri, & Scruggs, 2009), which is critical to school accountability, practitioners should consider the available evidence in the professional literature.

Types of Co-Teaching Research

Co-teaching is acknowledged by many experts as a means for promoting a more collaborative school culture (Bouck, 2007; Hansen, 2007; Murawski & Hughes, (2009). As such, researchers have studied co-teaching from different aspects in an effort to determine its efficacy as a sound instructional practice for servicing the needs and improving the outcomes of students with disabilities (Kloo & Zigmond, 2008; Hang & Rabren, 2009). Teacher perception studies constitute the majority of research on co-teaching. For example, Austin (2001) studied the perceptions of 12 co-teaching partners. Results suggested that general education teachers were perceived to do more work than special educators. Data indicated that general and special education teachers believed the delivery of content specific instruction to be the bulk of the workload. Special educators were seen as having expertise in accommodations and modifying lessons.

In a different type of study, Scruggs, Mastropieri, & McDuffie (2007) conducted a metasynthesis of qualitative studies that explored teacher perceptions attitudes, behaviors, interactions, and classroom structures. Their findings provided broader understandings of what co-teachers generally view as essential to effective co-teaching such as common planning time and the importance of administrative support of the co-teaching process. However, they also found it difficult to conduct precise investigations of co-teaching due to problematic issues such as forming appropriate control groups. Student absenteeism and attrition, along with the scarcity of valid student achievement measures were also factors critical to understanding co-teaching research.

Although much of the co-teaching research is qualitative, a few quantitative studies support the co-teaching model (Friend et al., 2010). For example, Murawski and

Swanson (2001) conducted a meta-analysis of co-teaching studies spanning from the years 1991-1998. Their findings suggested that co-teaching is a moderately effective service delivery model, particularly in language arts or literacy instruction and to a lesser degree in math. Similarly, McDuffie, Mastropieri, and Scruggs (2009) found the use of peer tutors in a co-taught science class to be an effective approach to helping students with disabilities do well on unit and cumulative posttests. Further, Hang & Rabren (2009) found that the achievement of students with disabilities in co-taught classes approximated that of students without disabilities.

In conclusion, the current focus on promoting collaborative school cultures is intended to improve outcomes for students with disabilities and to foster increased levels of involvement for the parents and families of these students (Silverman, Hazelwood, & Cronin, 2009; Waldron & McLeskey, 2010).

Research suggests that collaboration in school settings is critical to school success (Idol, 2006; Waldron & McLeskey, 2010; Silverman et al., 2009). Although some districts choose co-teaching as a means to accomplish greater school collaboration, the sharing of workloads, and expertise, some general and special educators feel unprepared to co-teach (Friend, 2008; Capizzi, 2009). In order to better prepare teachers to work together in heterogeneous classrooms, more research on co-teaching is needed. Research on school reform that improves instructional practices and increases student achievement has identified collaboration as a critical element in successful initiatives (Waldron & McLeskey, 2010). The field of education would benefit from extending the literature on how to strengthen roles and responsibilities of its teaching professionals and improve outcomes for students in the process.

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General Education Teachers' Knowledge of and Attitudes Toward Students with Attention Deficit/Hyperactivity Disorders: Are They Still Being Overlooked and Underserved?

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Abstract

This study was an investigation of general education teachers' knowledge and attitudes regarding students with Attention Deficit/Hyperactivity Disorder (AD/HD). Of interest were (a) the extent of teachers' knowledge about characteristics of AD/HD; (b) the extent of teachers' knowledge of teacher skills appropriate for educating students with AD/HD; and (c) the extent of teachers' willingness to accommodate students with AD/HD. There was an initial assessment of teachers' knowledge and attitudes (pretest) followed by a workshop designed to increase teachers' knowledge and improve their attitudes. An additional assessment of their knowledge and attitudes (posttest) was then administered. Results and implications for future research are discussed within this article.

General Education Teachers' Knowledge of and Attitudes toward Students with Attention Deficit/Hyperactivity Disorders in the General Education Classroom

Recently, educators have witnessed a remarkable growth in the number of children diagnosed with Attention Deficit/Hyperactivity Disorder (AD/HD). Several authors (Smith & Adams, 2006; Brown et al, 2008; Barkley, 2006) reported recent estimate rates and conclude AD/HD is a common disorder of childhood. This estimate is conservative; however, according to Smith and Adams, 2006, because assessment techniques are not uniform and systematic. DuPaul and Weyandt (2006) maintained many students with AD/HD remain underserved in our school systems.

Much legislation has been enacted to prompt school systems to provide adequate educational services for the underserved population of students with special needs, including those with AD/HD. Specifically, the Individuals with Disabilities Education Act (IDEA) and Section 504 of the Rehabilitation Act provide legal protection for the provision of educational accommodations for students with special needs and extend specialized educational services to students with AD/HD. However, students with AD/HD only qualify under IDEA if their AD/HD adversely affects a student's

educational performance (Heward, 2013). The inclusion of students with AD/HD under the provision of Section 504 establish not only a rationale but also a legal basis yielding an official justification for accommodating students with AD/HD in the same manner that other students with special needs are accommodated. Even though students with AD/HD are eligible for special accommodations and services under Section 504, only about 50% actually receive such services (Smith & Adams, 2006; Reid, Maag, Vasa, & Wright, 1994). Additionally, Reid, Maag, Vasa, & Wright (1994) estimated students with AD/HD spend approximately 80% of their day in the general education classroom. As a result, most of the responsibility for meeting the educational needs of students with AD/HD is shouldered by general education teachers. These same teachers have expressed feeling ill-prepared in managing the increasing numbers of students with AD/HD in their general education classrooms.

The attitudes and expectations teachers have regarding students with disabilities will ultimately impact how teachers respond to students with disabilities affecting how these students are educated and what they will achieve (Ringlaben & Griffith, 2008). Even recent studies suggest teachers have negative attitudes towards working with children with special needs (Hwang & Evans, 2011; Rae & McKenzie, 2010; Blecker & Boakes, 2010; Cook, Cameron & Tankersley, 2007).

In their 1994 study, Reid, Maag, Vasa and Wright surveyed third-grade school teachers in Nebraska to determine their perceptions of AD/HD in terms of (a) barriers to instruction and (b) confidence in attaining educational goals. Third-grade teachers were targeted because by the third grade, students are likely to have manifested AD/HD related problems and, therefore, have been identified as having AD/HD (Barkley, 2006; Brown et al, 2008; Heward, 2013). Results of the survey indicated participants rated time to administer specialized interventions, lack of training, class size, and severity of problems consistently high while also selecting them as the most important barriers to instruction. These empirical findings were validated by Ozdemir's (2006) conclusions that teachers lacked an understanding of AD/HD and what educational provisions were needed to ensure successful education outcomes for these students. To further compound the frustrations of general educators, in addition to acquiring knowledge and training about AD/HD and its associated behaviors, teachers must recognize their own reactions to students with AD/HD. Because of impulsiveness, loud presence in the classroom, and persistence of questions, comments, and demands, students with AD/HD try teachers' patience and tend to become unpopular in the general education classroom (Barkley, 2006; DuPaul & Stoner, 2003; Erk, 1997).

In light of the aforementioned survey, Reid, Maag, Vasa, and Wright (1994) found that many general education teachers expressed the need for training in techniques that would enable them to work effectively with students with AD/HD. The negative attitudes of these teachers toward students with AD/HD raise concern as to the willingness and capacity of general education teachers to deliver effective educational services to students with AD/HD.

Historically, there has been much emphasis on improving the education opportunities for all students with special needs, including those with AD/HD. This movement had its beginnings with the Supreme Court's decision in *Brown vs. The Board of Education* (1954) and set the stage for many issues which have focused on the segregation of students with special needs, the overrepresentation of ethnic minorities in special classes, the subsequent denial of equal education, and possible social and psychological damage from the segregation of students with special needs from their peers who were not disabled (Schattman & Benay, 1992). In 1968, Dunn continued to carry the torch for desegregation and adroitly addressed the issues of overrepresentation of ethnic minorities in appropriate educational placements in his now classic article, "Special Education for the Mildly Retarded-Is Much of it Justifiable?" Though Dunn stated an excellent case for desegregating students with special needs from their nondisabled peers, the status-quo of educating students with disabilities in self-contained classrooms continued to exist.

With the continued push for the civil rights for minorities, the Education for All Handicapped Children Act of 1975, and the increased public desire to educate all children in the least restrictive environment came the concept of mainstreaming. According to Heward (2013), inclusion represents the idea of serving all students, including those with disabilities, in the general education classroom with support from resource teachers while pullout programs were only available as needed. Each student is to be provided with an individual education plan (IEP), which is devised by an educational planning committee of the student's general education teacher, special education teacher, the student's parents, and other school personnel. The overarching goal of the Education for All Handicapped Children Act (1975) was to tailor make educational plans so that the individual needs of each student were addressed more effectively. In individualizing educational instruction, IEPs, or individual educational plans, were formulated for each student with special needs. Simply put, the concept of mainstreaming, the least restrictive environment, and the IEP served as an important and mandated reason to include students with special needs with their peers who were not disabled.

Over the last thirty years, the Education of All Handicapped Children Act of 1975 has been amended by companion legislation to include students with AD/HD as legitimate members of that group of students with special needs under the disability category of other health impaired (OHI). According to a number of authors (Pfiffner, 2011; Barkley, 2006; Shaywitz & Shaywitz, 1992), AD/HD is now recognized as the most common neuro-behavioral disorder of childhood, affecting children from infancy through school and into adult life. Estimates as to the prevalence of children with AD/HD vary from 1% to 12% of the school-aged population (Barkley, 2006; Heward, 2013; Schiller & Hauser, 1992).

The dramatic increase in the number of students identified with AD/HD has impressed upon educators awareness that these students display significant behavior and/or learning problems (Smith et al., 2006). Typically, students with AD/HD have become conspicuous because their problems affect not only their own scholarship, but also tend to disrupt the classroom environment. For example, students with AD/HD tend to interrupt, intrude, fidget, and are also hyperactive, impulsive, and distractible (Oosterlaan, Scheres, &

Sergeant, 2005). They may also display such disruptive behaviors as making tapping noises and frequently getting out of their seats. Compounding these problems, students with AD/HD often have social skill deficits in conversation and reciprocity, and in cooperating with peers and teachers. Humphrey (2009) purported the peers of students with AD/HD often view them as annoying and speculated the lack of accommodations for students with AD/HD is due to oversight, mislabeling, and inadequate teacher knowledge regarding services for students with AD/HD, and the lack of specificity about AD/HD in special education legislation.

Even though, according to DaVila, Williams, and McDonald (1991), the Office of Special Education and Rehabilitative Services (OSERS) has affirmed that children with AD/HD receive special services under Section 504 of the Rehabilitation Act and “other health impaired” under the Individuals with Disabilities Education Act, Humphrey (2009) has noted that many students with AD/HD remain inadequately served. The failure to serve students with AD/HD adequately has alarmed advocates of equal access to education for all students. Administrators and general educators also have maintained negative attitudes toward students with AD/HD because of the students’ annoying behaviors and their own lack of knowledge regarding teaching such students and managing their behavior (Humphrey, 2009; Ozdemir, 2006). The problem of negative attitudes and lack of knowledge of AD/HD held by general educators demands a solution.

Consequently, attention should be focused on the general education teachers’ attitudes and perception of AD/HD as such attitudes and perceptions relate to the structure of the general education classroom. For beneficial education outcomes to be realized as a result of the inclusion of students with AD/HD in general education classrooms, teachers must acquire a greater understanding of AD/HD. According to Ozdemir (2006) and Smith and Adams (2006), researchers have focused on the general education classroom environment and its respective structure of educational activities. Studies of the education success of students with special needs who have been included in general education classrooms have indicated that general education teachers who taught students with disabilities have not altered the pace of instruction, and these same teachers have not altered the ways in which they covered the content of material taught (Ozdemir, 2006; Smith & Adams, 2006; Schumm & Vaughn, 1995). These authors reported that the primary mode of teaching in the general education classroom remains large group instruction, while the goals and objectives are dictated by state curriculum guidelines and the adopted textbooks. These researchers also found that any changes or adaptations made by general education teachers are those made for the whole class. Schumm & Vaughn (1995) concluded after an extensive 5-year investigation that general education teachers are not ready to teach students with special needs.

Categorically, students diagnosed with AD/HD comprise a significant portion of students with special needs. According to Clarke, Barry, Irving, McCarthy, and Selikowitz (2011), up to 12% of the school aged population is estimated to display symptoms of AD/HD. The total school aged population of students with special needs, including those with AD/HD, is being integrated into general education classrooms despite the lack of readiness of general education teachers to offer such students appropriate instruction.

Currently, educational policy dictates that inclusion into the general education classroom is the most important vehicle for achieving the goal of providing equal education experiences to all students. General education teachers must adopt positive attitudes toward students with AD/HD, and they must strengthen their knowledge of AD/HD in order to provide appropriate educational services for this population of students. Greater knowledge of AD/HD has the potential to lead general education teacher to be more willing to provide appropriate accommodation for students with AD/HD.

With the passage of No Child Left Behind (NCLB) in 2001, public education for students with special needs changed drastically. Questions began to arise regarding the attitudes and self-efficacy of general education teachers with the introduction of such a diverse population of students into their classrooms. As universities prepare pre-service teacher to meet the demands of teaching these students in their future classroom, teacher preparation professionals need to gauge how well they are preparing candidates to teach all students within the classroom. A significant number of studies from a variety of countries have discerned that pre-service teachers had concerns about working with students with disabilities (McCray & McHatton, 2011; Forlin, Loreman, Sharma, & Earle, 2009; Brackenreed & Barnett, 2006; Alghazo, Dodeen, & Algaryouti, 2003; Martin, Ireland, Johnson, & Claxton, 2003). Attitudes of pre-service teachers are a critical component to the inclusion of students with disabilities (Forlin, et al., 2009; Brownlee & Carrington, 2000). “The shaping of positive attitudes toward students with disabilities is an important aspect of the education of pre-service teachers” (Sze, 2009, p. 53). It is the credentialing agencies responsibility to ensure pre-service teachers possess a professional attitude toward inclusion students and are confident in their ability to meet the needs of all students (Brackenreed & Barnett, 2006).

According to Scruggs and Mastropieri’s (1996) meta-analysis of 28 studies conducted from 1958 to 1995, teachers overwhelmingly approve the idea of including all students in their classrooms. Imperative to note is that one third of the teachers in these studies revealed they felt ill prepared in requisite skills needed to meet the needs of students with disabilities and also felt they lacked time and resources needed for successful instruction. In other words, teacher like the idea of inclusion, but the realities of today’s education dictated otherwise (Van Reusen, Shoho, & Baker, 2001). Past studies also support this investigation by revealing teacher attitudes and the direct result it has on instructional design. Positive attitudes toward students with disabilities are an important feature in the education of pre-service teachers. Cook, Tankersley, Cook and Landrom (2000) “propose that teachers’ attitudes toward their actual included students, rather than their opinions regarding the abstract concept of inclusion represent a more potent and parsimonious predictor of quality of education for included students with disabilities” (p. 116). Teachers who lack training in appropriate strategies for working with students with disabilities often feel negatively toward students with disabilities, thereby lessening the likelihood of success for students with disabilities.

Strong legislation exists in our country that guarantees a free and appropriate education for all students, but there are students with AD/HD who are often underserved by our educational system. Students with AD/HD must be served, by law, with an educational

plan appropriate to their individual needs. Because this disability area is somewhat unclear in the field of education; many general education teachers have little formal instruction to teaching students with AD/HD. As a result, many general education teachers are not sufficiently prepared to meet the needs of these students. This lack of preparation has the potential to restrict general education teachers in their delivery of educational services to students with AD/HD. Additionally, seasoned teachers with negative attitudes toward students with AD/HD and an accompanying unwillingness to make accommodation for such students may be less likely to provide adequate and appropriate accommodations for successful inclusion of students with AD/HD. Additionally, a lack of knowledge of appropriate teaching methods for students with AD/HD is yet another barrier toward the accommodations of students with AD/HD by general education teachers.

Humphrey (2006) stressed the importance of educators needing appropriate information in order to accommodate effectively students with AD/HD. Lack of knowledge of the characteristics of AD/HD and lack of a repertoire of appropriate teaching skills necessary to teach this population is a serious shortcoming of many general education teachers. The relationship of these two phenomena to the willingness of general education teachers make accommodations and the actualization of accommodations for students with AD/HD then become a timely and salient topic for investigation. Lack of information regarding AD/HD includes not only a deficit in the knowledge of appropriate teaching skills necessary to teach effectively students with AD/HD, but also a general knowledge of the syndrome itself. Significant effects of the lack of general myth-free knowledge of AD/HD and a limited repertoire of the skills necessary to teach this population have meaningful implications for the education of pre-service teachers and the continuing education of practicing teachers. Specific implications are that the curriculum for pre-service teachers would benefit by more emphasis being placed on teaching the characteristics of AD/HD and the necessary skills to teach this population of learners. Practicing teacher would benefit from comprehensive continuing education designed to teach the characteristics of AD/HD and skills for teaching students with AD/HD. The purpose of this study was to investigate the extent of general education teachers' (a) willingness to accommodate students with AD/HD, (b) knowledge of teaching skills necessary to accommodate students with AD/HD, and (c) knowledge of AD/HD.

Methods

The investigation, which was one-group pretest-post test design, determined whether or not an intervention affected any significant changes in the knowledge and attitudes of general education teachers and their willingness to accommodate students with AD/HD. The researchers administered the *Teachers' Knowledge Of and Willingness To Make Accommodations for Student Attention Deficit/Hyperactivity Disorder Instrument* (Schumm et al., 1994) to determine teachers' knowledge of AD/HD, knowledge of teaching skills necessary to accommodate students with AD/HD, and willingness to accommodate these students. Then, teachers attended a series of workshops designed to provide information about AD/HD and encouraged them to develop and use skills that will help better accommodate students with AD/HD. After the workshops, the teachers

again completed the questionnaire. This allowed an assessment of the extent to which such workshops can be helpful. In addition, a sample of the teachers was interviewed so a more complete picture of their beliefs and attitudes regarding students with AD/HD could be developed.

Construction of the Questionnaire

A questionnaire (Appendix A), adapted from Schumm et al. (1994) entitled *Teachers' Beliefs Towards Planning and Making Adaptions for Mainstreamed Students* was used to determine the willingness of general educators to accommodate students with AD/HD in their classrooms, their knowledge of AD/HD, and their perceived skills. Permission was granted (see Appendix B) to adapt this questionnaire and change its contents so that the instrument is AD/HD specific. Most of the adaptations consisted of rewording the original questionnaire items to refer specifically to students with AD/HD rather than students with disabilities in general. In addition, one section of the original questionnaire was deleted because of its irrelevance to the research study. Finally, selected teaching activities necessary to accommodate students with AD/HD were included in the questionnaire to determine what teaching strategies were employed in general education classrooms for students with AD/HD.

Content Validation of the Revised Questionnaire

The Delphi Procedure was used to assess the content validity of the questionnaire. The Delphi technique is designed to solicit independent and anonymous feedback regarding an issue (Clayton, 1997). The Delphi procedure evolved from research efforts in the private sector (Dalkey & Helmer, 1963) in an attempt to solicit expert opinion in formulating plans to predict Russian targeting of the United States' industrial operations in a nuclear attack. The techniques was later adapted to research educational institutional planning (Forsyth, 1990) and in the investigation of future directions in education and inclusion for students with disabilities (Putnam, Spiegel, & Bruinink, 1995). In conducting this study, the primary objective of the use of the Delphi technique was to provide a measure of content validity of the questionnaire based on expert consensus of a group of heterogeneous professional coming from different social/professional stratifications. Moore (1987) suggested the employment of a panel of 5 to 10 people. For this study, the questionnaire was submitted to a panel of five experts and solicited their suggestions for changes that would improve the instrument for this study. All of the individuals chosen were interested and informed about the inclusion process.

A panel was chosen based on their understanding of questionnaire construction and/or educational outcomes of students in inclusive settings. Two professionals from the area of special education were chosen to validate the questionnaire. The third expert chosen to validate the questionnaire was from the area of school counseling and instructional support employed by a state university. These professionals were chosen due to their commitment to successful inclusion. The fourth expert from the area of curriculum and the fifth expert from the area of administration were chosen to validate the questionnaire

based on their expertise in questionnaire construction as well as knowledge of the inclusion process.

The questionnaire designed consisted of three parts relevant to inclusion and one part about participant demographics. The first part of the questionnaire was a 6-item four-point Likert-type scale assessing teacher willingness to accommodate student with AD/HD. Part two included 9 items that solicited information about the extent of teachers' knowledge of skills for accommodating students with AD/HD. This part of the questionnaire was in the format of a standard four-point Likert-type scale. Finally, the third section was a 15-question true/false test designed to measure the extent of teacher knowledge of AD/HD. Demographic data such as gender, years of teacher experience, ethnicity, teaching assignment, and types of certification were included to determine whether the sample was representative of the population selected for this research study. Internal consistency for the instrument was determined by finding an alpha coefficient or Cronbach Alpha for each of the three respective sections of the questionnaire. The first section, questions 1 through 6, had an alpha coefficient of .8648; the second section, questions 7 through 15, had a alpha of .8902; and the third section of the instrument, questions 16 through 30, had an alpha of .6224. These reliability coefficients are considered to be acceptable for research purposes, according to Fraenkel and Wallen (1996).

Workshop

A series of three workshops was presented as an intervention to provide intensive hands-on education regarding the characteristics of AD/HD and explicit teaching methods for the accommodation of students with AD/HD in the general education classroom (see Appendix B for workshop outline). The workshops were conducted on three consecutive Tuesdays from 5:00 p.m. to 8:30 p.m. Prior to the beginning of the workshop; the research questionnaire was distributed to the participants who volunteered to participate in the study. During the final workshop, the participants for the qualitative portion of this study were selected. Selection was conducted on a voluntary basis from the sample. Following the final workshop, the research questionnaire was administered again to the participants in the study to serve as the post-test.

Data Collection

Sample

Teachers from West Alabama were chosen to participate in the study. The sample included 50 teachers at the elementary, middle/junior high, and high school levels. The elementary level teachers consisted of first-, second-, third-, fourth-, fifth-, sixth-grade educators. The middle/junior high-level teachers consisted of tenth, eleventh, and twelfth grade educators. All teachers enrolled in graduate school at a local university.

Although the research questions apply to teachers throughout the country, for practical reasons this study was limited to teachers readily available for participation. Although

this limits conclusions to teacher in this region who pursued graduate degrees and was willing to take part in this research, there was no reason to suspect that the participants differed from other teachers in their responses to the sort of workshops that were provided. Therefore, the results of this study were generalizable only to teachers in west Alabama who pursued graduate degrees. There was, however, no reason to believe the findings would not have wider applicability even though that cannot be statistically ascertained.

Qualitative Interviews

Upon collection of all post-tests, the researchers asked for five volunteers to participate in the qualitative aspect of this study. These volunteers were asked five open-ended questions (see Table 2) in individual interviews so that in-depth material could be collected and analyzed to enrich the finding of the quantitative results. This type of qualitative research allows the researchers to get in touch with the perceptions and feelings of the participants studied. This portion of the study was an attempt by the researchers to obtain as complete and holistic a picture as possible of general education teachers' knowledge and willingness to accommodate students with AD/HD.

The results of the qualitative research were limited to the sample from which the volunteer participants for the qualitative interviews came. After selecting the five participants to be interviewed, the researchers arranged specific times with the selected teachers to conduct the interviews. The interviews were recorded, with the teacher's permission. The interviews were then transcribed and common themes documented by the researcher. This interviewing was conducted using Glaser and Strauss's (1967) theoretical sampling and constant comparative method of analysis. Responses from the participants were cross-checked with other subjects who participated in this portion of the study. The purpose of interviewing was not only to listen to the words, but also to derive meanings, motivation, and conflicts, often hidden by surface conversation that lay behind behavior.

Interviews were designed to discover how general education teachers perceived students with AD/HD and how these perceptions were used as the basis for their actions. Once this phase was completed, the researchers shared information collected from the interviews with each of the interview participants for confirmation of facts and accuracy in the reporting. The interview questions (see Appendix C) were developed from the categories identified from the questionnaire used in the study and from the research questions presented in this article. The researchers asked five questions related to knowledge of AD/HD, experience with students with AD/HD, and strategies and plans for students with AD/HD.

Data Analyses

Percentages were calculated to describe the participants in terms of their gender, teaching assignment (elementary, middle school/junior, high school), years of experience, and ethnicity.

The original instrument created by Schumm et al. (1994), which served as a model for the instrument used in this study, was composed of three sections, each of which was treated as a coherent whole providing a single score for each participant. The instrument used in this study, likewise, consisted of three distinct sections. The researcher computed Cronbach Alpha for each set of items. The Cronbach Alpha computed for each of the three sections of the instrument was sufficiently high enough to consider each section of the questionnaire as a coherent whole.

Data gathered from the teachers' pre- and post-test surveys were analyzed using Minitabs. Research questions 1, 2, and 3 were tested using paired *t* tests.

Results

Quantitative Results

This research was conducted at the University of West Alabama in Livingston, Alabama. The participants consisted of 50 certified teachers who volunteered to take part in this study. The population was predominately female (see Table 1). In regard to ethnicity, the sample was made up of 33 African Americans and 17 Caucasians. Thirty-two participants taught in Grades 10-12, 12 participants taught in Grades 7-9, and the remaining 6 participants taught in Grades 1-6. Regarding years of experience, 30 participants had 1-5 years of teaching experience, 17 participants had between 6 and 20 years of teaching experience. Demographic data such as gender, years of teacher experience, ethnicity, teaching assignment, and types of certification were included to determine questions about whether the sample was representative of the population selected for this research study. Frequencies (f) and percentages (%) for the population are presented in Table 1.

Table 1
Demographic Characteristics of Participants

Characteristics	(f)	(%)
Gender		
Male	4	8
Female	46	92
Ethnicity		
African American	33	66
Caucasian	17	34
Grade Level		
Elementary (Grades 1-6)	32	64
Middle/Junior High (Grades 7-9)	12	24
High School (Grades 10-12)	6	12

Years of Experience

1-5 years	30	60
6-10 years	17	34
11-15 years	2	4
16-20 years	1	2

Each participant was administered the *Teachers' Knowledge Of and Willingness to Make Accommodations for Students with Attention Deficit/Hyperactivity Disorder Instrument* (Schumm et al., 1994) as a test prior to a series of workshops as an intervention and then as a post-test after the workshops. The six-item section that measured willingness to accommodate AD/HD had an alpha of .8718. The nine items, section two, that measure each participant's knowledge of skills necessary to accommodate students with AD/HD was .8902. The final section, 15 items that measured teachers' knowledge of AD/HD, had an alpha of .6424. These results are considered to be sufficiently high to conclude that the items in each section all measure the same construct and can be summed to form a score.

Limitations

The following limitations are noted. First, the population of teachers from which the sample was drawn was small. Therefore, the results of this study were generalizable only to teachers in West Alabama who pursued graduate degrees. There was, however, no reason to believe the findings would not have wider applicability. Second, assumptions were made by the researchers as to the existence of school-to-school differences in practices of inclusion and accommodating students with AD/HD in general education classrooms.

Qualitative Results

Five teachers from the sample population volunteered to participate in the qualitative phase of this study. Five multi-part, open-ended questions were asked, and responses were tape recorded so that the entire interview could be documented. Each recording was transcribed for analysis and examined for common themes. The themes were then synthesized and finalized in order to provide depth to the quantitative findings. The responses from each participant's interviews were examined to discover emerging individual themes concerning accommodations for students with AD/HD.

Themes

An analysis of the interviews for the qualitative portion of the study yielded salient themes directly related to the quantitative findings. While the qualitative results supported the quantitative findings, in part, there was one finding derived from the qualitative portion of the study that did not demonstrate support. For example, a strong sense of teacher idealism regarding the notion of helping all students learn was common to all respondents as a motivation for entering the teaching profession. This appeared to be a common underpinning of a strong sense of professional duty on behalf of the

teachers interviewed. All of the teachers were aware of a professional duty to make accommodations for students with AD/HD in their classrooms. However, in conflict with this sense of duty, was a reluctance to actually make accommodations for students with AD/HD, seemingly based on the negative assumptions these teachers held regarding students with AD/HD in general and their lack of knowledge and skills necessary to provide successful accommodations for students with AD/HD. The conflict between the professional need to make accommodations and the negative attitude toward students with AD/HD appeared to create a general sense of frustration for most of the teachers interviewed by the researchers.

Conclusions and Implications

Based on the results of this research, it might be concluded that teachers are reluctant to make accommodations for students that they feel less than capable of serving. This concept is in keeping with the findings of Salvia and Munson (1986) that general education teachers who lack knowledge of AD/HD and are not trained to manage students with AD/HD are less capable and subsequently less willing to make accommodations for these students. Pearl (1992), Wood and Lazarri (1997), and Ysseldyke et al. (1992) substantiated these findings that general education teachers have a lack of knowledge about the syndrome AD/HD, and many teachers polled in their studies jumped to the conclusion that students with AD/HD simply cannot learn. Fowler (1991) reported that general education teachers are not prepared to employ specialized techniques necessary to successfully teach students with AD/HD. The question then arises as to whether or not knowledge of the complexity of AD/HD and the extra efforts needed to accommodate students with AD/HD actually “scares teachers off” from being willing to undertake such a task.

Because of the increasing numbers of students with AD/HD in general education classrooms, as indicated by Blecker and Boakes (2010) school personnel must realize that AD/HD is very much a general education phenomenon as opposed to a special education phenomenon. How schools can best meet this challenge in practice is uncertain and is an area to be addressed by researchers in the future.

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APPENDIX A

QUESTIONNAIRE

TEACHERS' KNOWLEDGE OF AND WILLINGNESS TO MAKE ACCOMMODATIONS FOR STUDENTS WITH ATTENTION DEFICIT/HYPERACTIVITY DISORDER INSTRUMENT

Pre-Test

Directions: Please answer the following statements by putting an X in the blank that best describes you.

You are: _____ Male _____ Female

Your ethnic background is
_____ African American _____ Caucasian/Non-Hispanic

Your years of teaching experience range between:

_____ 1-5 years _____ 6-10 years _____ 11-15 _____ 16-20 years

Have you ever taught a student with AD/HD? _____ Yes _____ No

Type(s) of Certification _____

Grades presently teaching: _____ (1-6) Elementary _____ (7-9) Junior
High
_____ (10-12) High School

Directions: For each of the following items, please answer the following statements by circling either 1 (Never), 2 (Sometimes), 3 (Most of the time) 4 (Always)

Statement	1	2	3	4
1. I am WILLING to change my classroom policies to accommodate a student who breaks classroom rules.	1	2	3	4
2. I am Willing to change my normal teaching strategies to accommodate a student who is inattentive and distractible.	1	2	3	4
3. I am WILLING to change my normal teaching strategies to accommodate a student who blurts out answers and interrupts others.	1	2	3	4
4. I am WILLING to change my normal teaching strategies	1	2	3	4

to accommodate a student who talks excessively and often does not listen.

5. I am WILLING to change my normal teaching strategies in order to accommodate a student who consistently shifts from one activity to another. 1 2 3 4

6. I am WILLING to change my methods of assessment to accommodate a student who often does not complete his work because of an inability to stay focused on my classroom instruction. 1 2 3 4

Please answer the following items by circling the number that indicates your level of agreement (1 is equal to the **LOWEST** level of agreement).

Statement	LOW HIGH			
7. I am SKILLED at designing long-range plans that meet the needs of my students with AD/HD.	1	2	3	4
8. I am SKILLED at appropriately pacing and timing the presentation of content material for my students with AD/HD.	1	2	3	4
9. I am SKILLED at grouping for instruction so that the needs of all my students are effectively met.	1	2	3	4
10. I am SKILLED at designing tests that effectively monitor progress of students with AD/HD.	1	2	3	4
11. I am SKILLED at using individualized/different criteria when evaluating the assignments and tests of students with AD/HD.	1	2	3	4
12. I am SKILLED at designing short-range plans that meet the needs of my students with AD/HD.	1	2	3	4
13. I am SKILLED at adapting course content to meet the needs of my students with AD/HD.	1	2	3	4
14. I am SKILLED at using frequent checks to monitor the progress of my students with AD/HD.	1	2	3	4
15. I am SKILLED at providing individualized instruction for students with AD/HD.	1	2	3	4

Directions: Please answer the following statements by circling either TRUE or FALSE.

STATEMENT

- | | |
|--|-------|
| 16. A STUDENT WITH AD/HD HAS ONE OR MORE LEARNING DISABILITIES. | TRUE |
| | FALSE |
| 17. A STUDENT WITH AD/HD CAN BE TAUGHT MORE SUCCESSFULLY AFTER | TRUE |
| BEING TREATED WITH MEDICATION. | FALSE |
| 18. STUDENTS WITH AD/HD CANNOT CONTROL THEIR BEHAVIOR IN THE | TRUE |
| GENERAL EDUCATION SETTING. | FALSE |
| 19. A STUDENT WITH AD/HD KNOWS HOW TO INTERACT SOCIALLY, BUT | TRUE |
| CANNOT CONTROL HIS ACTIONS. | FALSE |
| 20. IF A STUDENT CAN WATCH CARTOONS ON SATURDAY MORNING AND | TRUE |
| PAY ATTENTION, HE PROBABLY DOES NOT HAVE AD/HD. | FALSE |
| 21. STUDENTS WITH AD/HD, WHO ARE ABLE TO INTERACT WITH THEIR | TRUE |
| TEACHER ONE ON ONE, CAN BEHAVE IN THE GENERAL EDUCATION CLASSROOM. | FALSE |
| 22. STUDENTS WITH AD/HD CANNOT DO MATH PROBLEMS AS WELL | TRUE |
| AS STUDENTS WITHOUT AD/HD. | FALSE |
| 23. STUDENTS WITH AD/HD USUALLY ARE NOT SUCCESSFUL IN COLLEGE | TRUE |
| PREPARATORY PROGRAMS. | FALSE |

24. STUDENTS WITH AD/HD BREAK RULES AND REGULATIONS BECAUSE MOST OF THEM JUST DO NOT WANT TO BE COMPLIANT.	TRUE FALSE
25. STUDENTS WITH AD/HD CAN ONLY SUCCEED IN SPECIALLY DESIGNED CLASSROOMS EQUIPPED TO ACCOMMODATE THEIR DISORDER.	TRUE FALSE
26. STUDENTS WITH AD/HD DO NOT RESPOND TO REWARDS AND PUNISHMENTS AS DO STUDENTS WITHOUT AD/HD.	TRUE FALSE
27. STUDENTS WITH AD/HD OFTEN HAVE NO PROBLEMS WITH SELF-ESTEEM.	TRUE FALSE
28. STUDENTS WITH AD/HD NEED TO BE REFERRED FOR MENTAL HEALTH COUNSELING.	TRUE FALSE
29. STUDENTS WITH AD/HD NEED TO BE REFERRED FOR MEDICAL TREATMENT.	TRUE FALSE
30. CHILDREN DIAGNOSED WITH AD/HD USUALLY OUTGROW THEIR AD/HD TENDENCIES BY LATE JUNIOR OR SENIOR HIGH SCHOOL.	TRUE FALSE

THANK YOU FOR YOUR PARTICIPATION IN THIS STUDY.

APPENDIX B

WORKSHOP OUTLINE

OUTLINE OF WORKSHOP

(3.5 Hours – Session 1)

- I. Introduction
 - A. Purpose of the workshop
 - 1. Description of the study
 - 2. Call for participants
 - 3. Distribution of questionnaire
 - 4. Directions for completing questionnaire
 - 5. Explanation of the post-test questionnaire
 - 6. Collection of pre-test questionnaire
 - B. What is AD/HD?
 - 1. Prevalence of AD/HD
 - a. gender
 - b. in the United States
 - c. mental health facilities
 - d. in general education and special education populations
 - 2. Common ideas teachers have about students with AD/HD
 - a. fact
 - b. myth
 - 3. Primary characteristics of students with AD/HD
 - a. inattention
 - b. impulsivity
 - c. hyperactivity
 - d. examples of a, b, c
 - 4. Secondary characteristics of students with AD/HD
 - a. cognitive characteristics
 - b. academic characteristics
 - c. social problems
- II. Difficulties Teachers Face in Instructing Students with AD/HD
 - A. Teacher resistance to instruct students with disruptive and/or academic difficulties.
 - 1. “Contagious behavior” effect
 - 2. Teachers’ notion of student success
 - 3. Accommodations, both academically and behaviorally
 - 4. Teachers’ view of AD/HD
 - B. Teachers’ concern regarding the use of behavior modification procedures.

1. Philosophical objections
 2. Time
 3. Ease of preparation to implement behavior modification
- C. Teacher Isolation
1. Lack of support
 - a. administration
 - b. parents
 - c. community
 2. Ill-prepared prior to the placement of students with AD/HD.
 3. Assumptions regarding teacher commitment are often erroneous
 4. “Good teachers always have orderly, quiet classroom.”

III. Conclusion

Question and answer discussion period

OUTLINE OF WORKSHOP (3.5 Hours – Session II)

I. Introduction

A. Review previous session’s topics (major issues of discussion)

B. Legislation impacting students with disabilities

1. PL 94-142
2. IDEA PL 105-17
3. Notice of Inquiry by U. S. Department of Education regarding AD/HD
4. ADD policy memorandum
5. IDEIA
6. Section 504
7. No Child Left Behind Act
8. Application to students with AD/HD

II. Type of Interventions Appropriate for Students with AD/HD

A. Medical interventions

1. General information regarding medications for students with behavioral/emotional problems
2. Stimulants and Ad/HD
3. Ethical and legal concerns regarding the use of medication for students with AD/HD
4. Need for collaborative roles in the medication process

- B. School Based Interventions/Critical Features
 - 1. Determine extent of need
 - 2. Commitment
 - 3. Roles and responsibilities
 - 4. Commitment to continuity of intervention efforts
 - 5. Gradual transfer of intervention responsibility to general educators
 - 6. Commitment to involve parents
 - 7. Commitment and administrative support
 - 8. Positive school climate
- III. Conclusions
 - Question and answer discussion

OUTLINE OF WORKSHOP
(3.5 HOURS – SESSION III)

- I. Problematic Issues to be Considered During Intervention Process
 - A. Defining target behavior
 - B. Varying behaviors of students with Ad/HD
 - C. Prioritizing behaviors
 - D. Complexity of intervention efforts
 - 1. Illustrative case studies demonstrating dramatic differences in types of behavior that students exhibit in school setting
 - a. Allen
 - b. Mark
 - c. Tanya
 - 2. Establish an intervention model using case studies
- II. Physical Environment Intervention
 - A. Arrangements
 - 1. Grouping arrangements
 - 2. Seating arrangements
 - 3. Proximity control
 - 4. Reducing distractions
 - B. Classroom environment
 - 1. Scheduling subjects
 - 2. Established, organized, predictable schedule

- a. transition
- b. incorporating activity into class structure/lesson

C. Teacher organization

- 1. Modeling organized behavior
- 2. Using object placement routines
- 3. Teaching time estimation skills

III. Academic Interventions

A. Principles of Effective Teaching

- 1. Instructional cycle
- 2. Maximize student engagement in instruction
- 3. High rates of student success
- 4. Questioning which facilitates students learning
- 5. Managing student responses in a facilitative way
- 6. Corrective feedback
- 7. Appropriate pace
- 8. Organized content

B. Teaching considerations

- 1. Intervene academically first
- 2. Increase stimulating value of lesson
- 3. Use direct or computer-assisted instruction
- 4. Shorten length of assignments/provide more time to complete task

C. Specific academic modifications

- 1. Individual assignment sheets
- 2. Priority time sheets
- 3. Independent study
- 4. Strategy to promote student work productivity
 - a. illustrative example of cognitive-behavior theory
 - b. phases of an effective lesson structure
 - c. effective/ineffective praise
 - d. illustrate example of a content organizer
 - e. illustrate example of a content diagram
 - f. illustrate example of a study guide
- 5. Teaching and using study skills

IV. Behaviorally-based interventions

A. Overview

- 1. Power struggles
- 2. Escape/avoidance behaviors

B. Appropriate use of contingent feedback

1. Providing positive teacher attention
2. Effective and ineffective commands

C. Group contingencies

D. Individual contingency contracts

E. Setting up a Token Economy

F. An overview of social skills rating

V. Conclusion

A. Question/answer discussion

B. Teacher plans for using material presented for workshops ensure teacher understanding

APPENDIX C
INTERVIEW QUESTIONS

Interview Questions

1. What made you want to be a teacher?
 - a. What do you like best about the teaching profession?
 - b. What doubts and concerns do you have as a teacher?
2. What kinds of experiences have you had with students with AD/HD?
3. What is it like having students with AD/HD in your classroom?
 - a. What are the advantages and disadvantages of having students with AD/HD in your classrooms?
4. Do your teaching strategies differ for students with AD/HD?
 - a. How? In what ways?
5. If you found out on Monday that you were going to have a student with AD/HD in your class, what would you consider as your teaching responsibility for this student?
 - a. Would there be any particular things that you would expect to do differently?
 - b. In considering your goals and career as a teacher, what particular feelings do you have about being a teacher in a classroom that has students with AD/HD?

Should I Stay or Should I Go?
Revisiting Influencing Factors of SPED Teacher Attrition & Retention
A Review of the Literature

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Abstract

Evidence continually reports that special education (SPED) teachers stay in the field three-to-five academic school years before leaving the profession. A systematic review of historical-to-current literature revealed that personal, employment, and external factors were the three most prevalent variables that influenced attrition and retention (A&R) rates of SPED teachers. Although A&R has significant implications for student learning outcomes, the focus of this article is on analyzing these casual factors in an attempt to revisit and revitalize this important issue.

Revisiting Influencing Factors of SPED Teacher Attrition & Retention

It is difficult to dispute that teachers are vital to increasing the learning outcomes of *all* students (see Berry, 2004; Darling-Hammond, 2000; Darling-Hammond & Youngs, 2002; NCLB, 2002; Race to the Top, 2008; Rebell & Hunter, 2004; Turnbull, Turnbull, Erwin, & Soodak, 2006). From this perspective the ability for school administrators to hire and--more importantly--retain highly qualified teachers is paramount (Theoharis & Fitzpatrick, 2011). Excellent teachers have the capacity to provide consistency within their learning environment while simultaneously imparting knowledge in order to meet the unique academic, social, emotional, and behavioral needs of students with and without disabilities (Fitzpatrick & Knowlton, 2007; Fitzpatrick & Knowlton, 2008; Fitzpatrick, 2010).

Over the last decade, the U.S. educational system has been grappling with abysmal attrition and retention (A&R) rates of special education (SPED) teachers (Billingsley, 2004a; Theoharis, 2008). Unfortunately this conundrum continues to exacerbate the omnipresent achievement gap (Fitzpatrick, 2010) and increases the financial burden to already *cash strapped* school districts (Billingsley, 2004b). On the forefront of this pervasive issue are institutions of higher education (IHE) which have encountered the difficult task of producing a highly qualified, diverse, and committed teaching force (Billingsley, 2002; McLeskey, Tyler, & Saunders, 2002). Moreover, preparing and retaining effective teachers has been a longstanding problem (Billingsley, 2004a) and has wide reaching implications regarding U.S. students viability in a globalized society (Fitzpatrick, 2010).

Sadly the literature is replete with appalling data specifically related to the multidirectional relationship between the critical shortage of SPED teachers and significant challenges for communities, schools, and families (Luekens et al., 2004). Thus, the purpose of this article serves as a review of historical-to-current literature (1980-2012) specifically related to the dire state of A&R among SPED teachers. Please note the intention was not to differentiate between disabilities (e.g., learning disabilities and Autism), rather provides as an analysis identifying three causal issues that intensify A&R among SPED teachers including personal, employment, and external factors. Additionally given the complexity of these factors, the authors are opting not to provide viable solutions. For potential solutions please see Theoharis (2008). The three causal issues are discussed in the sections below.

Demographic & Personal Information

Numerous studies have examined the impact of demographic and personal factors on SPED teacher A&R rates (see, Boe et al., 1997; Cross & Billingsley, 1994; Gersten et al., 2001; Miller et al., 1999; Morvant et al., 1995; Singer, 1992; Singh & Billingsley, 1996). Research related to personal factors were divided into three main categories (a) demographic information (e.g., age, gender, race), (b) academic aptitude (e.g., qualifications and degrees earned), and (c) life experiences (e.g., finances and perceived opportunities). Based on a review of the literature, these factors were the most prolific variables pertaining to SPED teacher A&R. The following is a truncated synopsis of each category.

Age. A considerable amount of research has been devoted to the relationships between age and A&R (see, Boe, et al., 1997; Cross & Billingsley, 1994; Morvant et al., 1995; Singer, 1992). Additionally, age is the only demographic variable that has been consistently linked to this phenomenon among SPED teachers (Billingsley, 2004b). It is evident that younger SPED teachers are more likely to leave or express an interest in leaving the profession compared to their veteran colleagues (Boe, et al., 1997; Cross & Billingsley).

Gender. Billingsley (2004b) suggested that a relationship between gender and attrition exists. However, unlike age, there has been limited research pertaining to the relationship between gender and A&R among SPED teachers (Elitharp, 2005; Theoharis, 2008). Moreover what has been analyzed between this relationship have produced mixed findings (see, Boe, et al., 1997; Cross & Billingsley, 1994; Miller et al., 1999; Morvant et al., 1995; Singer, 1992). For example, several studies show attrition rates are higher for women compared to men (Gonzalez, 1993; Lawrenson & McKinnon, 1982; Singer, 1992). Conversely, almost an equal number of studies showed no significant difference between genders (Boe, et al., 1997; Cross & Billingsley; Singh & Billingsley, 1996).

Race. Although 38% of students receiving SPED services in U.S. public schools are culturally and linguistically diverse (CLD), only 14% of SPED teachers are from historically underrepresented groups (Kozleski, Mainzer, Deshler, Coleman, &

Rodriguez-Walling, 2000; Tyler, Yzquierdo, Lopez-Reyna, & Flippin, 2004). Further, Riley (1998) reported that more than 40% of schools in the U.S. did not have any teachers from CLD backgrounds. This trend continues to be prevalent as research indicated the number of minority SPED teachers has continued to decline (Olson, 2000; Theoharis, 2008).

Qualifications. Teacher qualifications and A&R rates have received little attention in SPED literature (Billingsley, 2004b; Theoharis, 2008). Moreover, despite the *No Child Left Behind Act* (2002), it has been challenging for researchers to agree on the meaning or a definition of teacher quality (Blanton et al., 2002; Billingsley, 2004b). The lack of a common understanding of the term has made selecting an instrument to measure teacher quality not only difficult but controversial (Billingsley, 2004b). For example, variables including (a) nature of practicum or field experiences, (b) student teaching, or (c) teacher efficacy that could provide information related to teacher quality and the relationship of these characteristics to SPED teacher A&R have rarely been addressed by researchers or in the literature (Billingsley, 2004b).

Degrees Earned. In the late eighties-to-early nineties there was a generous amount of evidence illustrating how the level of education influenced the A&R rates of SPED teachers (Bruton, 2001). Unfortunately no contemporary articles (e.g., 2005-present) were found related to this factor (Theoharis, 2008). However, the majority of research that was reviewed revealed a relationship existed between the level of education and A&R of SPED teachers. This variable appeared to influence whether or not a SPED teacher would remain in their position (Banks & Necco, 1987; Bogenschield et al., 1988; Lauritzen, 1988; Parshall, 1990; Seery, 1990). For example, Banks and Necco reported that SPED teachers with a graduate degree taught three years longer than teachers with only an undergraduate degree. Similarly Bogenschield et al., Lauritzen's (1988), and Parshall's (1990) reported analogous findings.

Personal Finances & Perceived Opportunities. Personal factors, such as finances and perceived opportunities, may have an effect on whether or not SPED teachers stay in the profession (Billingsley, 2004b). Similar to qualifications, there was a limited number of historical and contemporary research related to this factor (Theoharis, 2008). Billingsley and Cross (1992) found no differences between individuals who provided the main source of income for their family and those who did not regarding their intent to stay or leave SPED. In contrast to Billingsley and Cross's findings, Westling and Whitten (1996) suggested that SPED teachers, who served as their family's primary source of income, were more likely to remain in the field compared to those who were not.

This section provided a summation of the primary demographic factors influencing SPED teachers decision to either stay or leave the profession. Although it is fairly obvious additional attention is required to update outdated literature, the relevancy of demographic factors and how they related to A&R was--at one point and time--investigated thoroughly. Next, is an exploration into how employment factors negatively influences A&R.

Employment Factors

Regardless of profession, job frustrations are typically universal. Specifically in the field of SPED, Theoharis (2008) identified nine employment factors that adversely impacted teacher A&R. However, for the purpose of this article the authors regrouped Theoharis (2008) findings and focused on salary, school culture and climate, and role ambiguity. Below is an overview of each causal factor.

Salary. Arguably, few teachers enter the profession with the hopes of getting rich. However, based on national salary averages teachers continually fall below other professionals with similar degrees. For example, the average salary for a novice teacher (e.g., <5 years) with a bachelor's degree was \$32,000 whereas a veteran teacher (e.g., >5 years) with a masters degree ranged from \$51,000-to-\$69,000. Although the salary range appears attractive it pales in comparison when considering the average salary of computer programmers with an associate degree and eight years of experience was \$96,000.

Culture and Climate. The culture and climate of schools is one of the broadest variables in SPED A&R (Billingsley, 2004b; Theoharis & Fitzpatrick, 2011). According to Billingsley et al. (2004) and Miller et al. (1999) SPED teachers who view school culture and climate positively are more likely to continue teaching compared to teachers with negative perceptions of their school's culture.

Role Ambiguity. A strong relationship exists between the role of the teacher and their decision to leave the profession (see Billingsley & Cross, 1992; Cross & Billingsley, 1994; Gersten et al., 2001; Morvant et al., 1995). Role ambiguity has many facets including (a) job or position inconsistencies, (b) conflicts, (c) caseloads, (d) workload manageability, and (d) dissonance (Billingsley, 2004a). These challenges have perpetuated role ambiguity which negatively impacts both veteran and novice teachers (Billingsley, 2004a).

This section summarized three employment factors which significantly impacted teacher's decisions whether to stay or leave the profession. Next, the authors address three external factors.

External Factors

According to Theoharis (2008) SPED A&R is influenced by forces outside the control of the employing school district. The literature review revealed that few studies have been conducted to address the variables such as familial and friend, societal, and institutional perspectives (Billingsley, 1993). Nevertheless below is a summation of findings related to these three factors.

Family & Friend Perspective. Although heartfelt sentiments such as *family is all* (Schnauz & MacLaren, 2010) and *friends are friends forever* (Smith & Smith, 1989, Track 9) there was only one study discovered related to how perspectives of family and friends impacted A&R among SPED teachers (Theoharis, 2008). Tye and O'Brien (2002)

discovered that family and friend's perspective had major implications for how SPED teachers viewed and valued their position. For example, many teachers reported a desire for their family, friends, and peers to understand and accept the significance of their career choice. In essence, Theoharis (2008) findings suggested that the less accepting, the more apt teachers were to leave the profession.

Societal Perspective. In an era of social connectivity, the need for societal relevance (e.g. acceptance) is vital for both novice and veteran teachers (Fitzpatrick, 2010). For example, Spears, Gould, and Lee (2000) argued that a random sampling of most U.S. schools would reveal teachers are not given the same status as other professionals. Similarly Inman and Marlow (2004) reported that teachers indicated they were not given the authority and prestige they believed they earned. This is clearly evident when most teachers typically have to (a) schedule all breaks; (b) sign in and out of the workplace; (c) work specifically within school hours (e.g., limited access to the building on weekends); and (d) take-on copious responsibilities including bus, playground, hall, and lunchroom duties. Each of these components negatively influences a SPED teacher's decision to either stay or leave the field.

Institutional Perspective: Institutional perspective consisted of IHE, educational agencies, and teacher unions (Theoharis, 2008). Theoretically the goals of these institutions are to increase retention and decrease attrition. Traditionally, once students accepted a teaching position the role and responsibility of the college or university ceased (Weasmer & Woods, 1996). However, within the past five-to-ten years several postsecondary institutions have adopted school based mentorship programs in order to support SPED inductees (Boyer, 2005; Whitaker & Hiller, 1996). Although most educational agencies and teacher unions strive for equity, sadly, despite the positive intentions, institutional initiatives often created significant obstacles, challenges and disincentives, through increased mandates, with minimal-to-no support to meet escalating demands (Theoharis, 2008).

Conclusion

The specific intent of this article was to provide a broad-brush overview of findings rather than an in-depth analysis or differentiate between disabilities. Nevertheless it is apparent each of the aforementioned factors is complex (Theoharis, 2008) and often leaves school districts caught in a continuous cycle of recruitment and replacement (Thornton et al., 2007). From a historical perspective, there was a plethora of research related to SPED teacher A&R. Unfortunately as demonstrated throughout this article, the vast majority of relevant research is archaic, especially when considering new educational policies and legislative mandates hold *all* teachers accountable for their student's learning outcomes (Abedi, 2004; Fitzpatrick & Knowlton, 2007).

Although A&R has appeared to fall off the proverbial research radar, each factor has broad reaching implications for the U.S. educational system. Moreover, given that this article did not provided viable solutions to this multifaceted problem (see Theoharis, 2008), the authors would be remiss to forgo a subtle clarion call to action. Policy makers,

IHEs, and administrators need to be cognizant of how each factor impacts A&R rates among SPED teachers. In essence, it does not take an Einstein to conceptualize how a revolving door hinders student achievement, learning, and overall school climate and culture. Proactively addressing these issues should help alleviate SPED teachers from constantly debating *should I stay or should I go*.

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