

## **CLASSROOM STRUCTURE AND TEACHER EFFICACY IN SERVING STUDENTS WITH DISABILITIES: DIFFERENCES IN ELEMENTARY AND SECONDARY TEACHERS**

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*The purpose of this study was to investigate the differential classroom structure and efficacy reported by general and special educators at the elementary and secondary level. General and special educators (n = 774, return rate of 37%) from a large school district in the southeast US participated in the study. The participants completed a modified version of the Bender Classroom Structure Questionnaire in order to determine their use of cognitive strategies, management strategies, and individualized instructional strategies. In addition, the teachers completed a modified version of the Teacher Efficacy Scale to probe their efficacy in serving students with disabilities. A Multivariate Analysis of Variance (MANOVA) was conducted to determine level of variance within and between participants. Findings indicate differences in classroom structure between elementary and secondary settings and that special and general educators differed in their instructional practices.*

The No Child Left Behind Act (NCLB, 2001) mandates that each state be accountable for the continuous academic achievement of *all* students. Under NCLB students with disabilities should also be held accountable for the same academic achievement as their peers without disabilities. Another challenge inherent in the rigorous mandates of NCLB is the legal mandate issued with the Individuals with Disabilities Education Improvement Act (IDEA, 2004). IDEA requires that the individualized needs of students with disabilities be taken into consideration during education planning. How do today's educators resolve the dissonance created by the contradictions in these mandates regarding students with disabilities?

NCLB mandated that each state have highly qualified teachers in all classrooms by the end of the 2005-06 school year. The shortage of qualified special education teachers may be the greatest challenge that has ever faced public education (Billingsley, 2002; Boe, Cook, & Sunderland, 2008; Gilmore, Marsh, & Garza, 1999). With fewer qualified special education teachers, there are fewer opportunities for students with disabilities to receive appropriate services and thus compromise the likelihood for adequate achievement (Kaff, 2004). In relation, programs which have attempted to fill the shortage of teachers such as Teach for America and other alternative certification programs put teachers in classrooms with minimal training, summer prepatory courses

and then provide pedagogical instruction to these teachers while on the job for two years at a time hoping these teachers will remain in the classroom (Teach for America, 2005). Though these alternative routes to preparation provide teachers for classrooms, attrition and retention research of special education teachers has shown that under preparedness is a significant factor in teachers leaving the field (Billingley, 2004; Gersten, Keating, Yovanoff, Harniss, 2001). Thus there is no clear remedy to the shortage of qualified teachers in the near future.

To better understand the challenges educators face in today's schools particularly in serving students with disabilities, the field must continue to investigate the perceptions and practices of classroom teachers. As has been reported in previous studies, teachers' perceptions are critical features of classroom dynamics and classroom instruction (Lago-Dellelo, 1998; Semmel, Abernathy, Butera & Lesar, 1991; Bender & Ukeje 1989; Shippen, 2001; Villa, Thousand, Meyers, & Nevin, 1996). The differences in elementary and secondary settings may be a factor in teacher perceptions of serving students with disabilities.

## **Teachers' Efficacy and Perceptions of Serving Students with Disabilities**

As the direct service providers, general and special educators represent a vital link to successful academic and behavioral outcomes for students with disabilities in inclusive settings (Lago-Delello, 1998). DeBettencourt (1999) found that general education teachers were concerned with the limited number of special education courses that they had taken as a part of their academic training. In addition, research has indicated that general educators are less supportive of inclusion than are special educators (Bender, Vail, & Scott, 1995; Minke & Bear, 1996; Monahan, Marino, & Miller, 1996; Scruggs & Mastropieri, 1996). Other studies have noted that even pre-service general educators have reported concerns about serving students with disabilities (Kirk, 1998; Shippen, Crites, Houchins, Ramsey & Simon, 2005).

Teachers' perceptions of the learning and behavioral characteristics of students with disabilities appear to mediate instruction and may influence classroom dynamics (Lago-Delello, 1998; Klingner & Hughes, 2000). Positive teacher perceptions influence the success of students with disabilities in general education classes and are directly related to accommodations teachers are willing and able to provide (Ysseldyke, Thurlow, Christenson, & McVicar, 1988). The accommodations that teachers provide may be related to level of technical assistance that they receive in order to support students with disabilities (Gersten, Walker, & Darch, 1988). Cook, Semmel, and Gerber (1999) argue that there is a need to relate teacher perception to teacher practice. A starting point for relating teacher perceptions may be differences between elementary and secondary educators.

### *Contrasts in Elementary and Secondary Settings*

Thousand, Rosenberg, Bishop, and Villa (1997) pointed out that differences in organizational and academic structure between elementary and secondary schools make it difficult to develop inclusive programs at the secondary level. A critical issue that impacts secondary teachers' ability to address the needs of students with disabilities is the content-driven academic nature of secondary education. The challenge of serving students with disabilities may be further aggravated with the push for inclusion (Cook, 2004). Research has revealed that when students with disabilities are included in general education classrooms, their teachers are unlikely to alter their traditional whole-

group instructional strategies in favor of specific individualized adaptations (Scott, Vitale, & Masten, 1998).

The mandate to deliver standards-based content to diverse students increases teachers' responsibilities in the inclusion of students with disabilities in both elementary and secondary settings. Because secondary classrooms tend to be teacher-centered and only rarely provide student-centered instruction, secondary teachers may need a better understanding of how best to serve all students including students with disabilities (Cole & McLeskey, 1997). Shippen (2001) found that more experienced secondary teachers had less positive attitudes toward including student with disabilities. These philosophical barriers may impact instructional choices for students with disabilities as academic achievement is now mandated by NCLB.

In the elementary setting, classroom structure tends to be more student-driven. Studies have found that some of the same issues that exist on the secondary school level also exist within the elementary level (Stockall & Gartin, 2002). For example Cook (2004) found within inclusive elementary school settings teachers' perceived preparedness significantly influenced their ability to manage behavior and academic engagement. Diverse learning needs striated across many students cause significant challenges in instruction in elementary schools.

The diverse learning needs of students with disabilities have been facilitated by smaller groups and adjusting the learning objectives through individualized learning goals (Fuchs, Fuchs, Kazdan, Karns, Calhoun, et al., 2000; Stockall & Gartin, 2002). Generally in the early elementary grades, students are being instructed on *how to learn* (e.g., strategies) rather than *what they learn* (e.g., content). The strategic method of instruction is more widely accepted on the elementary level over content driven outcomes on the secondary level. Research based teaching strategies often incorporated into the inclusive elementary environment include: peer-tutoring, cooperative group instruction, computer assisted learning and large group instruction with modifications for students with disabilities (Ysseldyke, Thurlow, Christenson, & McVicar 1988; Stockall & Gartin).

The elementary school classroom has often been viewed as an ideal place to include students with disabilities (Fuchs et al., 2000; Cook 2004). Current school reform efforts have steadily increased the rate of inclusion for students with disabilities particularly in elementary settings as it is seen as advantageous to students with and without disabilities (Scruggs & Mastropieri 1996; Office of the President, 2002). With NCLB inclusive practices are seen as a way to provide quality instruction to children with disabilities, yet it is important to note that research on inclusion as an academic intervention is not definitive (Stockall & Gartin, 2002; Zigmond & Baker 1996).

Students with disabilities educational needs are individualized as mandated in IDEA. This is clear in the achievement gap reported through NCLB's adequate yearly progress (AYP). This factor may also add to teachers' negative attitudes towards working with students with disabilities. This may become a confounding factor in the delivery of instruction to students with disabilities as previous studies have shown teachers already had negative attitudes toward instruction of these students (DeBettencourt, 1999). Specifically, secondary teachers with more experience reported more negative attitudes

toward working with students with learning difficulties (Embich, 2001; Lobosco & Newnan, 1992; Shippen, 2001). Secondary schools are driven by content oriented tests and instruction. Often students with disabilities continue to need the individualized instruction and cognitive strategies they received in elementary school. However, classroom structure seems to differ in elementary and secondary settings.

*Classroom Structure and Teacher Practice*

In defining the research to practice gap in inclusion, the vital question is *What strategies are teachers implementing in general classes to accommodate students with disabilities?* A research synthesis by Scott, Vitale, and Masten (1998) addressed the implementation of instructional adaptations for students with disabilities in inclusive classrooms. This review of research compiled and analyzed the results of 21 studies investigating the instructional adaptations provided by teachers to students with disabilities.

Throughout their literature review, Scott et al. (1998) discovered recurring categories of support used in inclusive classrooms. These categories fell within the framework of either typical or substantial instructional or curricular adaptations. The categories of adaptations included (a) modifying instruction, (b) modifying assignments, (c) teaching learning skills, (d) altering instructional materials, (e) altering curriculum, (f) varying instructional grouping, (g) enhancing positive behavior, and (h) facilitating progress monitoring. These adaptations were reported to be the favored adaptations used by teachers. Table 1 provides a summary of adaptations provided in general education classes that have been reported in the literature.

**Table 1. Adaptations provided in general education reported in the literature**

Category of General Education Adaptation	Specific Adaptations
Instructional Delivery	Use Peer Tutors Use Resource Staff Use Computer Assisted Instruction Provide Advanced Organizers Provide On-going Feedback Break Down Tasks
Instructional Materials	Modify Testing Formats Modify Student Materials
Contextual Adaptations	Establish Rapport Homogeneous Grouping Adapt the Daily Routine Provide Extra Time
Environmental Adaptations	Change Test Setting Seat Students in a Quiet Area

In an earlier study Bender and Ukeje (1989) reported similar instructional adaptations to Scott et al. (1998), but also linked teachers' choices of strategy to attitudes of serving students with disabilities and teacher efficacy. For example, Bender and Ukeje stated, *The teachers' use of effective instructional strategies has been consistently related to*

*teacher attitudes concerning personal teaching effectiveness* (p. 28). To this end, teacher attitudes may be a major determinant in selection of instructional strategies for students with disabilities in the general education classroom.

The purpose of this study was to investigate the differences in classroom structure reported by general and special educators at the elementary and secondary level. By investigating classroom structure and teacher practice, researchers may have a clearer demonstration of *how* and *why* teachers implement the strategies that they do. Further, the researchers hypothesized that teacher type (general or special educator) and level (elementary or secondary) would be important factors in their reporting of classroom structure and instructional practices.

## **Method**

A survey packet containing modified versions of the Bender Classroom Structure Questionnaire (BCSQ) (Bender, Smith, & Frank, 1988), the Teacher Efficacy Scale (TES) (Gibson & Dembo, 1984) and a cover letter was distributed in a large school district in southeastern US. Participants were general and special educators in the (n = 774). Two weeks after the surveys were distributed; the first author collected the completed surveys from each school site. A 37% return rate was established.

### *Participants and Setting*

Participants included (n = 774) general and special education teachers from a large school district in the southeastern United States. Eighty four percent (n = 650) were general educators, while 16 % (n = 124) were special educators. Fifty three percent (n = 412) were elementary educators, while 47% (n = 362) were secondary educators. Years teaching experience reported by participants ranged from 0-5 years (32%), 6-10 years (21%), to 11 or more years (47%).

The school district where the study took place had 55 schools and reported demographic data indicating that during the year prior to data collection for the current study, the district population was 34,044 students. Seventy-three percent of the student population was classified as non-White and 27% were classified as White. Sixty percent of the school population were eligible for free and reduced meals. The system-wide graduation rate was 89%.

The average number of years teaching experience for all teachers in the district was 12. Sixty-one percent of faculty members had advanced degrees (e.g., masters and education specialist). The special education population comprised 11.7% of the total school population. The criteria for participation in the study included (a) being employed by a public school in a teaching capacity and (b) being willing to participate by completing the survey.

### *Dependent Measures*

The dependent measures were a modified version of the Bender Classroom Structure Questionnaire (BCSQ) (Bender et al., 1988) and a modified version of the Teacher Efficacy Scale (TES) (Gibson & Dembo, 1984). The BCSQ was used to determine the types of cognitive strategies, management strategies, and individualized instructional strategies used by teachers. The modified BCSQ employed a 20-item Likert-type scale ranging from 1 to 5 with responses varying from *only rarely* (1) to *almost always* (5) which covered a wide range of cognitive, instructional and management strategies.

According to Bender et al. BCSQ survey yields a 3-factor structure of teacher practices including (a) individualized instructional strategies, (b) cognitive learning strategies, and (c) classroom management strategies. A confirmatory factor analysis was conducted to verify that modified version of the BCSQ used in this study maintained the survey’s original factor structure. See Table 2 for factor loadings of the modified version of the BCSQ.

The modified version of the Teacher Efficacy Scale (TES) (Gibson & Dembo, 1984; Deemer & Minke, 1999) was changed to specifically probe teachers’ efficacy in serving students with disabilities. Within each question the terms *with disabilities* were added after student. For example, the item *When a student in my class does better than usual, many times it is because I exerted a little extra effort* was change to read *When a student with disabilities in my class does better than usual, many times it is because I exerted a little extra effort*. See Table 3 for sample items from the TES.

**Table 2. Exploratory and confirmatory factor loadings for the BCSQ**

20 Items from the modified BCSQ	Exploratory Factor Loadings (Bender et al., 1988)	Confirmatory Factor Loadings (current study)
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1. Students receive verbal praise from each other	.56	.39
2. Peer tutoring is used to assist slow learners	.59	.50
3. I use physical touch, such as a pat on the back, as a reinforcer	.63	.30
4. I individualize in my class when necessary	.64	.57
5. Students are encouraged to help each other informally on learning tasks	---	.36
	.70	.72
6. I try to determine how students learn best	.76	.42
7. The class emphasizes correction of worksheets	--	.66
8. Students must raise their hand before standing	.69	.40
9. I ask, <i>How did you learn that?</i> or some other question to focus on learning strategies	--	.54
10. I suggest particular methods of remembering	.76	.57
11. I determine early in the year if a student needs the same concepts covered in several different ways	.63	.56
12. I use reading materials that highlight the topic sentence and main idea for slow learners	.60	.65
13. Students are taught to use their own inner language to give themselves silent task instructions	.51	.30
14. I encourage students to share various techniques, which may help them memorize facts in class	.56	.43
15. The class reviews assignment papers when I return them.	.52	.47
16. Several students may be walking around in my class at any one time retrieving materials	--	.74
17. I insist that doors be shut and students stay in their seats to minimize distractions	.70	.73
	.70	.77
18. I emphasize the importance of working quietly	.61	.49
19. I praise students for successful work whenever possible		
20. I use class privileges as rewards for work.		

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**Table 3. Sample items from the modified TES**

Sample Item	
Professional Efficacy	When a student with disabilities is having difficulty with an assignment, I am usually able to adjust to his/her level. If a student with disabilities masters a new concept quickly, this might be because I knew the necessary steps to teach that concept.
Personal Efficacy	A teacher is very limited in what he/she can achieve because a student with disabilities' home environment is a large influence on his/her achievement. Even a teacher with good teaching abilities may not reach many students with disabilities.

### Data Analysis and Results

The statistical analyses of the data included a confirmatory factor analysis of the modified BCSQ and multivariate analyses of variance (MANOVA) of both dependent measures and their subscales. The confirmatory factor analysis for the BCSQ employed a principal components varimax rotation and yielded a three-factor structure and accounted for 39% of the variance in participant responses. Factor loadings of .30 or greater met the minimum level (Hair, Anderson, Tatham, & Black, 1998). The first confirmatory factor structure (individualized instructional strategies) heavily loaded on items such as *I individualize in my classroom when necessary* and *I determine early in the year if a student needs the same concepts covered in several different ways*. The second confirmatory factor structure (cognitive strategies) heavily loaded on items such as *I use reading materials that highlight the topic sentence and main idea for slower learners* and *Students are taught to use their own inner language to give themselves silent task instructions*. The third confirmatory factor structure (management strategies) heavily loaded on items such as *I insist that doors be shut and that students stay in their seats to minimize distractions* and *I emphasize the importance of working quietly*. See Table 2 for exploratory and confirmatory factor loadings of the BCSQ.

The MANOVA was conducted as a 4 (general, special, elementary, and secondary educator) x 7 (cognitive strategies, management strategies, individualized instructional strategies, overall BCSQ, personal efficacy, professional efficacy and overall TESSD) analysis. The seven subscales or dependent variables are based on the mean scores of the five individual factors yielded by the BCSQ (three factors) and the TESSD (two factors) and the two overall mean scores for both measures.

No main effect for the dependent measures was found for teacher type (general and special), but the analysis neared significance, Wilks' lambda  $\eta^2 = .97$ ,  $F(7, 466) = 1.96$ ,  $p = .06$ . Level (elementary and secondary) yielded a significant main effect for the

dependent measures, Wilks' lambda  $\eta^2 = .97$ ,  $F(7, 466) = 2.29$ ,  $p < .05$ . A significant interaction effect was found for the dependent measures between teacher type and level, Wilks' lambda  $\eta^2 = .97$ ,  $F(7, 466) = 2.30$ ,  $p < .05$ . Specifically, univariate tests for between subject effects for the independent variable Level (elementary or secondary) on the efficacy factors indicate no significant difference in personal, professional or overall teacher efficacy. However, univariate tests between subjects were highly significant on the classroom structure factors of individualized instructional strategies and cognitive strategies  $p < .01$ . See Table 4 for MANOVA main effect and interaction effect and Table 5 for follow up pairwise comparisons.

**Table 4. Multivariate analysis of variance main and interaction effect results**

		Value	F	Hypothesis df	Error df	Sig.
Level	Wilks' Lambda	.97	2.29	7.00	466.00	.03
Teacher Type	Wilks' Lambda	.97	1.96	7.00	466.00	.06
Level* Teacher Type	Wilks' Lambda	.97	2.30	7.00	466.00	.03

**Table 5. Univariate pairwise comparisons for Level main effect in classroom structure**

Dependent Variable	Teacher Type	P value
Individualized Instructions	general educator special educator	.01*
Cognitive Strategies	general educator special educator	.52
Management	general educator special educator	.09
Total Score on BCSQ	general educator special educator	.63

\*Highly significant

## Discussion

The purpose of this study was to investigate the differences in classroom structure reported by general and special educators at the elementary and secondary levels in conjunction with their perceived effectiveness in delivering instruction to students with disabilities. Significant differences were found in the classroom structure between elementary and secondary classrooms. Teachers' perceptions are critical features of classroom dynamics, structure and instruction (Bender & Ukeje 1989; Lago-Dellelo, 1998; Semmel, et al., 1991; Villa, et al., 1996). Findings are discussed below in regard to practical implications and future research.

### *Findings on Contrasts in Professional Practices*

The results of this study showed a primary difference between special and general educators in their professional practice. That is, special educators individualize

instruction for students with disabilities to a much greater extent than do general educators. This is an important finding because previous research has consistently documented that the most successful teachers working with students with disabilities are proficient in individualizing instruction for these students. The difference between general and special educators may be due to differences in preparation since general educators report a lack of coursework within their preparation programs (deBettencourt, 1999). Pre-service general educators report concerns about teaching students with disabilities (Kirk, 1998; Shippen et al., 2005) and this lack of comfort may be related to their instructional practices.

The findings in differences in professional practices of general and special educators have implications for inclusive instruction. The National Study on Inclusion (1995) found that co-teaching was the most used instructional delivery method in inclusive classrooms. NCLB mandates related to teacher quality and student achievement make inclusive instruction and co-teaching teaching necessary, especially at the secondary level. The findings the current study imply that general and special educators differ in their instructional practices for students with disabilities. General and special educators need to work together to individualize instruction in order to ensure that students with disabilities make AYP. This may explain why general and special educators struggle with co-teaching according to researchers (Rice & Zigmond, 2000). Furthermore, the differences in professional practices may be related to findings that co-taught inclusive instruction has not been consistently shown to be an effective method of instructional delivery (Magiera & Zigmond, 2005; Stockall & Gartin, 2002; Zigmond & Baker 1996).

The current study's findings have important implications for teacher training and staff development practices in the alternative preparation programs of NCLB. As teacher shortages in critical areas persist in areas such as science and mathematics at the secondary level, alternative preparation programs will continue (Boe et al., 2008). It is imperative that alternative preparation programs and/or school districts provide adequate professional development with regard to instruction for students with disabilities. In addition to pedagogy, candidates for certification need experiences which foster confidence and positive attitudes towards students with disabilities, teacher qualities that research has shown to be lacking throughout educational settings (Kirk, 1998; Klingner & Hughes, 2000; Lago-Delello, 1998; Shippen, et al., 2005). Finally, certification candidates in both general education and special education need professional development regarding co-teaching in inclusive content areas.

#### *Future Research*

It is not known whether this study's research findings would be similar in and/or across other regions of the U.S. Further research is needed to investigate teachers' perceptions and practices with regard to teaching students with disabilities. In addition, research is needed to investigate the similarities and differences in teachers' perceptions and practices within and across different types of school districts, such as rural, urban, and suburban.

This study did not address whether teachers participated in inclusive or co-taught instruction. Future research might address whether these types of instructional situations influence teachers' perceptions and practices. One of the limitations of

survey research is the extent that teachers' reports are representative of their actual practices. Future research might address this by collecting data regarding student achievement and/or observing classroom instruction in addition to surveying teachers. This limitation might also be addressed by surveying teachers regarding their perceptions and practices as well as students with disabilities with regard to their perceptions of their teachers' attitudes and practices.

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