Article

Inclusion Professional Development Model and Regular Middle School Educators

Otelia Royster, Gary L. Reglin, and Nonofo Losike-Sedimo

Abstract: *The purpose of this study was to determine the impact of a professional development model on regular education middle school teachers' knowledge of best practices for teaching inclusive classes and attitudes toward teaching these classes. There were 19 regular education teachers who taught the core subjects. Findings for Research Question 1 showed teachers' knowledge of inclusive classrooms increased from pretest to posttest. Findings for Research Question 2 revealed teachers' perceptions on inclusive classrooms changed from preimplementation to postimplementation. Both increases had a large effect sizes. For Research Question 3, the most reoccurring theme was teachers do have a positive attitude towards teaching inclusive classes.*

Dettmer, Thurston, and Dyck (2005) indicated that the degree to which regular and special education classroom teachers are trained and willing to work together in inclusive classrooms has a great impact on the success of inclusive programs. Being able to collaborate effectively is important for teachers who work together to serve students with learning disabilities in regular education classrooms. Vaughn, Bos, and Schumm (2000) revealed that effective professional development provides regular education teachers with knowledge and skills in how to effectively communicate for the purpose of solving classroom problems and providing continuity across instructional settings.

At the targeted middle school, teachers did not feel they had the understanding and knowledge of inclusion and an acceptable confidence level in implementing inclusion. Inclusion is the practice of effectively placing and working with students with disabilities in the regular classroom. Rea, Mclaughlin, and Walther-Thomas (2002) referred to inclusion as, "providing all students, including those with significant disabilities, equitable opportunities to receive effective educational services with needed supplementary aids and support systems in age-appropriate classrooms in their schools in order to prepare these students to lead productive lives in society" p. 7.

Statement of the Problem

During the past four years (2007-2011), regular educators at the targeted middle school lacked the training to teach students with disabilities in inclusive classrooms. Teachers perceived that students with mild to moderate disabilities should not be in the general education classrooms. These teachers' beliefs were consistent with the findings of studies investigating the perceptions of other regular educators (Stockall & Gartin, 2002). Teachers at the targeted school were beginning to have a greater level of frustration, students were being referred out of the classroom by the regular education teacher and a number of students were being sent to the special education classroom by the administrator. Due to little professional development on teaching in inclusive classrooms, regular educators appeared to possess no knowledge of best practices in teaching inclusive classes and displayed negative attitudes toward inclusive classrooms and working with students with learning disabilities.

There are many studies that show the benefits of inclusive classrooms and the need for more professional development for teachers who teach the inclusive classes (Kamens, Loprete, & Slostad, 2003). For instance, Rea et al.'s (2002) research investigated the relationship between placement in inclusive and pullout special education programs and academic and behavior outcomes for students with learning disabilities (LD). The population consisted of all students with LD in the eighth grade in two middle schools in a suburban school district in the southeast.

From the study, a conclusion was students with disabilities included in general education classrooms achieved better outcomes on some measures than did their peers in pullout programs (Rea et al., 2002). The researchers further revealed that students with LD served in inclusive classrooms achieved higher course grades in language arts, mathematics, science, and social studies than students with LD in pullout programs. Students with LD in inclusive classrooms experienced less in-school and out-of-school suspensions than did students in pullout programs. Students with LD served in inclusive classrooms attended more days of school than those in pullout programs. The researchers indicated that effective inclusive classroom can close the achievement gap between the regular and the special education student (Rea et al., 2002).

Goetz, Hunt, and Soto (2002) contended that professional development was required for teachers of inclusive classes in order to further close the achievement gap between the special education and the regular education student. The researchers argued that the changing role for classroom teachers necessitated a new emphasis in professional development programs. Teachers, both in general education and special education, need professional development in order to develop effective instructional and interpersonal skills in the delivery of classroom-based services for students with disabilities (Graue & Brown, 2003). In addition, professional development programs should ensure that educators develop well-honed classroom management skills for inclusive classes that will ensure greater teacher confidence and student success.

Garcia (2004) revealed that regular education teachers who successfully include students with disabilities in their classrooms demonstrate that they value the uniqueness of each child. In doing so, the regular education teacher helps break down barriers that artificially limit students with disabilities; they debunk myths about educating these students and the myth the students cannot experience a high degree of academic success. Garcia (2004) contended that as the role of the regular education teacher continues to evolve, many of today's teachers have already demonstrated inclusive education can be done successfully anywhere well-trained, competent, and caring educators choose to extend their own learning and professional development on behalf of all children.

Walther-Thomas, Korinek, McLaughlin, and Williams (2002) studied 23 schools over a 3-year period as new co-teaching models were implemented in eight school districts. Data were collected through interviews, surveys, and observations. The qualitative data showed teachers and administrators perceived many benefits for students with learning disabilities and regular education students. Students with disabilities developed better attitudes about themselves and others in inclusive classrooms. They became less critical, more motivated, and learned to recognize their own academic and social strengths. A large majority of special education students showed academic improvement and very few were removed from general education placements because of inability to cope with academic and social demands. Many other low-achieving students also showed academic and social skills improvement in inclusive classes (Walther-Thomas et al., 2002).

Purpose of the Study

The purpose of this study was to determine the impact of a professional development model on regular education middle school teachers' knowledge of best practices for teaching inclusive classes and attitudes toward teaching the inclusive classes. The Inclusion Professional Development Model (IPDM) was based on a formalized training curriculum, *Building Inclusive Schools: Tools and Strategies,* by Halvorsen and Neary (2009). According to Halvorsen and Neary (2009), the formalized training curriculum was based on years of classroom research on inclusion and was written to train teachers, service providers, school site teams, and professional development coordinators.

The IPDM targeted six major areas of the Halvorsen and Neary training curriculum that were important to the professional development of regular education teachers relative to teaching successful inclusive classes (Halvorsen & Neary, 2009). The major areas had training activities and knowledge assessment questions. The areas were (a) inclusion defined, (b) planning for individual student needs in the inclusive classrooms, (c) systematic instruction in inclusion classrooms, (d) peer relationships and support, (e) collaborative inclusive service delivery, and (f) evaluation (Halvorsen & Neary, 2009)

Inclusion and Achievement

Halvorsen and Neary (2009) emphasized the instruction of special needs students must embrace human diversity as an expected and valued characteristic among students. To achieve this goal, a growing number of schools are practicing "inclusion" education in which students with disabilities are placed in a "regular" classroom and participate in all school activities. Inclusion has proved to be successful when it concentrates on several key factors: ongoing professional development for regular and special education teachers, knowledgeable teachers about special education terms, law, and issues; positive teacher attitudes toward inclusion; effective collaborations between special and regular educators; individualized support for students with disabilities; and instruction that recognizes each student's chronological age, personal preferences, and individual potential structured around a curriculum to accommodate learning styles of a diverse student population.

Kauffman, Landrum, Mock, and Sayeski (2005) reported in some middle and high schools, inclusion may mean that only students with mild disabilities are educated in the regular education classroom and only for their core academic subjects. Other schools' inclusive practices may have all students with disabilities, regardless of the severity of the disability, educated for the entire day in regular education classrooms while receiving only supportive services from the special education teacher. This latter example of inclusion is referred to as full inclusion. Not all educators concur with the premise of full inclusion.

McDonnell et al. (2003) included the achievement of students with developmental disabilities in a study and compared the achievement level to that of their peers without disabilities in inclusive classroom settings. They investigated the impact of inclusive educational programs on the achievement of students with and without developmental disabilities. Changes in the adaptive behavior of 14 students with developmental disabilities during one school year were measured in a quasi-experimental, pretest-posttest design. McDonnell et al. (2003) reported achievement gains in the adaptive behaviors of all 14 students with developmental disabilities. He also compared the achievement of 324 students without disabilities enrolled in inclusive programs with 221 students without disabilities who were not exposed to inclusive programs. Results indicated that the academic performance of students without disabilities involved in inclusive programs was no different than those who were not involved in an inclusive program.

Teacher Attitudes Toward Inclusion

The research of Boscadrin (2005) showed that negative attitudes of teachers involved in inclusion programs can undermine the efforts of administrators to implement inclusion. They conducted a study, which investigated the attitudes of middle school regular educators

who taught in inclusive classrooms. Of the 71 teachers who were surveyed, the majority of regular educators either disagreed with the concept of inclusion or did not have positive feelings regarding the issue. Carpenter and Dyal (2007) research showed that when principals, teachers, counselors, parents, aides, and other school personnel have negative perspectives about inclusive education at a particular school, teachers in inclusive classrooms at that school find it very challenging to achieve a high level of success because there are no positive support networks to help them. Their research study concluded that negative perspectives about inclusive education make schools that try to implement inclusive classrooms likely candidates for failure.

Boscadrin (2005) reported there are strategies school personnel can employ to help avoid and to reduce negative attitudes about inclusion. The strategies are based on the principles in Bandura's (1986) social cognitive theory. School personnel can begin each school day by giving themselves and others affirmations. School personnel can say something positive about themselves and a colleague, and then say something positive they will do for the regular and special education students at the school. They can write down positive thoughts on a sticky note and place the notes somewhere so it will be seen throughout the day, such as on the bulletin board in the school hallways and classrooms and in locations at the school where students tend to congregate (e.g., bus stop, cafeteria, gymnasium, and library).

Idol (2006) suggested school personnel can display encouraging thoughts throughout their school and provide simple recognition for staff members' hard work. These traits will help to better establish a positive schoolwide climate. Maxwell (2006) reported another way to avoid negative thinking is for school personnel to read a passage out of an inspirational book each morning. If the school person does not have time to do the reading in the morning, he or she can reserve a specific time during the day to evaluate daily thoughts and feelings, even if it is just for five minutes. Reflective journaling of thoughts is another way to focus on the positive and not the negative. When feeling frustrated and overwhelmed, teachers can write down the feelings and think critically about what triggered the feelings and what can be controlled in the environment to change those feelings into something positive. According to Maxwell (2006), when feeling incapable of finding a solution, ask for advice from another teacher, principal, counselor, or friend. No good comes from harboring negative thoughts and attitudes about inclusion and working with special education students in inclusive classrooms.

Professional Development

Hang and Rabren (2009) revealed that teaching strategies should be aligned with the needs of individual students if these strategies are to be successfully learned in inclusive classrooms. Special and regular education teachers need training and experience in evaluating student learning (e.g., performance-based assessment, group projects, or portfolio assessment). Behavior management is very important when dealing with students with disability, and teachers must know the proper accommodations for each student in order to respond in a lawful, caring, and effective manner.

Dukes and Lamar-Dukes (2006) emphasized that there is no one strategy by which to practice inclusive education, but the underlying belief that all professionals are responsible to promote the academic and social development of all students is vital to the effective practice of inclusive education. Treder, Morse, and Ferron (2000) indicated that teachers who participated in effective training programs to increase their knowledge of what should be going on in inclusive classrooms and acquired the teaching skills, classroom management skills, confidence, and time management skills, have significantly more positive attitudes towards inclusion. Bull, Overton, and Montgomery (2000) emphasized that training programs can only be successful when the outcomes fostered are relevant to teachers' and the needs of students in an inclusive setting.

Humphrey and Martinez (2006) reported that principals can support the training efforts of regular education teachers to facilitate better inclusive classrooms. Principals can ensure that regular education teachers have the resources and materials they need to work with all students in their classrooms. Needs assessment can help identify training and consultation needs among teachers. Principals might support regular education teachers by providing ample opportunities to attend professional development workshops. They can provide on-site training as well as incentives for teachers to attend local and national conventions that provide information for expanding their problem-solving repertoires. Humphrey and Martinez (2006) insisted principals should encourage teachers to search the Internet or the local university library for research-based intervention strategies they can implement in their classrooms.

Method

Participants

Teacher participants in this study were a convenience sample of 19 regular education teachers at the targeted middle school. The 19 teachers instruct core subjects such as mathematics, social studies, science, and English and language arts; 10 teachers possessed a bachelor's degree, and nine teachers had a master's degree. Relative to ethnicity, 16 teachers were African Americans, two teachers were White Americans, and one teacher was Filipino American. In regards to gender, there were 16 females, and three males.

Instruments

The data collection instrument for Research Question 1 was the IKT which was organized into two sections. Section I had directions for the teacher respondents. Section II had 16 statements that came from the professional development training modules of Halvorsen and Neary (2009). The statements appeared at the end of the six modules and were used to evaluate teachers' knowledge of effective inclusion strategies resulting from their participation in the IPDM. The six modules were: (a) inclusion defined, (b) planning for individual student needs in the inclusive classrooms, (c) systematic instruction in inclusion classrooms, (d) peer relationships and support, (e) collaborative inclusive service delivery, and (f) evaluation (Halvorsen & Neary, 2009).

The data collection instrument for Research Question 2 was the TATIS (see Appendix B). According to (Cullen & Gregory, 2010), the TATIS was found to be a strong predictor of the success of efforts to create inclusive learning communities. Cullen and Gregory indicated the TATIS was subjected to principal components analysis to confirm its construct validity. Cullen and Gregory (2010) reported that the

reliability of the TATIS was confirmed through the Cronbach alpha reliability procedure. The results revealed that along with the strong factor loading indicating acceptable content validity, the reliability of the instrument was assessed and found to have an overall reliability coefficient of 0.821. The alphas of each of the factors were also computed to be: (a) attitudes toward teaching students with disabilities in inclusive settings = .803, (b) beliefs about professional roles and responsibilities = .863, and (c) beliefs about the efficacy of inclusion = .680.

According to Creswell (2008), test-retest reliability is a measure of the consistency of a test or a survey. This kind of reliability is used to determine the consistency of a test or survey across time. Test-retest reliability is measured by administering a test or survey twice at two different points in time (Creswell, 2008). The test-retest method was established for the study using a sample of 19 middle school regular education teachers with demographics similar to the 19 teachers in the study. The teachers were administered the two instruments, and 14 days later they participated in a second administration of both instruments. Survey scores were inserted into the Statistical Package for the Social Sciences (SPSS) version 19.0 data file. Next, SPSS computed the reliability coefficient for each instrument. The coefficient of stability was .83 for the IKT and .89 for the TATIS. According to Creswell (2008), both reliability coefficients are acceptable for research studies.

The data collection instrument for Research Question 3 was the Teachers' IPDM interview instrument. The interview purpose was to qualitatively determine whether teachers' knowledge and perceptions changed relative to best practices in an inclusion setting. It was organized into two sections. To enhance the validity of the IKT, TATIS, and IPDM interview instruments, content validity was established using 10 experts to review and to critique the instruments. The experts were educators.

Inclusion Professional Development Model

The Inclusion Professional Development Model (IPDM) had six topics that were addressed in the 9-week treatment period. The six modules were: (a) inclusion defined, (b) planning for individual student needs in the inclusive classrooms, (c) systematic instruction in inclusion classrooms, (d) peer relationships and support, (e) collaborative inclusive service delivery, and (f) evaluation (Halvorsen & Neary, 2009). The instructional strategies consistently used in each of the six modules were textbook readings and discussions, Internet searches of journal articles, and questions and answer sessions. These instructional strategies were repeated each week throughout the six modules. The instructional strategies were based on the andragogical model of adult learning and education which was developed by Malcolm Knowles (1984). The model is the basis for much of the adult learning theory.

Each module had a title. For example, the title of the Week 1 module was Inclusion Defined. Each module had specific measurable objectives. As an example, the three objectives for the Week 1 module were (1) understand the rationale for and the definition of inclusive education, (2) identify research-based practices for inclusive education, and (3) know several strategies for initiating and supporting best practices in inclusive education.

Teachers were assigned specific pages to read as homework from the Halvorsen and Neary (2009) six modules. During each Monday training session a summary of the readings on the topic was presented and discussion facilitated on the topic. For the Wednesday session, open-ended question and answer sessions on the topic were conducted. Each module had specific research-based instructional strategies for Monday and Wednesday that were designed to enhance the regular education teachers' personal self-efficacy. Bandura's (1977) social cognitive theory suggests regular education teachers with higher self-efficacy are more willing to try new teaching strategies learned though professional development, even those thought to be difficult to implement. Thus, teachers' self-efficacy may greatly determine if and how schools and districts plan, implement, and support successful professional development training (Bandura, 1986).

Week 1 module indicated that Monday's instructional strategies to achieve the module's objectives were: (a) presentation of a summary of pages 1 to 14, highlighting important information and strategies on the pages for the whole group discussion; (b) in small groups of no more than five teachers per group, teachers will surf the Internet in the school's technology laboratory and locate one or more journal articles related to the module and then discuss the article or articles in the small group; and (c) teachers will record in their personal journal about two pages of reflective notes on how to best apply in inclusive classrooms the information and strategies from today's session (book readings and journal articles). The instructional strategies for Wednesdays were: (a) in small groups teachers will share and discuss the reflective journal entries with each other; (b) one teacher from each group will present a summary of the small group's most important journal entries to the whole group; (c) working in small groups, each group will complete the five "Check for Understanding Questions" from Halvorsen and Neary (2009), page 15. Halvorsen and Neary questions were used as formative assessments. There were formative assessments for each module.

The instructional period was each Monday and Wednesday (3:30 p.m. to 5 p.m.) of the 9-week treatment period. If teachers were absent for one day of the 9-week training session, they were provided a convenient make-up session for the teachers. The final week included a review of the previous weeks. The total exposure time of the teachers to the IPDM treatment was three hours each week times nine weeks or 27 hours. The training closely followed the time line in the Appendix.

Design and Data Analysis

Quantitative research methodology and the single group pretest and posttest research design were the guide for data collection and data analysis for the Research Questions 1 and 2. Qualitative research methodology and the descriptive-interview research design were the guide for data collection and data analysis for the Research Question 3. Quantitative data for the Research Questions 1 and 2 were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics calculated for the two research questions were pretest and posttest means and standard deviations. The major inferential statistical model for the Research Questions 1 and 2 was the *t*-test for paired samples.

Qualitative data analysis for Research Question 3 followed Creswell's data analysis technique (Creswell, 2008). The interview data from each of the 10 teachers were copied from the instruments and organized by interview question. The interview data were coded and placed into categories. Themes were identified. A summary of the themes were used to respond to the pertinent research question (Gall, Borg, & Gall, 2007).

Results

Findings for Research Question 1

Research Question 1 asked, "Will the teachers' knowledge of best practices in inclusive classrooms increase from pretest to posttest as measured by the Inclusion Knowledge Test?" An example of a best practice from Halvorsen and Neary (2009) modules that was reflected in an item on the IKT was: Identify three types of prompts effectively used in inclusive classrooms, and identify the advantages and disadvantages of each prompt. Pretest and posttest scores were collected from the 19 regular education teachers using the Inclusion Knowledge Test (IKT).

Table 1 displays the 19 teachers' IKT pretest scores, posttest scores, and the amount of change from pretest to posttest. An examination of Table 1 findings shows each of the 19 teachers increased the IKT score from pretest to posttest. The highest increase was 60 points. The lowest increase was 38 points. Four other teachers had increases greater than 50 points.

Table 1

Inclusion Knowledge Test Pretest Score, Posttest Score, and Change Score

Pretest	Posttest	Change
26	76	50
30	78	48
31	74	43
22	80	58
19	75	56
28	76	48
26	74	48
12	72	60
27	78	51
33	71	38
32	75	43
14	72	58
22	70	48
24	76	52
20	69	49
19	73	54
15	70	55
21	70	49
23	71	48

The pretest mean was 23.37 with a standard deviation of 6.08; the posttest mean was 73.68 with a standard deviation of 3.17 (see Table 2). The posttest mean was greater than the pretest mean by 50.31 points. The effect size was calculated. Results yielded a Cohen's d = .982, depicting the strength of the difference between the two means was large with practical significance as well as statistical significance (Gay, Mills, & Airasian, 2009). Regarding the inferential statistics, the difference between the pretest and posttest means was 50.31. The t-test for paired samples calculations showed p value = .000 (see Table 2). Applying the statistical significance decision rule (Creswell, 2008), since the p value (.000) was less than the alpha value (.05), the difference of 50.31 was a statistically significant difference at an alpha level of .05 (Gall et al., 2007).

Table 2

Regular Education Teachers' Pretest and Posttest IKT Means and Inferential Statistics

Group	n	prem	posm	*t*-value	md	*df*	*p*-value
Teacher	19	23.37	73.68	38.90	50.31	18	000*

Note. n = number of teachers; prem = pretest mean; posm = posttest mean; md = mean difference; *df* = degrees of freedom; *p* = probability value.
*$p < .05$.

The best practices in the inclusive classrooms were reflected in the Halvorsen and Neary (2009) six modules. The six modules were: (a) inclusion defined, (b) planning for individual student needs in the inclusive classrooms, (c) systematic instruction in inclusion classrooms, (d) peer relationships and support, (e) collaborative inclusive service delivery, and (f) evaluation (Halvorsen & Neary, 2009). The instructional strategies consistently used by this researcher in each of the six modules were textbook readings and discussions, Internet searches of journal articles, and question and answer sessions. These instructional strategies were repeated each week throughout the treatment period for the six modules.

Findings for Research Question 2

Research Question 2 asked the question, "Were teachers' perceptions on inclusive classrooms changed from preimplementation to postimplementation as measured by the scores on the Teachers' Attitude Toward Inclusion Survey?" Table 3 displays the 19 teachers' TATIS pretest scores, posttest scores, and the amount of change from pretest to posttest. An examination of Table 3 findings shows each of the 19 teachers increased their TATIS score from pretest to posttest. The highest increase was 60 points. The lowest increase was 27 points. Ten other teachers had increases greater than 40 points.

The pretest mean was 48.95 with a standard deviation of 9.26; the posttest mean was 90.11 with a standard deviation of 1.76 (see Table 4). The posttest mean was greater than the pretest mean by 41.16 points. The effect size was calculated. Results yielded a Cohen's d = .951, depicting the strength of the difference between the two means was strong with practical significance as well as statistical significance (Gay et al., 2009).

Table 3

TATIS Pretest Score, Posttest Score, and Change Score

Pretest	Posttest	Change
48	86	38
51	88	37
56	89	33
47	89	42
49	90	41
26	89	63
47	88	41
62	89	27
31	91	60
65	93	28
46	90	44
44	91	47
49	91	42
59	92	33
47	91	44
48	90	42
57	91	34
50	91	41
48	93	45

For the inferential statistics, the difference between the pretest and posttest means was 41.16. The *t*-test for paired samples calculations showed *p* value = .000 (see Table 4). Applying the statistical significance decision rule (Creswell, 2008), since the *p* value (.000) was less than the alpha value (.05), the difference of 41.16 appeared to be a statistically significant difference at an alpha level of .05 (Gall et al., 2007).

Table 4

Regular Education Teachers' Pretest and Posttest TATIS Means and Inferential Statistics

Group	n	prem	posm	*t*-value	md	*df*	*p*-value
Teacher	19	48.05	90.11	19.75	41.16	18	000*

Note. n = number of teachers; prem = pretest mean; posm = posttest mean; md = mean difference; *df* = degrees of freedom; *p* = probability value.
*$p < .05$.

Bandura's (1977) social cognitive theory suggests regular education teachers with higher self-efficacy are more willing to try new teaching strategies learned through professional development, even those thought to be difficult to implement. The cognitive theory suggests that the ability to effectively implement the new teaching strategies can result in higher levels of self-confidence; increased confidence leads to higher self-efficacy. The confidence teachers gained from their participation in Halvorsen and Neary's (2009) six instructional modules appeared to have enhanced their self-efficacy and attitudes toward teaching inclusive classrooms. The confidence was reflected in the higher postimplementation TATIS scores and large effect size indicated by Cohen's *d* effect size indicator.

Findings for Research Question 3

Research Question 3 asked, "What will be the teachers' perceptions of inclusion practices based on the professional development training?" Postimplementation interview data were collected from 10 randomly selected regular education teachers using the Teachers' IPDM Interview instrument. To answer Research Question 3 with the interview data, overall the teachers' perceptions of inclusion practices based on the professional development training were positive toward working in inclusive classrooms. After the intervention implementation, overall teachers perceived themselves as competent to teach in inclusive classrooms, and they wanted to teach these classes.

There were important themes that emerged from the 10 teachers' interview responses. The most reoccurring theme was 9 of 10 teachers reported their current attitude towards teaching inclusive classes was a positive one. The second most reoccurring theme was 8 of the 10 teachers reported that IPDM instruction increased their knowledge of best practices in inclusive classes for work with all students.

Three additional themes were the teachers perceived (a) they enjoyed the training; (b) it was important to be aware that respect, consensus of leadership role, and supportive monitoring best benefit the inclusive classroom; and (c) it was important to keep in mind that the primary benefit of inclusive education was the fact that students had access to the core curriculum, as specified in IDEA 1997 and 2004, and to the variety of activities and routines.

The qualitative responses in Research Question 3 supported the quantitative responses in the first two research questions. For instance, in Research Question 3, the regular education teachers reported they perceived the professional development training on Halvorsen and Neary (2009) six modules increased their knowledge of best practices for teaching inclusive classrooms. The quantitative findings for Research Question 1 confirmed teachers' knowledge of best practices increased from preimplementation to postimplementation by 50.31 points as measured by the IKT.

The regular education teachers reported qualitatively in Research Question 3 that they enjoyed the professional development. Further, many teachers indicated their attitudes toward teaching inclusive classes became positive as a result of their participation in the training. The quantitative findings in Research Question 2 confirmed these qualitative findings by revealing teachers' scores increased on the TATIS from preimplementation to postimplementation by 41.16 points. The TATIS measured teachers' perceptions of their attitudes toward teaching inclusive classes.

Discussion

Teachers displayed knowledge of best practices from the Halvorsen and Neary (2009) six modules for effectively teaching inclusive classes. The best practices were reflected on the IKT. The best practices included how to collaborate with students and families to identify criti-

cal skill needs. Another best practice was to identify the advantages and disadvantages of each prompt. Teachers had knowledge of ways a collaborative model facilitated students' core curriculum access and meaningful achievement. They could identify best practices related to strategies educators and families could use to facilitate collaborative teamwork, including a process for effective team meetings. In their responses on the IKT, teachers had no problems writing ways to enhance classroom climate and strategies for creating a positive learning system. Teachers were cognizant of the key components of co-teaching and two approaches for implementation of co-teaching in inclusive classrooms (Halvorsen & Neary, 2009).

The enhanced general education teachers' knowledge of best practices and enhanced positive attitudes toward teaching in inclusive classrooms converged with the majority of the literature (e.g., Boutte, 2005; Dean & Behne, 2002; Lindsay, 2003; Mastropieri & Scruggs, 2000; Weisel & Tur-Kaspa, 2002). These studies emphasized that professional development on inclusive classes can increase student achievement and result in a more positive teacher attitude towards teaching inclusive classes. As an example, Mastropieri and Scruggs (2000) noted that the attitudes of teachers toward inclusionary programs are among the most important variables affecting these programs' successes.

Dean and Behne (2002) reported that of all the factors related to the success of inclusion, teacher attitude, teacher training, knowledge of best practices, and understanding of collaboration were arguably the most important. They went on to argue that while general education teachers may support the concept of inclusion, most of them did not feel that they could successfully integrate these students into their own classrooms without adequate training. In fact it was reported that some general education teachers did not share with special education teachers the belief that students with special needs have a basic right to receive their education in general education classrooms (Boutte, 2005).

Research, conducted by Weisel and Tur-Kaspa (2002), emphasized that the success of inclusion depends considerably on the teachers' and administrators' positive attitudes and knowledge of how to effectively work with students in inclusive classes. These researchers defined attitudes as an individual's tendency to positively or negatively respond toward an object, person, institution, or any distinct aspect in one's life. Lindsay (2003) reported that full inclusion and student success involved positive attitudes by teachers and administrators. Further, Lindsay (2003) suggested that general education teachers should incorporate workshops and training sessions that addressed the needs of special needs students and general education teachers' attitudes within the regular educational environment.

Conclusions and Recommendations for Practice

The findings from this study clearly showed the IPDM increased the knowledge and improved the attitudes of general education teachers in inclusive classrooms who participated in the study. Establishing successful inclusive classrooms in middle schools requires a clear vision, continued communication and support throughout the period of change, and the continued commitment of all involved in the change process. Special and general educators must be willing to share, learn, create, fail, and reinvent. This process requires trust and a willingness to take risks as shown by the 19 teachers in IPDM. New initiatives must be constantly evaluated as to their success and impact. Everyone involved in the new initiatives must be informed and receive adequate support. Responsiveness of the individual institutions is critical during the change process.

Effective changes do not come without a cost. Consistent monitoring and support require open communication, follow-up, and responsive action. Given special and general educators' already full plates, it is critical to clearly define their responsibilities and to commit the necessary time and resources for continued professional development. In a time of competing resources, increasing accountability, and ever-changing priorities, each educator must continue to be an advocate for positive change. Therefore, consistency and honesty among the special and general educators, and an absence of personal and professional agendas are critical.

Based on the findings of this study and observations in the IPDM project, conclusions and ideas for future professional development efforts focusing on integrating strategies into the middle school's inclusive settings were formulated. First, when teachers have a shared understanding of and goals for their students (personal knowledge), teaming is an effective model for promoting collaboration and planning among general and special education teachers. Time must be allocated for teachers to share personal knowledge about their students and teaching and to receive guidance from experts on topics. Second, struggling students, including students with learning disabilities, require individualized instruction and much practice. Teachers need strategies that fit the instructional needs of their students. As observed in the study, teachers will focus on using the best strategies if they view them as helpful for their students' needs even if these strategies are not perceived as a perfect fit with their curriculum and high-stakes assessment. Third, student progress monitoring should be included as part of strategy training to ensure that students are benefiting from the instruction. This is important because there will be a small group of students with disabilities severe enough to warrant more intensive, adapted instruction (e.g., smaller groupings, more instructional time, modified materials). Finally, professional development activities require a great deal of time. Time is needed for in-class modeling, preparing for instruction, and teacher planning. Teachers also need time to become comfortable with the professional development strategies and to implement them with their students.

The inclusion of students with disabilities is a matter of law. Although some may view it as an administrative headache, it is also an opportunity--an opportunity to provide a higher level of learning to those students while also increasing socialization with students without disabilities. To accomplish inclusion, collaboration among all stakeholders is essential. Administrative support is paramount, and time must be provided for true cooperative planning and discussion. Education is a team effort, and nowhere is this more evident than in the successful implementation of an inclusion program.

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Authors

Otelia Royster, EdD, is chairperson of the special education department and chairperson of the school leadership team at a middle school in North Carolina. She published one book on inclusion and co-published a journal article on SMART Board. Dr. Royster is a certified SMART Board trainer. Her research interests are in the areas of inclusion and technology. She received her doctorate from Nova Southeastern University.

Gary Reglin, EdD, is a retired professor of educational leadership from the University of West Florida. He published more than 50 articles in refereed education journals. Dr. Reglin authored four popular and widely used textbooks including, Achievement for African American Students: Strategies for the Diverse Classrooms. Currently, he serves as a dissertation chair and adjunct professor at Nova Southeastern University. His research interest is in the area of at-risk students.

Nonofo Losike-Sedimo, EdD, is a senior lecturer at the University of Botswana in Gaborone, Botswana. She published one book on telepresence and teaching in higher education institutions, 8 articles in refereed journals, and 2 book chapters related to teaching and learning. Her research interests are in the areas of teacher education and educational psychology. Dr. Losike-Sedimo received her doctorate from the University of West Florida.

Appendix

Time Line of the IPDM Modules, Objectives for the Module, Instructional Strategies, and Formative Assessment Questions

Week 1

a. Week 1 module of instruction is titled *Inclusion Defined;*
b. The three objectives for Week 1 module are (1) understand the rationale for and the definition of inclusive education, (2) identify research-based practices for inclusive education, and (3) know several strategies for initiating and supporting best practices in inclusive education.
c. The required readings to cover the three objectives are from Halvorsen and Neary (2009), pages 1 to 17.
d. Monday's instructional strategies to achieve the three objectives are (1) presentation of a summary of pages 1 to 14, highlighting important information and strategies on the pages for the whole group discussion; (2) in small groups of no more than five teachers per group, teachers will surf the Internet in the school's technology laboratory and locate one or more journal articles related to the module and then discuss the article or articles in the small group; and (3) teachers will record in their personal journal about two pages of reflective notes on how to best apply in inclusive classrooms the information and strategies from today's session (book readings and journal articles).
e. Wednesday's instructional strategies and formative assessment questions are (1) in small groups teachers will share and discuss the reflective journal entries with each other; (2) one teacher from each group will present a summary of the small group's most important journal entries to the whole group; and (3) working in small groups, each group will complete the five "Check for Understanding Questions" from Halvorsen and Neary (2009), page 15. An example of a question is, What research-based steps can be taken to assist regular education students in their interactions with the special education students in an inclusive classroom lab? and (4) teachers will discuss the five open-ended questions in small groups and submit the responses to all questions at the end of today's session.

Weeks 2 and 3

a. Weeks 2 and 3 module of instruction is titled *Planning for Individual Student Needs in the Inclusive Classrooms*.
b. The six objectives for Weeks 2 and 3 module are (1) describe an individual student planning process; (2) describe a process for collaborating with students and families to identify critical skill needs; (3) describe a number of ways to adapt the curriculum; (4) describe how to assess the current level of performance in general education activities and routines; (5) develop a support plan for students based on functional assessments, and (6) describe an effective team planning process for meeting individual student needs.
c. The required readings to cover the six objectives are from Halvorsen and Neary (2009), pages 51 to 85.
d. Monday's instructional strategies to achieve each of the six objectives are (1) presentation of a summary of pages 51 to 85, highlighting important information and strategies on the pages for the whole group discussion; (2) in small groups of no more than five teachers per group, teachers will surf the Internet in the school's technology laboratory and locate one or more journal articles related to the module and then discuss the article or articles in the small group; and (3) teachers will record in their personal journal about two pages of reflective notes on how to best apply in inclusive classrooms the information and strategies from today's session (book readings and journal articles).
e. Wednesday's instructional strategies and formative assessment questions are (1) in small groups teachers will share and discuss the reflective journal entries with each other; (2) one teacher from each group will present a summary of the small group's most important journal entries to the whole groups; (3) working in small groups, each group will complete the five "Check for Understanding Questions" from Halvorsen and Neary (2009), page 85. An example of a question is, What are some strategies a teacher can employ to facilitate prioritizing his time and efforts to develop meaning programs for the students? and (4) teachers will discuss the five open-ended questions in small groups and submit the responses to all questions at the end of the session.

Week 4

a. Week 4 module of instruction is titled *Systematic Instruction in Inclusion Classrooms*.
b. The four objectives for Week 1 module are (1) describe stages of learning and how they impact instructional strategy, (2) state at least four reasons for providing systematic instruction in inclusive classrooms, (3) describe how teaching might look from a learner's perspective, and (4) state the rationale for data collection.
c. The required readings to cover the four objectives are from Halvorsen and Neary (2009), pages 119 to 140.
d. Monday's instructional strategies to achieve each four of the objectives are (1) presentation of a summary of pages 119 to 140, highlighting important information and strategies on the pages for the whole group discussion; (2) in small groups of no more than five teachers per group, teachers will surf the Internet in the school's technology laboratory and locate one or more journal articles related to the module and then discuss the article or articles in the small group; and (3) teachers will record in their personal journal about two pages of reflective notes on how to best apply in inclusive classrooms the information and strategies from today's session (book readings and journal articles).
e. Wednesday's instructional strategies and formative assessment questions are (1) in small groups teachers will share and discuss the reflective journal entries with each other, (2) one teacher from each group will present a summary of the small group's most important journal entries to the whole group, (3) working in small groups, each group will complete the six "Check for Understanding Questions" from Halvorsen and Neary (2009), page 140. An example of a question is, How can teaching strategies be individualized for each student? and (4) teachers discuss the six open-ended questions in small groups and submit the responses to all questions at the end of today's session.

Weeks 5 and 6

a. Weeks 5 and 6 module of instruction is titled *Peer Relationships and Support*.
b. The four objectives for Weeks 5 and 6 module are (1) describe ways to enhance classroom climate and strategies in order to create a positive learning environment; (2) describe how classroom meetings can be used for proactive planning and problem solving; (3) identify and describe a variety of peer support and collaboration strategies and systems; and (4) describe informal as well as structured strategies for peer support at different age/grade levels, and distinguish situations where each is appropriate.

c. The required readings to cover the four objectives are from Halvorsen and Neary (2009), pages 157 to 177.
d Monday's (instructional strategies to achieve the objectives are (1) presentation of a summary of pages 157 to 177, highlighting important information and strategies on the pages for the whole group discussion; (2) in small groups of no more than five teachers per group, teachers will surf the Internet in the school's technology laboratory and locate one or more journal articles related to the module and then discuss the article or articles in the small group; and (3) teachers will record in their personal journal about two pages of reflective notes on how to best apply the information and strategies from today's session (book readings and journal articles) in inclusive classrooms.
e. Wednesday's instructional strategies and formative assessment questions are (1) in small groups teachers will share and discuss the reflective journal entries with each other; (2) one teacher from each group will present a summary of the small group's most important journal entries to the whole group; (3) working in small groups, each group will complete the five "Check for Understanding Questions" from Halvorsen and Neary (2009), page 177. An example of a question is, What would be the most difficult aspect of implementing school climate and/or peer collaboration strategies reviewed in this module of instruction? Why? What would be three possible approaches to resolve this difficulty? and (4) teachers discuss the five open-ended questions in small groups and submit the responses to all questions at the end of the session.

Week 7

a. Week 7 module of instruction is titled *Collaborative Inclusive Service Delivery System.*
b. The four objectives for Week 7 module are (1) identify and evaluate several inclusive service delivery approaches, (2) discuss ways a collaborative model facilitates students' core curriculum access and meaningful achievement, (3) define key characteristics of collaborative consultation, and (4) identify key components of co-teaching and a variety of approaches for implementation.
c. The required readings to cover the objectives are from Halvorsen and Neary (2009), pages 179 to 202.
d. Monday's instructional strategies to achieve the objectives are (1) presentation of a summary of pages 179 to 202, highlighting important information and strategies on the pages for the whole group discussion; (2) in small groups of no more than five teachers per group, teachers will surf the Internet in the school's technology laboratory and locate one or more journal articles related to the module and then discuss the article or articles in the small group; and (3) teachers will record in their personal journal about two pages of reflective notes on how to best apply in inclusive classrooms the information and strategies from today's session (book readings and journal articles).
e. Wednesday's instructional strategies and formative assessment questions are (1) in small groups teachers will share and discuss the reflective journal entries with each other; (2) one teacher from each group will present a summary of the small group's most important journal entries to the whole group; (3) working in small groups, each group will complete the six "Check for Understanding Questions" from Halvorsen and Neary (2009), page 201. An example of a question is, Imagine you are embarking on a co-teaching relationship with a colleague. Which approach to co-teaching would you be more comfortable with? What would be some of your first steps? Make a hypothetical action plan to address the areas/issues the two of you would need to address and resolve; and (4) teachers discuss the six open-ended questions in small groups and submit the responses to all questions at the end of today's session.

Week 8

a. Week 8 module of instruction is titled *Evaluation.*
b. The three objectives for Week 8 module are (1) suggest ways to adapt exhibitions and portfolio expectations for a student with specific disabilities; (2) provide the rationale for community-referenced standards-based curriculum and performance-based assessment approaches and describe types of progress measures for students with an without disabilities, including alternate assessment strategies; and (3) distinguish between school accountability and student-level or outcome data and describe how these intersect and relate to each other in the evaluation process.
c. The required readings to cover the four objectives are from Halvorsen and Neary (2009), pages 203 to 224.
d. Monday's instructional strategies to achieve the objectives are (1) presentation of a summary of pages 203 to 224, highlighting important information and strategies on the pages for the whole group discussion; (2) in small groups of no more than five teachers per group, teachers will surf the Internet in the school's technology laboratory and locate one or more journal articles related to the module and then discuss the article or articles in the small group; and (3) teachers will record in their personal journal about two pages of reflective notes on how to best apply the information and strategies from today's session (book readings and journal articles) in inclusive classrooms.
e. Wednesday's instructional strategies and formative assessment questions are (1) in small groups teachers will share and discuss the reflective journal entries with each other; (2) one teacher from each group will present a summary of the small group's most important journal entries to the whole group; (3) working in small groups, each group will complete the six "Check for Understanding Questions" from Halvorsen and Neary (2009), page 24. An example of a question is, Examine and critiques the alternate statewide assessment requirements and instruments used in your state and (4) teachers discuss the six open-ended questions in small groups and submit the responses to all questions at the end of today's session.

Week 9

a. Review
b. The objective is to review Weeks 1 to 8 and the six modules of instruction.
c. The required readings is all of the previous readings from Halvorsen and Neary (2009).
d Monday's instructional strategy is the presentation of a summary of all modules and the facilitation of whole group discussion.
e. Wednesday's instructional strategies are (a) a continuation of the summary of all modules, (b) small group review and presentation on all Check for Understanding questions and important journal reflections, and (c) debriefings and thanks to all participants for their support of the IPDM.
f. Teachers will be provided a copy of the posttest data collection schedule. All post-implementation data collection and one-on-one interviews will occur in the school's media center.

Halvorsen, A., & Neary, T. (2009). *Building inclusive schools: Tools and strategies for success.* Needham Heights, MA: Allyn & Bacon.