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Effective Professional Development of Teachers: A Guide to Actualizing Inclusive Schooling

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**Effective Professional Development of Teachers:
A Guide to Actualizing Inclusive Schooling**

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ABSTRACT

This article examines how inclusive education activities can be facilitated through coaching as a means of professional development. A review of literature on effective professional development practices is discussed, and a recent study focused on individualized peer coaching is examined.

Introduction

Creating an inclusive education for students with and without disabilities poses a specific challenge to the existing faculty who earned their teaching credentials in the days of segregated educational environment of special education and general education. The purpose of this article is to provide a review of the professional development literature and the beginning literature on inclusive educational practices so that in-service development of teachers can be more effective. An example of a recent study is provided.

Effective Professional Development

Teacher attitudes towards inclusion influence the sustainability of such practices in schools (Hammond & Ingalls, 2003; Wilkins & Nietfeld, 2004). Transitioning to inclusion requires teachers, administrators, and specialized staff to develop the necessary attitudes and skills to implement and sustain such practices (Frattura & Capper, 2006; McLeskey & Waldron, 2002; Sari, 2007; Stanovich & Jordan, 2002). The term professional development has varied definitions. Showers, Joyce, and Bennett (1987) stated that the purpose of professional development is to increase levels of knowledge to sustain and support new practice until it becomes embedded into the daily practice. The term professional development is referred to as the cornerstone for reform (Fishman, Marx, Best, & Tal, 2003). Traditionally, professional development is delivered through the *sit and get* approach (McLeskey & Waldron, 2002). The sit and get professional development relies on an *expert* in the field to model and disseminate various information to the audience (Desimone, 2009; McLeskey & Waldron, 2002). Generally, it is a onetime in-service where participants listen to the *cutting edge* information. This method for professional development relies solely on the participants to take their new knowledge and implement the information individually (McLeskey & Waldron, 2002). Professional development in the form of a onetime event may not sustain or penetrate into the system. With the sit and get traditional approach to professional development, teachers change their practices individually, causing a varied approach that often does not have a ripple effect on the school structure itself.

Best Practices in Professional Development

There is a paucity of research on what constitutes effective and meaningful professional development. Bull and Buechler (1997) and Desimone (2009) have outlined effective professional development qualities. These qualities include: (a) be individualized and school based, (b) utilizes coaching and other follow up procedures, (c) engages in collaboration, and (d) embeds practices into the daily lives of teachers.

School based Professional Development. Effective professional development enables teachers to actively initiate and carry out research in their own schools and classrooms (Cochran-Smith & Lytle, 1999). According to Desimone (2009), the most powerful teacher learning and application occur inside individual teacher's classrooms

through practice and self-reflection. Ongoing site visits to support inclusive schools and classrooms can provide teachers with a picture of inclusion (Roach, 1996). School based professional development allows for specific problem solving sessions in which teachers are able to work together to identify the needed resources and strategies to meet the needs of all the students in the classroom (Roach, 1996). Problem solving sessions focus specifically on the needs of each teacher and staff member and provide ongoing support and training.

Coaching and Follow-up Procedures. An essential element to professional development involves observations, peer support, and ongoing feedback to empower teachers to have a stronger belief and confidence in their teaching practices (Kennedy & Shiel, 2010). Peer coaching is defined as the assistance of one teacher to another in the development and furthering of teaching skills, strategies, and techniques (Denton & Hasbrouck, 2009; Kennedy & Shiel, 2010; Miller, Harris, & Watanabe, 1991). Peer coaching provides a safe environment for teachers to experiment with new strategies and skills and thoughtfully reflect and refine their capabilities (Kohler, Good, Crilley, & Shearer, 2001). Informal observations by a facilitator or coach allow teachers to collaborate and brainstorm ideas to strengthen their ability to meet the diverse needs of all students (Kennedy & Shiel, 2010; Villa, et al., 1996; 2013). Tschannen-Moran and McMaster (2009) indicated that follow-up coaching conversations enable teachers to process content and help highlight the teacher's skill level and implementation.

Collaborative Information. Implementing inclusion is an intensive process. Cooperative planning is a component of professional development that allows for educators to meet regularly, plan units, lessons, and differentiate and delineate roles and responsibilities necessary to facilitate inclusion. According to Fullan (2007), teachers are the most effective facilitators of change. Collaboration between general and special education teachers provides the framework for changing the way we meet the needs of all students. According to Bauvens and Hourcade (1996), consistent and collaborative planning occurs every week to every two weeks. These frequent meetings lead to an open and collaborative atmosphere where teachers can feel safe to share their concerns and brainstorm freely with their colleague which leads to more successful practice (Kennedy & Shiel, 2010; Villa, et al., 1996).

Embedding Practices into the Daily Lives of Teachers. Successful inclusion does not happen instantaneously. It is an educational process that requires ongoing questions, interrogating personal assumptions, and genuine reflection. Cochran-Smith and Lytle (1999) stated that collecting and analyzing *data* of daily life in schools is critical to professional development. Data collection can take various forms from journaling to problem solving sessions with colleagues; however, the importance of analyzing the data is to examine the change process throughout the various stages of implementation.
According to Bull and Buechler (1997), teachers have reported that professional development designed specifically to their needs in creating an inclusive classroom is most meaningful because the strategies can be implemented immediately (Roach, 1995).

This model is not often utilized because it is a slow, time consuming process that is based upon the needs of each individual school (Roach, 1995). Although the collaborative approach to professional development requires more time and effort, it has an effective change in teacher practices and student outcomes (Bull & Buechler, 1997; Kennedy & Shiel, 2010; Sprinthall et al., 1996). There is a critical need for a collaborative approach to professional development.

Teacher attitudes towards inclusive practices have been studied and researched for the several decades, yet the implementation of effective professional development has not been utilized. Collaboration and co-teaching are a key component to professional development.

Collaboration and Co-Teaching

Collaboration and co-teaching blur the traditional boundaries of general and special education (Friend, et al., 2010; Villa, Thousand, & Nevin, 2013). Although multiple barriers have been identified to inhibit collaboration, co-teaching is a vehicle for creating inclusive schools (Villa, et. al., 2013). According to Friend, et al. (2010), designing, implementing, and evaluating collaborative inclusive models preserve the civil rights of all students including students with disabilities. The challenge for schools and districts is to provide ongoing meaningful support to teachers in implementing a collaborative teaching model. Friend, et al. (2010) found that professional development can lead to successful and sustainable inclusion. As the field of special education continues to evolve and include students with disabilities in general education, the demands and accountability for student success has also increased. Effective collaboration among professionals may yield positive changes in the deep structure, changes in teacher attitudes, as well as improvements in the academic and social progress for all students (Villa, et. al., 1996).

According to Stover, Kissel, Haagm, and Shoniker (2011), for meaningful change to occur, teachers must have a voice in their own learning. Furthermore, at the core of professional development is a trusting relationship (Stover, et al., 20111). Coaching also needs to be differentiated in order for the content to be relevant to the needs and interests of their teachers. Every teacher brings to their classroom their own teaching style, experience and knowledge. Consequently, a one size fits all approach to professional development is not applicable to individual needs and learning nor does it lead to sustainable systemic change (Stover, et al., 2011).

Conceptual Framework for Coaching. Desimone (2009) outlined critical components for effective professional development related to coaching. Figure 1 delineates the conceptual framework and flow for coaching. The first critical component of effective professional development centers on content and active learning for teachers (Desimone, 2009). Engaging in active learning can take many forms but is typically characterized by interactive feedback, collaborative discussions, and problem solving sessions. These collaborative problem solving sessions generally consist of weekly meetings between three to five educators to develop and refine their teaching strategies and newly obtained skills (Miller et. al, 1991). A second critical component to

professional development entails collective participation in which teachers are able to collaborate with teachers from the same school and grade level (Desimone, 2009). Figure 1 describes the various coaching models that can be implemented in classrooms to change instruction and improve student learning.
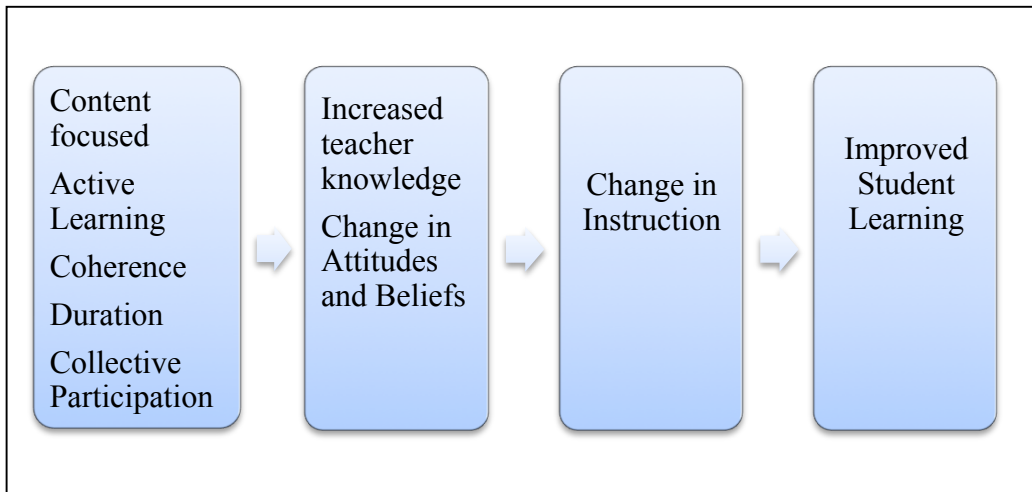

Figure 1. Coaching Conceptual Framework (Desimone, 2009)

Coaching models. The American Institute for Research (2004) published an overview of effective coaching models for increased student achievement and teacher development (see Table 2). Coaching models center on fostering an environment of collaboration and problem solving. Kohler et al., (2001) cited that as teachers participate in peer coaching, an environment of trust, support, and opportunities for change increase. The three models discussed in Table 1 include: (a) student-focused coaching, and (b) collaborative problem solving coaching. These three types of coaching models are a system of support for teachers to increase and improve student learning and achievement.

Table 1
Coaching Models

Model	Description
Student-focused coaching	Student focused coaching allows the coach to support the work of teachers as the facilitator while systematically addressing individual concerns (Denton & Hasbrouck, 2009; Kohler, et. al., 2001). Student focused coaching helps teachers problem solve academic and behavioral concerns by working with teachers to identify the root of the problem and develop a plan of action and assessment (Denton & Hasbrouck, 2009; Miller, 1991).
Collaborative problem solving	Collaborative problem solving coaches are

coaching	centered on a partnership with one or more teachers regularly meeting to addressing curriculum, student, progress, and other issues that educators face on a daily basis (Denton & Hasbrouck, 2009; Miller, et. al., 1991). The overall goal of problem solving coaching is to improve student achievement and increase instructional strategies for student success (Denton & Hasbrouck, 2009).

Examination of Similar Research Studies

Over the past twenty years, there has been an increase in research studies regarding teacher attitudes and the need for professional development (Burstein, et al, 2004; Hammond & Ingalls, 2003; Kennedy & Shiel, 2010; Sari, 2007; Tschannen-Moran & McMaster, 2009; Wilkins & Nietfeld, 2004). Shown on the next pages, Table 2 synthesizes research in the area of professional development and coaching models that has been conducted over the past twenty years. Although, the past studies have not specifically addressed inclusive practices, the studies have added to the body of literature indicating the need for peer coaching in sustaining teaching practices versus the traditional *sit and get* professional development (Lombardi & Hunka, 2001; Latz, Neumeister, Adams & Pierce, 2009; McLeskey & Waldron, 2002; Sarason, 1995; Tschannen-Moran & McMaster, 2009). Studies described in Table 2, both qualitative and quantitative in nature, have indicated the benefits of peer coaching and the relationship between teacher attitudes. Few studies were located in the literature on the effects of a coaching model on teacher attitudes towards students with disabilities and the increase in confidence and ability levels to carry out inclusive practices.

Research conducted by Kohler et al. (2001) and Domitrovich et al. (2009), indicated the need to develop the coaching model to enable teachers to refine and reflect sustainable strategies to support diverse learners. Similarly, in a study conducted by Sari (2007), teachers increased their knowledge through professional development regarding deafness, and as a result, their attitudes towards students with hearing impairments increased. Additionally, Latz et al. (2009), indicated that peer coaching for teachers helped to sustain their skills for differentiated instruction for gifted and talented students.

Table 2

Professional Development Studies

Author, Year, Number of Participants	Method	Findings
Baker, S., Gersten, R., Dimino, J.A., & Griffiths, R. (2004) N=8	Mixed-Methods	Examined the role of PD and self-efficacy and implementation of new knowledge. Professional development and on-going support to teachers implementing a PALS (peer assisted learning system) were major factors in building high quality programs.
Burstein, et al., (2004) N= 90	Qualitative	Sites moved toward inclusive practices. Approaches in implementation varied: Site staff development and 3-5 day professional development conducted by CDE. Due to variability in professional development implementation, more research with fidelity is needed. In order for effective change, restructuring and addressing the school's culture is needed.
Causton-Theoharis, J., Theoharis, G., Bull, T., Cosier, M., & Dempf-Aldrich, K. (2010) N=44	Mixed-Methods	The study indicated evidence of restructured services, shift in perspective towards the belief that inclusive reform benefits all students, increased effectiveness and collaboration, and improved strategies based upon PD. The study also identified the need to plan, the impact of negative teacher attitudes, and the need for a shared understanding and philosophy.
Domitrovich, C. E., Gest, S. D., Gill, S., Jones, D., & Sandford DeRousie, R. (2009). N=44	Quantitative	The study examined professional development and weekly coaching in the context of Head Start preschool programs. The results indicated that the overall effectiveness of the program is linked to teacher engagement during the training process. The study also indicated the importance related to creating support systems for teachers during the professional development.
Fisher, D., & Frey, N. (2001) N= 9 teachers N= 3 students	Mixed-Methods	Data from the study indicated that teachers must develop and implement a process for modifying curriculum and incorporate accommodations and modifications into daily routines.
Fishman, B. J., Marx, R. W, Best, S., &Tal, R. T. (2003)	Mixed-Methods	Professional development is critical in reform, but little empirical evidence support design and implementation.
Hadar, L. & Brody, D. (2010) N=8	Qualitative	This study outlines professional development focusing on collaboration, and student centered learning.
Hammond, H., & Ingalls, L. (2003) N=455	Quantitative	Results indicated a continued need to examine teachers perspectives towards inclusion to break barriers and to provide effective models for teachers.

Table 2 (*continued*)

Horne, P. E., & Timmons, V. (2009) N= 25	Qualitative	The study called for planning time and ongoing professional development to effectively respond to the diverse needs of students.
Kohler, F. W., Good, G., Crilly, K. M., & Shearer, D. D. (2001) N=4	Quantitative	Peer coaching enables teachers to develop and tailor their personal teaching styles and needs. Continue to develop coaching procedures to enable teachers to develop, refine, and sustain strategies to support the diverse needs of students.
Latz, A. O., Neumeister, S., Adams, C. M., & Pierce, R. L. (2009) N=20	Mixed-Methods	Peer coaching for teachers may help facilitate differentiated instruction for gifted and talented students.
Lee, O., Penfield, R., Maerten-Rivera, J. (2009) N=38	Quantitative	The study focused on the effect of fidelity of implementation in the context of professional development. Results indicated that fidelity of implementation did not indicate significant changes on science achievement results. The study indicated the importance of follow-up observations.
Lombardi, T. P., & Hunka, N. J. (2001) N=28	Mixed-Methods	The study indicated a need for professional development for pre-service teachers and opportunities to observe and interact with quality special education programs.
Miller, S. P., Harris, C., & Watanabe, A. (1991). N=6	Quantitative	Coaching intervention had a significant effect on improving teacher's skills and performance. Need for future coaching research and teachers collecting self reflective data.
Sari, H. (2007) N= 122	Quantitative	Pre-test/ post-test design. In-service Teacher Training program increased knowledge and attitudes about deafness and attitudes were significantly improved.
Tschannen-Moran, M., & McMaster, P. (2009) N=93	Quantitative	Professional development through follow-up coaching had the strongest effect on teacher self-efficacy beliefs for reading instruction and implementation.
Wilkins, T. & Nietfeld, J. L., (2004) N=89	Quantitative	The study indicated that intervention programs should have daily interactions with teachers to see an effect on teacher attitudes. Infrequent workshops and trainings have a limited sustaining effect.

Implications for Inclusive Schooling

Three themes emerge from this literature: engagement, reflection, and empowerment. Each theme is discussed below.

First, the most powerful and meaningful professional development for teachers directly ties to their level of engagement in the process through active particiaption in teaching, modeling, supporting, and assessment of student learning (Desimone, 2009; Hadar & Brody, 2010). Creating a culture of collaboration that is centered on questioning, learning, and mutual support allows for teachers to engage in critical conversations with colleagues that are centered on student learning (Hadar & Brody, 2010). Ongoing support and follow up meetings allow teachers to engage in collaboration and problem solving (Latz, et. al., 2007).

Second, **p**eer coaches provide ongoing observation and feedback to support and facilitate change. Self-reflection on individual activities and lessons provides a framework for meaningful and sustainable professional growth (Desimone, 2009; Domitrovich, et al., 2009). Effective professional development allows teachers to set goals that are meaningful to their own practice and time to self-evaluate (Domitrovich, et al., 2009).

Third, meaningful and sustainable professional devleopment empowers teachers to engage and collaborate with their colleagues to create communities of practice rather than working in isolation (Desimone, 2009; Latz, et al., 2009). As a result, general and special education teachers who learn differentiated instruction techniques together and with instructional coaches are able to focus on what works best to influence student ahcievement. and empower the teachers to refine their craft of teaching.

In summary, the benefits of effective professional development and coaching is evident in the literature. Wilkins and Nietfeld (2004) indicated that infrequent trainings and workshops regarding inclusion have a limited effect on changing attitudes. Rather, Wilkins and Nietfeld (2004) argued that time invested in quality resources and daily interactions and modeling are needed to change attitudes. Although research studies have been conducted in the past using professional development in various areas of education,specifically special education, individualized, coaching procedures in the area of inclusive practices have yet to be thoroughly researched (Hammond & Ingalls, 2003; Sari, 2007; Wilkins & Nietfeld, 2004).

An Example of Inclusive Professional Development

This study was conducted to: (a) fill the gaps identified in previous research studies regarding general education teacher attitudes towards inclusion, (b) address the lack of demographic information of the participants by including a demographic survey, and (c) address the need for training by providing professional development that is specific to the needs of the participating teachers. Research studies on teacher attitudes have indicated the need for teachers to receive adequate training and support through peer coaching, to implement and sustain inclusive practices (Baker, et al., 2004; Bauvens & Hourcade, 1996; Brady, et al., 1997; Cook, 2001; deBettencourt, 1999; Lombardi & Hunka, 2001; Shade & Stewart, 2001). However, there is a gap in the research that measures teacher attitudes post training. This research study attempted to bridge the gap

between teacher attitudes towards inclusion and teacher attitudes towards inclusion post support and training.

Research Question. To what extent is there a difference between teacher participation in inclusive professional development and perceived ability to carry out such inclusive practices, understanding of inclusive practices, willingness to carry out inclusive practices, and attitudes about students with disabilities?

Method. This study was conducted in three stages. In the first stage of the study, upon obtaining ethical approval, the Scale of Teacher Attitudes towards Inclusive Classrooms (STATIC) served as a pre-test and was administered along with a demographic survey to 121 elementary school teachers from a small southern California school district located in Orange County. Following the first stage, eight teachers volunteered to participate in an eight week Inclusive Professional Development (IPD) program. Participation was voluntary and was approved by the school site administrator. During the third stage of the study, the STATIC instrument was administered to 118 elementary school teachers from the same Orange County District and served as a post-test to measure the difference in attitudes between teachers who participated in IPD and teachers who did not participate in the professional development (NPD). In addition to the STATIC instrument, the participants of the Inclusive Professional Development Intervention were administered four open ended question survey regarding their experience and attitudes towards students with disabilities following the professional development.

Characteristics of the Participants

A total of 121 general education elementary school (K-6) teachers from a school district located in southern California participated in the study. The total pupil enrollment for the district in 2011 was 3,950 with a special education population of 389. Approximately 31.7% of the district's population was identified as Asian descent, 27% Hispanic descent, 27% European American descent, 3% African American descent, and 12% identified as Other Ethnicities not listed. Approximately 30.2% of the district's population received free or reduced lunch and 23% of the student population was classified as English language learners. The average class size for the district was 24.8 students with an average teacher-student ratio of 26 to 1.

General education teachers were selected for this study for multiple reasons: (a) they had knowledge of the general education curriculum, (b) their attitudes towards students with disabilities may have affected their engagement in inclusive practices, (c) their ability and willingness to carry out inclusive practices within the general education classroom may have affected the overall implementation of inclusive practices, and (d) their previous experience with inclusive practices may have affected their willingness to implement inclusive practices. The general education teachers in this study represented a range of diverse characteristics including: gender, cultural background, age, years of teaching, and experience working with students with disabilities.

Demographics of Comparison Group Pre-Test. The comparison sample was comprised of 121 teachers. Four of the surveys were excluded from the pretest analysis due to insufficient completion of questions. Of the remaining 117 respondents in the comparison group, 73.5% identified their ethnicity as European American descent, 12.8% Asian descent, 9.4% Hispanic descent, .9% African American descent, and 3.4% Other ethnicities not listed in the demographic portion of the STATIC instrument. Levels of education ranged from Bachelors Degree (44.4%), Masters Degree (49.6%), and Educational Specialist Degree (5.1%) to Ph.D. in Education (.9%).

The majority of the teachers in the comparison group had more than 10 years of teaching experience (n=81). The average class size in the school district was 31-40 students in upper grades (4-6) and 21-30 in primary grades (K-3). Of the 117 respondents, 40.2% had at least 2-3 students with disabilities included in their classroom this current school year, 17.1% with more than 5 students, and 12% with 1 student included in their classroom. The disability categories of the students included in the classroom ranged from learning disabilities (44.4%) to Autism (13.7%), behavioral differences (3.4%), and health and physical disabilities (4.3%).

Demographics of Comparison Group Post-Test. Because the surveys were anonymous, the post-test demographics are provided to demonstrate that although the groups are not the same, they are equivalent. The STATIC was distributed to all teachers in the district (n = 140) with a response rate of 83.6% (n = 117). For the post-test the response rate was 84.3% (n = 118). These results indicate a slight difference from the pre-test group due to attrition from pre to post intervention, however they are similar to the pretest response rate. Of the 118 teachers in the comparison group, 11% identified their ethnicity as Asian descent (n= 13), 1.7% African American descent (n=2), 5.9%, Hispanic descent (n=7), 77.1%, European American descent (n=91), and 4.2% Other ethnicities not listed (n=5). Levels of education ranged from Bachelors Degree (35.8%), Masters Degree (58.5%), and Educational Specialist Degree (4.2%) to Ph.D. in Education (.8%). Of the 118 respondents, 14.4% with more than 5 students, 39.8% had at least 2-3 students with disabilities included in their classroom this current school year, 20.3% with 1 student included in their classroom, and 14.4% identified 0 students included in their classroom.

Demographics of Intervention Group. Of the 8 participants in the intervention group, 12.5% identified their ethnicity as Asian descent (n=1), and 87.5% European American descent (n=7). The identified levels of education ranged from Bachelors Degree (37.5%), Masters Degree (62.5%). Years of experience for the intervention group ranged from more than 10 years of teaching experience (n=7) to 6-10 years (n=1). Of the 8 participants, 37.5% had 0 students with disabilities identified to have special needs, 37.5% at least 1 student, and 25% with 2-3 students. The participants were asked the number of students receiving special education services that had been included in their classroom throughout their teaching career; 12.5% identified 0 students with special needs, 37.5% identified 4-5 students, and 50% identified more than 5 students.

General education teachers from all six elementary schools were administered a 6-point Likert attitudinal survey measuring the overall attitude towards inclusive

practices. These teachers were also asked to volunteer their time and classrooms to participate in the study. Eight teachers volunteered to participate in an eight-week intensive inclusive practice professional development program with the support of their site administrator. The eight teachers were identified by the following criteria: (a) willingness to participate in inclusive professional development, (b) students with disabilities included in their classrooms or previous experience with students included, and (c) an administrator that supported inclusion. They ranged in years of service, current teaching assignment, and age. Seven out of the eight teachers who volunteered were from the same school in which two special day classes were housed on their campus, and the eighth teacher was from a school with the highest Resource Specialist caseload in the district. Each teacher volunteered their time and classrooms for observations and peer modeling. With the support of the school principal and the district administration, the researcher provided training in five core areas: curriculum, assessment, strategies, behavior management, and collaboration. A description of the coaching model is described below. To protect anonymity of the participants, pseudonyms were used, and limited background information was provided.

Instrumentation

Teacher attitudes, as measured by The Scale of Teachers Attitudes towards Inclusion Classrooms (STATIC) developed by H. Keith Cochran (1999), served as the dependent variable. The 20-item attitudinal survey contains a six-point Likert scale ranging from Strongly Disagree (0) to Strongly Agree (5). The measure was designed for both special and general education teachers for the comparison of attitudes among various groups of teachers. The instrument was normed on 481 teachers from school districts in the Southeastern part of the United States. The instrument identified four factors: Advantages and Disadvantages of Inclusive Education, Professional Issues Regarding Inclusive Education, Philosophical Issues Regarding Inclusive Education, and Logistical Concerns of Inclusive Education. Higher scores are indicative of positive attitudes and lower scores are indicative of negative attitudes, however no specific cut off scores are offered by the author of the instrument.

A Cronbach's alpha reliability coefficient of .89 for the STATIC instrument indicated good internal consistency for research purposes. Items to total correlations range from .26 to .51, with a standard deviation of .11, and a standard error of measurement of ±.04. Cronbach's alpha reliability co-efficiencies were calculated for each factor. Factor one has a reliability coefficient of .87, factor two .83, factor three .57, and factor four .62. Factor one and two were noted to have good internal consistency. Internal consistency for factor 3 and 4 were noted to be low (Mertens, 2010). The overall standard error of measurement for the STATIC instrument was ± 2.63 (Cochran, 1999).

Intervention Procedures

The initial IPD session took place during each grade level's weekly planning meeting. Each initial meeting began with the researcher providing a basic 30-minute overview of each of the five core areas of the intervention. The basic overview provided

the teachers with resource handouts for reference. The resource handouts included a basic overview of the core area, ideas, and strategies to implement in the classroom. Following the basic overview, a question and answer session between the researcher and the participants took place. The participating teachers then identified the areas in which they wanted further support. Subsequent meetings of professional development through coaching were then tailored to each individual teacher based upon their identified needs and were administered and mutually scheduled by the researcher and each participant. Follow-up and feedback sessions took place following the subsequent IPD meetings for approximately an hour.

The number of IPD sessions varied from teacher to teacher (see Table 3), and were tailored to the individual needs of each specific teacher and their unique understanding of inclusive practices (Kennedy & Shiel, 2010; Tschannen-Moran & McMaster 2009; Villa, et al., 1996). Whereas some teachers requested support and training in behavior management, others requested support in the areas of accommodating and adapting curriculum to the needs of their students. The purpose of IPD was to meet the unique needs of each teacher and to provide individualized support and coaching. Each teacher was able to customize their professional development and engage in active participation and implementation of skills. These professional development sessions were customized to meet the needs of each participant.

A procedural integrity checklist was completed by the researcher following each of the weekly coaching meetings with individual teachers to ensure internal validity, which included the date of the training, purpose, content, and outcomes of each training session. The researcher completed the checklist following each session and 98% of the steps were followed throughout the eight-week study. A total of 84 Inclusive Professional Development (IPD) sessions were performed across an eight-week span and contained training and individual peer coaching observation sessions at least once a week. Each individual participant was provided the opportunity to customize their IPD according to their specific needs. To protect anonymity of the participants, pseudonyms were used.

Table 3

Number Inclusive Professional Development Sessions for Each Participant

Participant Pseudonym	Curriculum	Assessment	Strategies	Behavior Management	Collaboration	Total Sessions
Carrie	2	2	2	2	1	9
Jamie	2	1	3	2	2	10
Janelle	1	1	1	4	1	8
Joyce	3	3	3	1	1	11
Brittany	3	3	2	2	4	14
Melanie	3	2	2	2	3	12
Melissa	3	2	2	2	3	12
Jane	2	1	3	1	1	8
Total IPD Sessions:	**19**	**15**	**18**	**16**	**16**	**84**

Research Design

The teachers sampled in this study were general education teachers (K-6) in a small North Orange County district located in Southern California. The methodological design that was utilized in this study was a quasi-experimental pre-post comparison group design. This methodological design was used to compare the differences between teacher attitudes towards inclusive practices who received the professional development intervention and a comparison group who did not receive professional development. Although the teachers were not randomly assigned to a specific group, all participants completed the STATIC instrument as a pre-test and a post-test.

Statistical Analyses

Cohen's *d* Effect Size. The overall group effect size was calculated using Cohen's *d*. Cohen's *d* is defined as the difference between the pretest and posttest means divided by the pooled standard deviation. According to Cohen (1988), .2 refers to a small effect, .5 refers to a medium effect, and .8 refers to a large effect. The Cohen's *d* for the STATIC results for the intervention group was .07, and .05 for the comparison group demonstrating medium to medium-large effect sizes. Utilizing Cohen's (1988) effect sizes, a small effect was found for Factor 2 (*d*= .33) and Factor 4 (*d*=.26) in the intervention group however, due to the limited number of participants (n=8), this effect should be interpreted with caution. No effect was found on the other factors for either the intervention or comparison group.

Reliable Change Index Analysis. The purpose of using *Reliable Change Index* (RCI) for the total score and each of the four factors is due to the fact that individual effect sizes can get lost in the group comparison (Busse, et al., 2010). The Reliable Change Index (RCI) was used to determine if improvement in an individual's score was due to the intervention, IPD, while taking into account the instrument's standard error (*Se*) which is derived from the internal consistency estimate (i.e., Cronbach's alpha) for the STATIC instrument (Busse, et al., 2010). The original RCI was calculated by subtracting the pre-test (x_1) from the posttest and dividing by the standard error of the measurement. Jacobson and Truax (1991) revised the formula to include the standard error of difference. The standard error of difference takes into account the spread of distribution of the change scores that could be expected between the pre-test and the posttest (Jacobson &Truax, 1991; Maassen, 2004). The revised RCI formula was calculated by subtracting the pre-test (x_1) from the posttest (x_2) and dividing by the standard error of the difference (S_{diff}).

This study utilized the RCI formula as outlined in Jacobson and Truax (1991), by subtracting the pre-test (x_1) from the posttest (x_2) and dividing by the standard error of the difference (S_{diff}). RCIs can be interpreted similar to a *z*-score by examining the difference between scores in relation to the variance (Elliott & Busse, 2004). RCIs quantify change in individual scores by taking into account the error of the measurement (Elliott & Busse, 2004). The RCI method is limited to a pre-post test design.

A reliable change index greater than 1.96 indicates that a posttest score reflects that an actual change has occurred and is unlikely due to chance (p<.05) (Jacbosen & Truax, 1991). In other words, a change of that magnitude is likely to occur by chance 5 out of 100 times (Jacobson &Truax, 1991). Busse et al. (2010) expanded on the interpretation to include magnitude as an effect estimate, delineating the following effects: ≥1.8 strong effect, .7 to 1.7 moderate effect, -.6 to .6 no effect, -1.7 to -.7 moderate negative effect, and ≤ -1.8 strong negative effect. Individual RCI total scores are interpreted and tallied for the intervention group on the pre-test and posttest and factor scores according to the STATIC instrument are provided in Table 2.

Results

Pre-and Post-Intervention RCI Total Scores

Individual pre-post total scores were calculated on the STATIC instrument for each participant in the intervention group demonstrated a strong effect was noted for 1 participant, a moderate effect for 1 participant, and no effect for 4 participants. No effect indicates that the change in scores from pre to post test for the 4 participants cannot be attributed to the intervention (IPD). Two participants noted a negative effect, 1 moderate negative effect, and 1 strong negative effect (marked by a decrease in total scores). The mean RCI for the overall intervention group was -.03. The comparison group overall mean RCI was .17 and mirrored Cohen's *d* for the group. In comparing the intervention group and comparison group's overall mean RCI, there was no significant effect identified in either group. The average total score of the intervention group was approximately 6 points higher indicating a more positive attitude towards students with disabilities, yet this difference was not large enough to result in a significant treatment effect.

Analysis by Factor. Each of the four factors was analyzed for the intervention groups.

Factor 1: Advantages and Disadvantages of Inclusive Education, This factor was designed to measure teacher attitudes towards including students with disabilities into the general education classroom. Factor 1 scores were calculated on the STATIC instrument for each of the eight participants. The mean intervention group RCI was -.20 with the comparison group's mean RCI = .07. A moderate effect was noted for 2 participants, no effect for 3 participants, and a moderate negative effect for 3 participants. No effect indicated that no change or very little change occurred from pre to post-test. Additionally, a moderate negative effect indicated that the teacher from pre to post test scored lower. It is important to note however, that the moderate negative response was within the mean item range of the instrument as outlined by Cochran (1999).

Factor 2: Professional Issues Regarding Inclusive Education. This factor was designed to measure the teacher's perceived ability to carry out inclusive practices within their classrooms. A moderate effect was noted for 3 participants in Factor 2, and 5

participants showed no effect. No effect for either group was found when comparing the group means on RCI values on either the intervention group or the comparison group.

Factor 3: Philosophical Issues Regarding Inclusive Education. This factor was designed to measure teacher beliefs and understanding in implementing inclusive practices. The overall mean RCI for factor 3 was -.10, indicating no effect. The mean RCI for the comparison group was -.003, indicating no effect. Within the intervention group, a moderate effect was noted for 1 participant, and no effect was noted for the other 7 participants.

Factor 4: Logistical Concerns of Inclusive Education. This factor was designed to measure the willingness of teachers to carry out inclusive practices within the general education setting. A moderate effect for Factor 4 was found for 3 participants, no effect was found for 4 participants, and a moderate negative effect was found for 1 participant. The overall mean RCI for the intervention group was .27 indicating no effect, and the comparison group's mean RCI was.13, also indicating no effect.

Discussion

The purpose of this study was to examine the effects of Inclusive Professional Development (IPD) through peer coaching and support on teacher attitudes towards students with disabilities. This study combined the work of previous researchers by implementing best practices in coaching as professional development as a framework for this study (Bull & Buechler, 1997; Cochran-Smith & Lytle, 1999; Desimone, 2009; Kennedy & Shiel, 2010; Kholer et al., 1997; Tschannen-Moran & McMaster, 2009).

In this study, the effectiveness of Inclusive Professional Development (IPD) was examined through peer coaching and support. The eight-week IPD began at the end of October, 2011 and concluded in January, 2012 (which included breaks for holidays). It was hypothesized that the IPD intervention would increase positive teacher attitudes towards students with disabilities, their perceived ability and willingness to include students with disabilities, and their understanding of students with disabilities.

Two of the five research sub-questions were partially supported in measuring a change from pre-test to post-test. However, three of the five research sub-questions did not show a change from pre-test to post-test for the intervention group. Factors 2, Professional Issues had an overall Moderate to No Effect for the eight participants in IPD. Similarly, Factor 4, Logistical Concerns indicated an overall Moderate to No Effect for 7 out of 8 participants. A moderate negative effect was noted for 1 participant.

The limited results of this study support numerous findings conducted by similar research studies on the importance of coaching as a means of professional development (Baker, et al., 2004; Burnestein, et al., 2004; Causton-Theoharis, et al., 2010; Domitrovich, et al., 2009; Fisher & Frey, 2001; Hadar & Brody, 2010; Hammond & Ingalls, 2003; Horne & Timmons, 2009; Kennedy & Shiel, 2010; Kohler, et al., 2001; Latz, et al., 2009; Lee, et al., 2009; Lombardi & Hunka, 2001; Miller, et al., 1991; Sari, 2009; Tschannen-Moran & McMaster, 2009; Wilkins & Nietfeld, 2004). The coaching model provided six individual teachers an awareness and increased ability to carry out inclusive practices within their classrooms (STATIC Factor 2). In addition, the inclusive

professional development through coaching provided 3 individual teachers with an increased willingness to carry out inclusive practices (STATIC Factor 4). In contrast, 100% of the participants in the coaching and in-service development reported they had positive experiences and a new appreciation for inclusive education practices, thus showing support for in-service activities that showcase best practices for inclusive strategies at the individual teacher level.

Study Limitations

Limitations relevant to this study include: (a) number of intervention participants, (b) the researcher as the sole IPD coach, and (c) the length of the intervention.

Number of Intervention Participants. This study was limited to one small elementary school district located in Southern, California and was a sample of convenience. Eight teachers volunteered to participate in the intensive IPD intervention. This potentially impacted the generalizability of the findings, given that the eight teachers volunteered, they may be more inclined to engage and benefit from the coaching model of professional development. It is speculated that the limited number of intervention participants was due to the intensity, customization, and follow-up coaching sessions. Teachers also volunteered their time outside of their school duties. This may have limited the number of teachers who were willing to put in additional time and effort to participate in IPD. This limitation was accepted for the purposes of this study in order to provide the participants with the level of support needed to meet the needs of each participant. Additionally, because there was a limited number of intervention participants, power could not be reached. Consequently, in order to measure reliable change, RCIs were calucalted.

Researcher was the Sole IPD Coach. This study utilized coaching as a form of professional development. Kohler et al., (2001) cited that as teachers participate in peer coaching, an environment of trust, support, and opportunities for change increase. To build an environment of trust, support, and opportunities for teachers to create change, the researcher was the sole intervention coach and thus, this is a limitation to this study. This limitation was accepted in order for teachers to feel supported and willing to utilize new strategies and methods in their classroom. In addition, by being the sole trainer, the researcher could maintain consistency in providing training fidelity however, this could have had an impact on the responses the teachers were willing to provide.

Length of Intervention. The time span for this study was eight weeks of intensive professional development. The eight-week time frame was chosen because it provided the teachers with the opportunity to receive the initial training, but also receive follow up sessions and coaching during the first trimester. This time frame was beneficial for both the teachers and the students because the teachers were coming back from summer vacation. Additionally, teachers were open to having the extra support because their class sizes were larger than previous years. Nevertheless, it was apparent that more

time and support were needed to allow teachers time to reflect and refine their implementation of inclusive strategies.

These limitations were accepted in the implementation of this study. However, future research should address these limitations. Increasing the number of participants can be addressed by providing training to additional IPD coaches. A trainer of trainer model prepares coaches in the five core areas of content and the key components of coaching. The trainer of trainer's model requires intensive training to ensure quality coaches but would provide additional coaches and in return additional participants.

Implications for Future Research

This study provides a foundation for future research and areas of further examination. Follow up research studies should include a longitudinal study of inclusive coaching. Eight weeks of intensive intervention is a short time span to change teacher attitudes. Although this study attempted to provide multiple interventions customized to the needs of each teacher, the eight weeks did not allow for deeper reflection or extended practice of the inclusive strategies taught. A longitudinal study across a school year (September to June) from pre-post test would provide teachers with opportunities to reflect and conduct peer coaching. A longitudinal study would provide time for teachers to support and problem solve collaboratively with each other in the context of their classrooms. A peer-coaching module would allow for teachers to refine their strategies and to support each other in sustaining inclusive practices and provide time to ensure actual behavior change.

Conclusion

The process of implementing change is difficult when the culture of a system is deeply rooted in values and assumptions that are contradictory to the new vision (Fullan, 2007; Tye, 1987). Not all educators believe that students with disabilities should be educated within the general education classroom and there has been a long history of segregated schooling for students with disabilities in the state of California, like many other places in the United States. Therefore, in order to reform the deep structure, teachers must create a shared vision for students with disabilities (Fullan, 2007; McLeskey & Waldron, 2002; Tye, 1987).

Every teacher is on a journey and in order to effectively reach teachers in providing inclusive practices in their classrooms, we as educators, mentors, researchers, and scholars, must meet them on their journey. As previously stated, attitude change towards inclusive schooling is a complex issue as it deals not only with teacher attitudes towards children with disabilities, but also with teacher confidence, skill levels, and years of segregated practice involving the deep structure of schooling. Traditional professional development methods such as *sit and get* methods have not been highly successful in providing the necessary changes in attitudes to make inclusive schooling a reality for children with disabilities. Consequently, it is essential to continue the search for new methods of professional development are essential to explore. The limited results of this study contribute to the perspective that individualized professional development, using a

coaching model, deserves greater exploration as a potential strategy for attitude change and skill development in teachers.

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