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Publication Date

2015

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UNIVERSITY OF CALIFORNIA
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The Impact of Performance Feedback on School Psychologists' Roles and SLD
Assessments

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

Education

by

Danielle Eryn Stomel

June 2015

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ABSTRACT OF THE DISSERTATION

The Impact of Performance Feedback on School Psychologists' Roles and SLD Assessments

by

Danielle Eryn Stomel

Doctor of Philosophy, Graduate Program in Education
University of California, Riverside, June 2015
Dr. Michael L. Vanderwood, Chairperson

The act of writing effective and comprehensive reports is one of the most time consuming tasks, and considered to be one of the most serious and underestimated problem areas facing practicing school psychologists. This Single- Case Design (SCD) study examined whether a functional relationship exists between highly structured performance feedback and various activities that school psychologists engage in; specifically the amount of time school psychologists engage in report writing activities, the knowledge of evidence-based practices related to SLD assessment, and an increased intervention focus in psychologists' psychoeducational reports in four groups of psychologists using a concurrent multiple baseline design. The results demonstrated a functional relationship between performance feedback and SLD report improvement, school psychologists' reported time engaged in various activities, and school psychologists' reported knowledge. Limitations of the study, implications for practice, and directions towards future research are discussed.

Table of Contents

Chapter 1

Introduction.....1

Purpose of the Study.....34

Chapter 2

Method.....36

Experimental Design.....36

Setting and Participants.....38

Measures.....41

Procedure.....47

Data Analysis.....52

Chapter 3

Results.....55

Discussion.....64

Limitations.....77

Chapter 4

Implications for Practice.....79

Future Research.....81

Chapter 5

References.....83

Tables and Figures.....96

Appendix A.....111

Appendix B.....	111
Appendix C.....	122
Appendix D.....	123
Appendix E.....	124
Appendix F.....	125

List of Tables

Table 1. 2x2 Table to calculate Φ	96
Table 2. Participant Demographics.....	97
Table 3. Growth on PRS-2.....	98
Table 4. Paired Sample T-Test for Groups.....	99
Table 5. Paired Sample T-Test for Individuals in Groups.....	100
Table 6. Change in time engaged in SLD activities.....	101
Table 7. Change in time engaged in alternative activities.....	102
Table 8. Change in scores on AKCS.....	103
Table 9. Reported barriers to change.....	104

List of Figures

Figure 1. Logic Model.....	105
Figure 2. The effect of performance feedback on school psychologists' growth in scores on PRS-2 for SLD reports.....	106
Figure 3. The effect of performance feedback on school psychologists' reported time spent in SLD related activities (in hours/week).....	107
Figure 4. The effect of performance feedback on school psychologists' self-reported time spent in alternative activities (in hours/week).....	108
Figure 5. The effect of performance feedback on school psychologists' percentage of knowledge as measured by AKCS.....	109

The Impact of Performance Feedback on School Psychologists' Roles and SLD Assessments

School psychologists play a critical role in providing services and resources that contribute to improving outcomes for students (Reschly, 2004). Such services include, but are not limited to, academic and behavioral assessment, intervention planning and implementation, consultation, and mental health (Watkins, Crosby, & Pearson, 2001; Ysseldyke, Burns, Dawson, et al., 2006). Furthermore, an ongoing goal for school psychologists is to improve services that are provided to students, by implementing practices that have empirical support (Kratochwill & Shernoff, 2004). Best practices and published research support school psychologists' to assume a broader role than acting as the "gatekeeper" of special education and shift towards implementing evidence-based practice in their assessment and intervention efforts (Bradley-Johnson & Dean, 2000; Kratochwill & Shernoff, 2004; Reschly, 2008). This change in role, ideally, would provide school psychologists with more time to spend providing alternative activities (e.g. consultation and mental health) to testing and psychoeducational report writing. However, current research has documented that a gap exists between research recommendations and implemented practice, specifically that school psychologists continue to dedicate the majority of their time to assessment, which limits their time to engage in alternative roles (Castillo et al., 2012; Eitel, Lamberth, & Hyman, 1984; Francis et al., 2005; Kratochwill & Shernoff, 2004; MacMillan, Gresham, & Bocain, 1998; Miller, McDougal, Volpe, Blom-Hoffman, Chafouleas, & Riley-Tillman, 2006; Robinson, 1998). Additionally, the practices that school psychologists use in assessment, as well as other activities, frequently lack empirical support and do not include best

practices (Kratochwill & Shernoff, 2004; Reschly, 2008). Although, various hypotheses of the causes of this research-practice gap have been proposed, research has not yet examined possible methods (e.g., performance feedback) that could be used to improve or narrow it, which would further lead to improved practice and better outcomes for students.

In an attempt to further school psychologists' impact on improving outcomes for students, research recommends implementing "evidence base practice" (Kratochwill & Shernoff, 2004). The term "evidence-based practice" (EBP) refers to as "a body of scientific knowledge, defined usually by reference to research methods or designs, about a range of service practices (e.g., referral, assessment, case management, therapies, or support services)" (Kratochwill & Shernoff, 2004, p. 3). The EBP movement could potentially advance the quality of services provided by school psychologists and lead to improved outcomes for students (Kratochwill, 2007). Kratochwill (2007) expressed that psychologists who are exposed to and embrace the concept of EBP will engage in more evidence-based assessments and recommendations.

Additionally, Kratochwill and Shernoff (2004) found that although data-based decision making are recommended in the literature, school based practices typically do not demonstrate EBP and suggest that the gap may be due to a lack of training, low acceptability of evidence-based procedures, a difference in theoretical paradigms, cost, and administrative barriers (Kratochwill & Shernoff, 2004). The problem with an increasing gap between research and practice is that as research findings apply less and less to the population of children being served, the practices found to be effective in

research will have even less of a chance of being implemented with fidelity in practice (Danielson & Doolittle, 2007; MacMillan et al., 1998). This research to practice gap is a current problem that needs to be addressed and empirically investigated. Figure 1 shows a logic model, which visually represents how school psychologists' use of EBP and intervention focused data leads to a potential increase in school psychologists time engaged in alternative activities and provides other educators with data that can be used towards making decisions regarding students' eligibility and services. Thus, the practices that school psychologists engage in, such as special education assessment, have direct and indirect effects on student outcomes (Bradley-Johnson & Dean, 2000). School psychologists are in a unique role to serve student needs; however, little progress has been made towards achieving the roles that has been called for in the literature (Bradley-Johnson & Dean, 2000; Reschly, 2008).

Role of School Psychologists

Evidence-based practice and school psychologists' current roles in the school setting have been more closely examined in recent years (Castillo, Curtis, & Gelley, 2012). The current roles that a school psychologists engage in include, but are not limited to testing/evaluations, 504 plan development, consultation, providing mental health services, intervention development (academic and behavioral), providing in-services programs for staff and/or parents (Castillo et al., 2012). These roles have shifted over time, as the need for various specialized skills and knowledge has widened beyond those once required of school psychologists. The ways in which school psychologists allocate their time provides an insight into their role at the school.

More specifically, in 1995, Reschly and Ysseldyke first discussed the paradigm shift that was to take place in the field of school psychology. This idea was further discussed in Reschly and Ysseldyke's chapter in *Best Practices IV* (2002), where they explain a vision of a different future for school psychologists that include conducting assessments with explicit ties to effect interventions, a shift towards outcome focused assessments, and outcome guided practice. Reschly continued to discuss this paradigm shift in a commentary (2004), as well as in the most recent edition of *Best Practices (V; 2008)*. In his view, the field of school psychology is engaged in a paradigm shift.

Further, the advocates of the paradigm shift agree that expectations and models for school psychological services are changing and the traditional psychometrician roles are expanding to meet the needs of schools in the areas of consultation and mental health (Reschly, 2004). Reschly (2008) argues for a paradigm shift in the role of the school psychologist and states that the future of school psychology will include less time spent in assessment and more time in intervention, mental health, and consultation related services. In this model, school psychologist practices shift from a correlational "refer-test-place" model to an experimental model that incorporates the use of problem solving and response to intervention (Reschly, 2008). This shift would move school psychologists' practice more towards EBP, as it involves intervention, skill-focused, outcome driven practices that would provide psychologists with more time to dedicate to other activities. Thus, the proposed role of the school psychologist will shift away from being a psychometrician to an active problem-solver involved in intervention, mental health, and consultation services.

Unfortunately, recent survey data do not indicate that the paradigm shift is occurring in practice, because if it was occurring there would be a decrease in time spent conducting assessments, as well as an increase in time spent in consultation, intervention, and mental health based roles (Reschly, 2008). Although some recent research indicates that referral rates and time in assessment decreases when schools and school psychologists implement a Response to Intervention (RTI) model (VanDerHeyden, Witt, & Gilbertson, 2007), overall trends demonstrate that the paradigm shift has not yet occurred. As such, practicing school psychologists are currently not engaging in the “new” roles that have been hypothesized in the research, but continue to spend time and resources in activities such as assessment. Therefore, the gap between evidence-based best practice and applied practice still exists, which effects school psychologists’ roles and limits their ability to increase their time in improving student outcomes in ways other than assessment.

Time allocation. School psychologists have the potential to promote and deliver the intervention focused services that are being requested by practicing psychologists and school staff; however, data collected suggested that although research has progressed towards an EBP focus, practitioners continued to report spending the majority of their time engaged in assessment related activities (Castillo et al., 2012; Hosp & Reschly, 2002; Reschly, 2000). Additionally, although the survey analyzed by Castillo and colleagues (2012) and Reschly (2000) reported that a significant percentage of psychologists’ time was spent in assessment related activities, the survey did not include items that directly assessed evidence-based practice or data-based problem-solving

approaches to assessment, which could indicate whether evidence-based practices were being implemented in the assessment process.

However, when school psychologists are able to dedicate time and efforts to consultative roles in the schools, student outcomes improve (Sheridan, Welch, & Orme, 1996). School psychologists are able to provide indirect consultation services that impact a broad range of individuals, which is more cost and time effective than a more direct intervention service (Sheridan et al., 1996). In addition to consultation efforts, school psychologists are considered to be the largest providers of mental health services to children because of their unique position in school settings (Burns et al., 1995). Not only has research shown that school psychologists' roles be broadened to include more than conducting assessments, but it has also that school staff (administrations, special education teachers, and general education teachers) would prefer that school psychologists engage in more diverse services, such as consultation and intervention; however, the amount of time that school psychologists dedicate to assessment frequently does not permit a significant amount of time to be dedicated these other roles (Watkins et al., 2001).

A need exists for school psychologists' roles to shift away from spending most of their time conducting assessments, as their unique skill base can be used to improve student and system outcomes in roles such as consultation and mental health (Reschly, 2000; Sheridan et al., 1996). Unfortunately, in practice, results have consistently revealed that school psychologists are still dedicating the majority of their time to assessment, which leaves little time for them to dedicate to other roles (Castillo et al., 2012; Eitel,

Lamberth, & Hyman, 1984). Kratochwill (2007) explained that school psychologists were in a unique position to offer students' services because their access to families goes beyond that of any other psychological specialty, unfortunately, most school psychologists' time is still spent on assessments (Castillo et al., 2012).

Therefore, because such a significant portion time is still being dedicated to assessment, it is important that school psychologists use their time in conducting assessments effectively and applying evidence-based practices to this activity that still dominates their profession. Hypothetically, when psychologists conduct more effective and efficient assessments, their time spent conducting assessments will decrease, which will lead to more time spent in other, more preferred activities. This decrease is thought to occur because skill-based assessments take place continuously as a student receives intervention, as compared to previous models that require psychologists to pull students and give the assessments on a one-to-one basis (O'Donnell & Miller, 2011).

Survey research. Survey research on school psychologists' job satisfaction and preferences have revealed that school psychologists wish to diversify their roles by decreasing the amount of time they spend in assessment and increasing the amount of time they dedicate to other activities such as consultation, intervention, and mental health support (Bramlett, Murphy, & Johnson, 2002; Sullivan, Long, & Kucera, 2011; Watkins, Crosby, & Pearson, 2001). Although psychologists report a desire to participate in non-assessment related activities, previous research has documented that school psychologists spend a significant amount of time involved in assessment related activities, with far less time spent on direct involvement with interventions and consultation (Reschly, 2000;

Reschly & Wilson, 1995). Literature suggests that school psychologists should and could assume a broader role in the schools than conducting assessments, however, previous survey research has revealed that psychologists spend approximately 50% of their time engaged in assessment related activities (Bramlett et al., 2002; Hosp & Reschly, 2002; Pelco, Ward, Coleman, & Young, 2009; Reschly, 2000). Additionally, survey research has revealed that the trend has not changed over time.

Every five years, NASP conducts a national survey of the field of school psychology regarding current demographics, context for professional practices, and professional practices. Castillo, Curtis, and Gelley (2012) reported findings from the 2009-2010 survey taken of the National School Psychologists Association (NASP) members. Results from this most recent survey showed that psychologists, on average, spent 47% of their time dedicated to special education evaluations (initial and triennial evaluations), which is consistent with findings from previous survey research (Bramlett et al., 2002; Hosp & Reschly, 2002; Pelco et al., 2009; Reschly, 2000), whereas only 16% of their time was used towards consultation activities, 19% of their time was spent participating in problem solving teams geared at designing intervention for special and/or general education, and less than 6% of their time was spent in counseling students. Although time spent in assessment related activities comprises most of psychologists' time, the survey revealed that psychologists reported conducting fewer special education evaluations than reported in previous surveys over the past 2 decades.

This decline may be due to the increase in application of intervention focus of general education service delivery models (e.g., multi-tiered systems of support or

response to intervention), which when implemented with integrity and fidelity, leads to less special education referrals, particularly referrals for students suspected of having a learning disability (Hoover, 2010; Kovalski, VanDerHeyden, & Shapiro, 2013; VanDerHeyden, Witt, & Gilbertson, 2007). Therefore, a pre-referral multi-tiered system of support leads to less referrals, which provide psychologists with less time spent conducting assessment. Additionally, models of SLD eligibility that integrate and utilize the intervention response to determine eligibility result in less time conducting comprehensive assessments (Kovalski et al., 2013).

Research has not yet examined the potential reasons for the research to practice gap or why the data indicates that the applied field school psychology has not moved towards the hypothesized paradigm shift and intervention focus. One hypothesized reason is that practicing psychologists lack the knowledge, skills, competency, and support necessary to shift towards intervention focused practice (Kratochwill & Shernoff, 2004; Miller et al., 2006). Stoiber and Vanderwood (2008) conducted a study to examine the practices of school psychologists and found that there was a practice gap between what school psychologists value and what they do in schools, and that they felt the least competence with their knowledge in academic intervention related domains. In other field, such as teaching, professional development and performance feedback have been used to narrow the gap in knowledge and competency (Kratochwill et al., 2007; Noell, 2010). Thus, it is conceivable that with guided and structured support, psychologists could gain the knowledge, skills, and confidence that are necessary in order to improve

their EBP and narrow the gap between research and practice, and thus participating in the paradigm shift.

Professional Development

As previously discussed, school psychologists are engaged in assessment practices for upwards of 50% of their time (Castillo et al., 2012); thus, it is extremely important that they are exposed to and understand the research-based recommendations and suggestions for conducting intervention focused assessments (Mastoras, Climie, McCrimmon, & Schwean., 2011). School psychologists may lack of information, knowledge, and training necessary in order to create the intervention focused assessments that are recommended EBP (Kratochwill & Shernoff, 2004; Miller et al., 2006). Additionally, administrative and practical barriers facing practicing school psychologists have hindered many from being able to engage in best practices, even when they are aware of the empirical support (Kratochwill & Shernoff, 2004). Thus, district and administrative support and exposure to current research and best practices are vital to improving assessment and report writing practices in school psychology.

Professional development (PD) is defined as learning activities related to enhancing skills needed to meet the occupational expectations (Kratochwill, Volpiansky, Clements, & Ball, 2007). During PD, an expert in the field leads the session(s) and focus is placed on the development of competencies, improving knowledge, skills, and proficiencies (Elman, Illfelder-Kaye, & Robiner, 2005). PD can improve practice, however evaluation efforts should follow professional development experiences in order to evaluate the benefit and learning that took place (Wnek, Klein, & Bracken, 2008).

Training school psychologists in EBP requires exposure to and understanding of research (Kratochwill et al., 2007). The goal is to merge scientific research and practice in order to improve student outcomes. When embedded within a system-change perspective, such as RTI, professional development will help to create an environment that can help sustain the given practice (Danielson & Doolittle, 2007).

Kratochwill and colleagues (2007) provided an overview of the role professional development plays in multi-tiered (RTI) systems. In their discussion, they emphasize that in implementation of RTI efforts and shifting towards an intervention, data-driven focus requires change on many levels, and professional development can play a key role in helping ease the shift and ensure a seamless transition. Professional development is key to enhancing the transition for schools and districts to make a shift towards data-driven decisions. However, currently there is no “standard practice” for implementing professional development.

Additionally, Kratochwill and colleagues (2007) discussed components for effective professional development stating that the core features related to the content activities include active learning, content focus, and coherence. Additionally, the National Staff Development Council (NSDC, 2007) created 12 standards of professional development that were broken down into 3 categories: Context Standards, Process Standards, and Content Standards. These standards consolidated the research pertaining to staff development into a format that guide administrators and trainers in the planning, design, and evaluation of professional development programs (NSDC, 2007). These standards are designed for professional or staff development with teachers.

Although these standards have been suggested, research to examine their utility and effectiveness is lacking. Additionally, these standards are intended for use for professional or staff development with teachers, and unfortunately, no research has examined the application of rigorous professional development on the practice of school psychologists. However, the literature clearly shows that school psychologists are eager to obtain more specific professional development and feedback on their current practice (Wnek et al., 2008).

Professional development to improve psychologists' practice. Although research on the effectiveness of professional development has been conducted with teachers (Guskey, 2002), little research has examined the impact of professional development on school psychologists. Wnek and colleagues (2008) surveyed 1,000 members of the National Association of School Psychologists (NASP) and examined 336 survey responses in order to determine school psychologists' perceived professional development needs. The results from the survey revealed that school psychologists desired more professional development related to assessment and intervention linkages, and less professional development in the area of neuropsychology and low incidence conditions. Thus, the implications from this study revealed that school psychologist report a desire for professional development activities that can be used to assist them in linking their assessments to interventions and for direction on how to use their assessment results to drive intervention. To provide psychologists with specific information on how to link their data, a method such as performance feedback, which has been documented as successful in other fields (e.g., teaching), may be effective in

providing specific information to practitioners in order to improve current practice (Noell, 2010).

Additionally, previous research and commentaries have documented that one day training or workshops, which are typical in school districts, do not lead to long-lasting behavior change for teachers (Desimone, Porter, Garet, Yoon, & Birman, 2002; Guskey, 2009; Kinkead, 2007). Research has not demonstrated whether these one-day in-services are effective and lead to lasting effects for school psychologists, however, because research has documented that these methods are not effective for teachers, it can be assumed that it leads to similar results for school psychologists. Thus, a method that has been found to be effective in changing practitioners' behavior (e.g., performance feedback) may be a more cost-effective and efficient method of professional development.

Performance feedback. Performance feedback is currently the most well supported consultation procedure for increasing intervention implementation in school settings for teachers (Noell, 2010). Research on performance feedback has not been executed previously with school psychologists; however, there is extensive research to show its effectiveness with teachers (Noell, 2010). Typically, performance feedback involves a consultant observing a teacher's instruction and providing feedback to the teacher on his or her implementation progress and student progress in order to increase teacher's self-efficacy and his or her perceived effectiveness of the intervention (Gresham, 1989). The consultant meets with the consultee for 5 to 10 minutes on a weekly basis to review treatment integrity and student data (Noell, 2010).

Performance feedback can be traced back to the behavioral concept of operant conditioning. The concept behind operant condition is that behavior change occurs as result of responding to an environmental stimulus, and the behavior is a result of an individual making association between the behavior and consequences for that behavior (Cooper, Heron, & Heward, 2007). Applied to performance feedback, in order to increase a consultee's behavior, the presentation of data may act as the trigger and reinforcer. Thus, the presentation of the baseline data may trigger increases in the desired behavior due to an objective demonstration of the discrepancy between the desired behavior and the actual performance. Data presented at each subsequent meeting, along with behavior specific praise, act as a positive reinforcement of the behavior change.

Previous research has documented the effectiveness of performance feedback on teacher behavior change (Noell, Witt, Gilbertson, Rainer, & Freeland, 1997; Noell, 2010; Witt, Noell, LaFleur, & Mortenson, 1997). In a multiple baseline single case design, Witt and colleagues (1997) provided performance feedback to four general education teachers implementing an academic performance intervention. In this study, each teacher implemented an academic intervention with a student with performance deficits. The teachers were provided explicit training on how to implement a reinforcement-based intervention, which consisted of didactic training with consultant and teacher, student training with consultant supervision, and practice time. After the training, baseline data were collected on the integrity to which the teachers implemented the intervention through permanent products. During the intervention phase, performance feedback was provided to the teacher through daily consultation. A maintenance phase took place after

the intervention phase, where the teacher implemented the intervention independently. The results of this study indicated that after the initial training the teachers implemented the intervention with 100% fidelity, however, during the baseline phase the integrity began a downward trend. Once the intervention, performance feedback, phase was introduced, the trends increased and maintained at high levels during the performance feedback phase. This trend continued upward for 3 of the 4 participating teachers. This study indicates the effectiveness of performance feedback on the increase of intervention integrity, not only during the intervention phase, but also after the intervention has been removed.

Following this initial study, a series of studies were conducted and published, indicating the effectiveness of performance feedback on teachers' intervention implementation and treatment integrity (Mortenson & Witt, 1998; Noell et al., 1997; Witt, Noell, LaFleur, & Mortenson, 1997). Noell and colleagues (1997) replicated Witt and colleagues' (1997) study, but provided less intensive pre-intervention training. The results of this study were similar to those of Witt and colleagues (1997), in that all three of the teachers showed a downward trend in treatment integrity during baseline, and when performance feedback was introduced, the trend in the data increased for the intervention and maintenance phases. Mortenson and Witt (1998) also replicated the initial study conducted by Witt and colleagues (1997), but decreased the use of performance feedback from daily to weekly. The results of this study indicated that for two of the four teachers, performance feedback decreased during the baseline phase and increased during the intervention/performance feedback phase.

Burns, Peters, and Noell (2008) conducted a study, which extended the use of performance feedback and applied the procedure to problem solving teams. This study examined the effects of performance feedback on the enhancement of implementation fidelity of the problem-solving team process. In this study, problem-solving teams (PST) were provided with performance feedback based on a 20-item checklist created from the literature. The study used a multiple baseline design across schools with three participating schools. Thus, the study used the team in its entirety as a unit of analysis, rather than individual members of the team. Baseline was collected for all of schools by observers completing the 20-item checklist. The principle investigator introduced performance feedback. She provided the team with the data and discussed individual items from the checklist in order to reinforce the correct implementation by the PST members and to point out those items that were omitted. The meetings took place once or twice per month. The results from this study indicated a stable baseline and an upward trend for all three schools during the performance feedback phase. Thus, this study supports the extended use of performance feedback in order to increase behaviors of groups of individuals (Burns et al., 2008).

Additionally, a systematic review conducted by Scheeler, Ruhl, and McAfee (2004) of published research examined performance feedback to teachers, in order to determine the attributes for effective performance feedback. The results of this review indicated that promising practices for feedback to teachers included feedback that was specific, positive, and/or corrective. Their study found that general feedback was not as effective as specific feedback and that specific feedback resulted in a change of teaching

behavior. Specific feedback that was positive and corrective resulted in an increase in the amount of time teachers spent on targeted direct instruction teaching behaviors (Scheeler et al., 2004).

Performance feedback has been found to increase the effects of professional development on teachers; however, research has yet not investigated the potential effectiveness of performance feedback on improving practice of school psychologists. Although, as discussed previously, there is a need for improved professional development and psychologists have requested more focused, applicable professional development activities that are similar to practices used in performance feedback (Danielson et al., 2007; Wnek et al., 2008).

It is hypothesized that professional development in the form of performance feedback can be applied to improve school psychologists' practice and increase their use of EBP. Because school psychologists are not in the classrooms, previous models of observing treatment integrity and providing treatment integrity based on the observations and student data would not be appropriate. Current data suggest that psychologists spend the majority of their time engaged in assessment related activities and it is in this area that has been suggested needs improvement in order for psychologists to engage more in alternative activities (Castillo et al., 2012; Reschly, 2008). School psychologists engage in a variety of tasks (record review, interviews, observations, testing) when conducting assessments, thus a method of documentation for the process that took place during the assessment is necessary in order to measure these activities.

Comprehensive Assessments

In their role of assessment, school psychologists are heavily involved in individual decision making processes that affect students' social, behavioral, and academic outcomes. School psychologists are predominantly involved in decision-making activities through conducting comprehensive assessments for special education eligibility (Salvia, Ysseldyke, & Bolt, 2010). The data gathered by school psychologists during the comprehensive assessments are used by Individual Education Plan (IEP) teams to make eligibility and service-based decisions (Mastoras et al., 2011). The decisions made by school psychologists during the data collection process are important and determine the information the team uses to make high-stakes decisions. The movement toward evidence-based assessment emphasizes the existence of empirical evidence that the techniques are reliable, valid, and have clinical utility (Goldfinger & Pomerantz, 2014).

Upon completion of the assessment process, school psychologists write a psychological or psychoeducational report in order to share and disseminate their findings (Groth-Marnat & Horvath, 2006). These reports document and summarize the student's current skill levels and current deficit areas, thus providing current data from which the team can make informed decisions regarding the student's educational experience and future interventions (Mastoras et al., 2011; Zins & Barnett, 1983).

Psychoeducational report. The psychoeducational report can be seen as a source of documentation for what practices occurred during the assessment process. Its purpose is to serve as a formal document that summarizes and conveys relevant data that was

gathered in order to help current and future service providers make appropriate educational decisions for the student (Brinkman, Segool, Pham, & Carlson, 2007; Wiener & Costaris, 2012). This final product is a powerful tool that can influence or change the decisions being made about the student being evaluated (Michaels, 2005). The act of writing effective and comprehensive reports is considered to be one of the most serious and underestimated problem areas facing school psychologists (Zins & Barnett, 1983). Unfortunately, very little empirical research has been conducted to investigate data-based practice in psychological assessment and report writing in schools (Pelco et al., 2009).

It is important to consider that the amount of time dedicated to psychoeducational assessment and report writing varies by how disabilities, especially Specific Learning Disabilities (SLD), are conceptualized in the district (Reschly, 2000). Changes in SLD eligibility from a discrepancy model to a Response to Intervention model (RTI) may provide psychologists with less time spent in assessment and report writing, thus leaving more time for consultation and intervention activities (Reschly, 2000). In using a traditional model, psychologists often spend numerous hours in assessment and report writing, as compared to practices based on empirical evidence (i.e., RTI), which result in a reduction of time spent assessment related activities (Hosp & Reschly, 2002; Reschly, 2005).

Traditional, refer-test-place models of assessment frequently do not meet the needs of schools, teacher, parents, and students, whereas models driven by outcomes and that focus on evidence-based interventions applied through a problem solving process provide useful data that can be applied beyond an eligibility decision (Reschly, 2004).

Additionally, the NASP Practice Model (2010) recommended assessment practices that implemented a problem-solving approach, such that identification leads to an operational definition of needs, linked assessment to service delivery, and an evaluation of the effectiveness of services (NASP, 2010). Unfortunately, previous research has not directly examined practicing school psychologists' use of data-based, intervention focused, problem-solving approaches in assessments (Castillo et al., 2012).

It is essential that psychologists engage in best practices when conducting assessments and writing reports in order to for their efforts to be as efficient and effective as possible. Specifically, time and resources may be preserved, in addition to leading to more effective, outcome-driven results when psychologists engage in evidence-based practice for assessing for eligibility for SLD (Kovaleski et al., 2013; Reschly, 2005). Additionally, because students with Specific Learning Disabilities (SLD) account for approximately 50% of all students identified with disabilities in U.S. schools, the assessment process used for SLD has the potential to impact school psychologists' practice (NCLD, 2011; Reschly, 2008).

SLD Assessment

Legal standards require that evidence-based decision-making is used throughout the assessment processes for SLD eligibility; however, as discussed previously, research has revealed that there is a large gap between research recommendations and practice (Francis et al., 2005; Kratochwill & Shernoff, 2004; Mallin, Beimcik, & Hopfner, 2012; Miller et al., 2006; Robinson, 1998). Additionally, according to *Best Practice in School Psychology V*, "there is no standard battery for determining the presence of an SLD"

(Lichtenstein, 2008, p. 309), and the process of identifying a student as having an SLD is considered one of the most difficult diagnostic tasks (Benson & Newman, 2010). However, recent research examining SLD eligibility and legal regulations have documented the need for the process to focus more on intervention response and skill deficits, and less on cognition and ability (Fletcher et al., 2001; IDEA, 2004; Kovaleski et al., 2013).

Shift towards intervention and skill-based focus. In recent years, legal regulations and best-practice have emphasized the need for SLD assessment to become more intervention focused (IDEA, 2004; NASP, 2011). Due to the lack of an SLD “battery” to facilitate classification, and the continued criticism of the discrepancy model (Fuchs, Mock, Morgan, & Young, 2003; Gresham & Vellutino, 2010; Vaughn & Fuchs, 2006), the federal government modified the regulations for determining the existence of an SLD with its most recent revisions of the Individuals with Disabilities Education Improvement act of 2004 (IDEA, 2004). Although states specifically adopted criteria for determining whether a child has an SLD as defined by IDEA, the revision limited states by prohibiting them from *requiring* the use of a severe discrepancy between intellectual ability and achievement, mandating that states permit the use of a process based on the child’s response to scientific, research-based intervention, and allowing the use of other alternative research-based procedures for determining whether a child has an SLD. Additionally, the underachievement must not be the result of exclusionary factors. In summary, the newest revision of IDEA allows for schools to choose to use a “Discrepancy Model Approach,” a “Response to Intervention” approach, or an alternative

research-based approach for determining whether a student has a Specific Learning Disability.

This movement stems from decades of empirical research that has failed to demonstrate support for the notion of aptitude-by-treatment interactions (ATIs), which were thought to provide unique instructional practices that were identified through testing (Kovaleski et al., 2013; Reschly, 2008). The theory behind ATIs was that by improving students' deficits in specified areas of processing, gains in academic skills would be attained; however, empirical research does not support this notion (Kovaleski et al., 2013). Unfortunately, although research does not support ATIs, the practical application of this theory is still commonly used in schools today to identify students as learning disabled, under the title of a "discrepancy approach" (Reschly, 2008).

The prevalence of SLD has been on a steady decline since the introduction of IDEA (2004). Recent statistics have shown that in 2007 approximately 50% of students with disabilities were classified as SLD, in 2009 that number reduced to 42%, and in 2011 it reduced again to 41% (NCLD, 2011). These findings are consistent with research findings that state using an RTI model for general education leads to less special education referrals and less assessment of students that do not qualify (VanDerHeyden et al., 2007).

Discrepancy model. A discrepancy model defines SLD as an unexpected underachievement, measured by the difference between a student's Intelligence Quotient (IQ) and achievement scores which is attributed to a psychological processing deficit (California Education Code, Part 30, Section 56337; Dombrowski, Kamphaus, &

Reynolds, 2004; Kavale & Spaulding, 2008). In this model, the emphasis is placed on assessment scores, thus the psychoeducational reports typically include assessments of intelligence, achievement, and in some states processing; in addition to providing evidence that the deficit is not caused by exclusionary factors (Reschly & Hosp, 2004).

Although widely used, this current model has undergone significant criticism (Fuchs et al., 2003; Lyon et al., 2001; Vaughn & Fuchs, 2006). According to the authors of a paper presented at the Learning Disabilities Summit (Fletcher et al., 2001), the discrepancy between IQ and achievement is neither a necessity nor sufficient in identifying students with SLD. Additionally, the President's Commission on Excellence in Special Education (2002) emphasized the importance of identifying and intervening early, simplifying the identification process, using universal design in accountability tools, and the need for intervention, thus de-emphasizing and critiquing the necessity of using IQ tests in the process of identifying students as having an SLD. Sternberg and Grigorenko (2002) and Peterson, as well as Shinn (2002) highlighted significant flaws in the discrepancy model. One of the findings concluded that IQ assessments do not necessarily capture the entire construct of intelligence, thus questioning the utility of these measures in eligibility decisions. The tests used in this model do not typically measure instructional outcomes, but instead focus on IQ, which, as discussed, does not lead to useful instructional recommendations (Kovaleski et al., 2013). The criticism and lack of support for the discrepancy model led policymakers, researchers, and practitioners to consider an alternative approach to SLD identification, one that incorporated instruction and intervention.

RTI model. A Response to Intervention (RTI) model has been suggested as an alternative method to determine eligibility, in response to the overwhelming criticism of the discrepancy model (Fuchs et al., 2003; Kovaleski et al., 2013; Vaughn & Fuchs, 2006). This model places emphasis on screening, teaching, intervening, and progress monitoring and is considered to be the leading alternative practice to identifying students as learning disabled (Burns, Appleton, & Stehouwer, 2005; Fuchs et al., 2003; Kovaleski et al., 2013; VanDerHeyden, 2010). Those who advocate an RTI approach views learning difficulties contextually and in light of the educational and instructional variables (Harvey & Struzziero, 2008). Kovaleski and colleagues (2013) argue that “the use of RTI in diagnosing SLD gives us [educators] an opportunity to quantify the value of SLD diagnosis and drive assessment and intervention efforts in schools to improve learning, reduce risk of failure, and generally ensure the consequential validity of SLD” (pp. 13).

In an RTI model, skill-based assessment tools are used to progress monitor and examine the impact that various instructional factors have on students’ achievement. The use of skill-based assessment is supported throughout the literature and is associated with an increase in student achievement (Fuchs & Fuchs, 1986; Stecker, Fuchs, & Fuchs, 2005). Using skill-based assessments allows educators to consistently monitor the impact of intervention and modify instruction as needed (Deno, 2003; Fuchs, Mock, Morgan & Young, 2003). Skill-based assessments provide evidence of the impact of empirically based interventions executed with the student, as well as repeated documentation of a student’s progress and achievement.

The data can reveal potential, consistent lack of growth, despite the attempts of various empirically based interventions, suggesting the student has a learning disability. An RTI model for eligibility, thus, ensures that a student's lack of progress is not due to instructional factors. Furthermore, skill-based assessments can be used to document compliance with "treatment validity," which states that a student should not be placed in a special education setting without prior evidence showing that the student's achievement is impacted more positively in the more restrictive environment than in the general education classroom (Fuchs, Fuchs, & Speece, 2002).

In an RTI model, psychologists' reports include evidence of the student's rate of learning and whether it lags behind that of peers', despite appropriate instruction and intervention in general education, which has led the team to commit to the evaluation for SLD (Lichtenstein, 2008; Kovalski et al., 2013). Specifically, these comprehensive reports include a history of screening, progress monitoring data, changes in intervention, as well as a standardized achievement test, which provides sufficient evidence of low achievement that is not due to sensory impairments or other disabilities (Fletcher & Vaughn, 2009; Francis et al., 2005; Reschly, 2005). Because the data in an RTI model are obtained directly from the intervention results, the reports include a clear link to the intervention. Furthermore, the skill-based assessment data provide a history of response to various empirically based interventions, which can be used by teams to inform future intervention. Therefore, the information provided in these reports include assessment data that are directly linked to instructional practice and intervention, and illustrate that the

causes are not due to instructional factors from repeated data-based documentation that was collected during previous intervention attempts with skill-based assessments.

Furthermore, research supports intervention-focused, skill-based assessments that directly inform practice (Reschly, 2008), and approaching assessments from a problem-solving perspective results in the most useful data for the team to base their decisions (Lau, Sieler, Muyskens, Canter, VanKeuren, & Marston, 2005). When school psychologists shift their attention from focusing on “what the problem is” to “how the problem can be solved” or under what instructional or environmental conditions can the student’s problems be minimized or improved, the results are more effective (Lau et al., 2005). Some authors suggest that the goal of the assessment in schools should not only be to classify students, but more importantly to inform intervention (Reschly, 1980; Tallent, 1993). Reschly (1980) stated those assessments that do not “result in effective interventions should be regarded as useless...” (p. 842). Unfortunately, the transition towards intervention-focused practice has been a struggle, and as discussed previously, the gap between research and practice has only grown wider in recent years (Castillo et al., 2012). Additionally, the vital components of an intervention-focused SLD comprehensive assessment are frequently not present or sufficient; however, in the law and research, there are components that must be included (Mastoras et al., 2011; Pryzwansky & Hanania, 1986).

Issues related to Policy. Additional factors that impact practice and changes in current practice are related to policy (Castillo et al., 2012). The National Association of School Psychologists recommends the school psychologist to student ratio fall between 1

and 500-700 when school psychologists are engaged in a the delivery of comprehensive and preventative services (NASP, 2013). Unfortunately, most school psychologists' ratios heavier than that recommendation, with national average estimates (for 2009-2010) falling at 1:1383 to (Curtis et al., 2012). Other issues that many impact change include district policy, such as support and or limitations that the district provide in terms of supporting employees in changing their current practice. These policy practices may support or limit a school psychologist's willingness and capacity to include evidence-based and best practices into their current practice.

Components in Comprehensive SLD Assessments

Psychoeducational reports typically include the referral question, background information, assessment results, and conclusions and/or recommendations (Lichtenberger, Mather, Kaufman, Kaufman, 2004). Each of these sections includes pertinent information that constructs a portrait of the student, and is then used by IEP teams to inform decisions that will impact that student's education. As a whole, successful assessments reflect a linking of assessment results to intervention and serve as an informative aid in the IEP team's decision-making process (Reschly, 1980).

Best practices suggest that comprehensive assessments for SLD should contain data collected ecologically garnered through various methods, sources, and settings (Salvia, Ysseldyke, & Bolt, 2010; Tallent, 1993). These data should provide an accurate and in-depth description of the student's current level of skills (Lichtenstein, 2013). Potential components of the data could be gathered through methods including: 1) a review of the student's records; 2) interviews, 3) observations, and 4) appropriate testing

(RIOT; Christ, 2008). In addition, the data should be collected in various domains including: 1) instruction; 2) curriculum; 3) environment; and 4) the learner (ICEL; Christ, 2008). Additionally, the best decisions are made based upon a broad collection of data from multiple sources (Salvia, Ysseldyke, & Bolt, 2010).

Referral question. A sufficient referral question presents the reason for referral in an explicit, objective, and measurable terminology that is written in language that is objective and concise (Brinkman et al., 2007; Groth-Marnat, 2009; Lichtenberger et al., 2004). This question or statement defines the mission of the assessment and justifies the acquisition of psychological information (Tallent, 1993). The purpose of the assessment should be clear and answered with use of the assessment tools that the psychologist has selected (Tallent, 1993). It is best practice for the referral question to be relevant, parsimonious, testable, and useful to guide instruction and intervention (Christ, 2008). All of the subsequent sections should reflect this referral question and, in part, answer it (Mastoras et al., 2011).

Record review and background information. The information provided in the record review and background section should be relevant to the referral question. Too much information is unnecessary, however too little information may not define the purpose of the assessment (Tallent, 1993). It is important for the reports to include enough pertinent information to support the referral question. Within the background information, many reports include information about students' past and present levels in the classroom setting and the effect that present and past instructional programs have had. These statements can be very informative of future interventions if there are data to

support them, and they can provide the IEP team with evidence of previously effective or ineffective instruction (Pryzwansky & Hanania, 2002).

Observations. The eligibility criteria for SLD require that the team provide “information from an observation in routine classroom instruction” (IDEA, §300.311[b]). The observation provides information regarding the classroom ecology, teachers’ instructional quality, and the student’s engagement with academic curricula (Kovaleski et al., 2013). Observation data should be operationally defined and measured objectively (Kovaleski et al., 2013). Although narrative data is frequently used, this type of data recording provide are subjective, only some broad sense of events occurring during the observation period, and lack often precision (Kovaleski et al., 2013).

Exclusionary factors. The Individuals with Disabilities Improvement Act (IDEA, 2004) requires that exclusionary factors be addressed prior to assessment. Assessing the inclusionary and exclusionary factors for SLD can be an extremely error-prone process, when data-based decision making is not used (Kovaleski et al., 2013). The exclusionary factors were set in place so that the SLD category for eligibility did not become a “catch all” and that students who were not truly disabled were not falsely identified as SLD (Kovaleski et al., 2013). The psychoeducational reports should supply data that addresses whether or not the underlying problem is due to visual, hearing, or other biological concerns, as well as cultural factors, environmental or economical disadvantages, limited English proficiency, or motor disability, intellectual disability, emotional disturbance, and lack of appropriate instruction (IDEA, 2004). Screening, evaluation, and verification are used in order to rule out other conditions as the primary cause of a student’s lack of

academic success (Kovaleski et al., 2013). It is important to include data that support each of the exclusionary and instructional factors, in order to accurately discern that the student's lack of academic progress or success is not due to factors outside of the child that cannot be remediated.

Lack of appropriate instruction. IDEA (2004) requires teams to document that the student's underachievement is "not due to lack of appropriate instruction in reading or math" (§300.309[b]). These legal regulations require support that students have received "essential components of reading instruction" (§300.309[b]), and if that requirement is not met, the student cannot be considered eligible as a student with a learning disability. This process can be extremely error-prone in discrepancy models, however, in RTI models, diagnostic accuracy is improved in order to rule out this exclusionary factor (VanDerHeyden, 2011). Specifically, VanDerHeyden (2011) reports that screening alone did not lead to more accurate decisions; however, implementation of both screening and instructional trials led to more accurate decision-making. In an RTI model, universal screening data can be used to evaluate the effectiveness of Tier 1 instruction and progress monitoring data can be used to evaluate the adequacy of Tier 2 and Tier 3, all of this data can be used to evaluate whether the student in question received appropriate instruction prior to the SLD assessment.

Intervention results and progress monitoring. In defining SLD, the law requires "data that demonstrate that prior to, or as a part of, the referral process, the child was provided appropriate instruction in regular education settings, delivered by qualified personnel" as well as, "data-based documentation of repeated assessments of

achievement at reasonable intervals, reflecting formal assessment of student progress during instruction, which was provided to the child's parents" (IDEA, 2004). The process of pre-referral interventions and progress monitoring is not only a legal requirement, but also time and cost effective, reduces the likelihood of assessing false positives, and provides valuable information about students' skill levels (Fuchs & Fuchs, 1986; Lichtenstein, 2008).

Assessment results. The assessment tools used in the comprehensive assessment will, ideally, reflect the referral question and attempt to answer part of that question. Clear links between the referral questions and the answers to those questions are paramount (Groth-Marnat, 2009; Mastoras et al., 2011; Wiener & Costaris, 2012). Because one goal of the assessment is to inform future interventions, the assessment results should be able to be linked to intervention development (Batsche, Castillo, Dixon, Forde, 2008). The evidence-based assessment movement emphasizes the importance of choosing valid and reliable instruments for testing and those that inform future instruction (Goldfinger & Pomerantz, 2014). Researchers have found that reports that draw a clear link between the referral question and corresponding answers are favored by teachers and parents over those that are less clear (Mastoras et al., 2011). As discussed previously, reports are written with the intention of being read by the IEP team; thus, the language in which they are written, particularly the assessment results, should be clear, understandable, and free of technical jargon (Brenner, 2003; Harvey, 2005; Pelco et al., 2009; Tallent, 1980, 1993). Furthermore, the results should be discussed in a way that explicitly specifies what the child could and could not do given his or her current skill

level (Lichtenberger et al., 2004). Because the assessment and report should be considered as a means to another goal (intervention), the data presented should be used to generate ideas that will improve the student's outcomes (Zins & Barnett, 1983).

Conclusions and recommendations. The conclusion and recommendation section of the psychological report is viewed as the most important (Brenner, 2004; Brinkman et al., 2007; Harvey, 2006). This section should clearly integrate the information gathered, have specific references to the questions stated in the reasons for referral, and the focus should be outcome-based (Brenner, 2003; Tallent, 1993). An effective conclusion summarizes the data that were used to investigate the referral question(s) and bridge the assessment findings to the recommendations (Litchenstein, 2013).

Additionally, recommendations should be written clearly and in a way that the reader is convinced they are appropriate given the assessment results and that implementation is feasible (Harvey, 2006). In 1988, Reschly stated that in the future, indication of a successful assessment would be whether it has a strong link with intervention, not merely its ability to classify students. Salvagno and Teglassi (1987) found that teachers desire and prefer recommendations that provide specific guidelines for implementation and are easy to follow. The IEP team and teachers should be able to use the recommendations to assist them in teaching the student based upon his or her current skill level.

Unfortunately, teachers are often dissatisfied with psychological reports because the recommendations in the reports are "unusable" or uninformative (Tallent, 1980). One

study found that across all areas, the probability that a psychologists' recommendation would be carried through the IEP to the daily lesson plans was only 16 in 100 (D'Amato & Dean, 1987). Including evidence-based recommendations that are directly linked provides the IEP team with feasible, useable suggestions that can be implemented in the classroom (Mallin et al., 2012; Mastoras et al., 2011; Wiener & Costaris, 2012).

Limitations of Previous Research

Commentaries, reviews, and other articles regarding where the field of school psychology should be headed (Reschly, 2000; Shapiro, 2000) and issues related to the research-practice gap (Francis et al., 2005; Kratochwill & Shernoff, 2004; MacMillan et al., 1998; Miller et al., 2006; Robinson, 1998) are abundant, however there has been no research conducted to examine the effectiveness of possible interventions (i.e., performance feedback) on school psychologists' practice. The results of research are not useful if practicing school psychologists are not adequately trained in applying the findings to their practice (Danielson & Doolittle, 2007). Although it is well documented that school psychologists should be using an intervention-focused, data-driven, problem-solving approach in their SLD assessments, in order to use their time more effectively, no published studies have directly examined ways to improve current practice of school psychologists (Mastoras et al., 2011; Pryzwansky & Hanania, 2002).

Additionally, previous research has examined psychological reports, as well as surveys of school psychologists time; however, no published research has specifically examined both, and whether the hypothesis that when school psychologists engage in intervention focused SLD assessment, their time spent conducting assessments will

decrease, thus increasing the amount of time that can be spent in alternate activities (i.e., consultation, intervention, and mental health services; (Bramlett et al., 2002; Castillo et al., 2012). Because psychologists reportedly spend up to 50% of their time engaged in assessment and report writing tasks (Bramlett et al., 2002; Hosp & Reschly, 2002; Hutton, Dubes, & Muir, 1992; Pelco et al., 2009; Reschly, 2000), it is imperative for research to further explore methods that can be used to improve and increase the use of data-driven, intervention focused psychoeducational reports, which will benefit psychologists, IEP teams, and student outcomes. Previous research on psychoeducational reports has been descriptive in nature and none of the results from a thorough literature search have utilized rigorous methodological procedures. Additionally, a commentary by Danielson and colleagues (2007) expressed the necessity for high quality, specifically targeted professional development focused on using an RTI model for SLD eligibility and using RTI as part of a comprehensive evaluation. Thus, there is a gap in the research, in which previous studies have not yet examined the effect of intensive and focused professional development, or performance feedback on school psychologists' practice. Thus, empirical research is needed in order to examine the effects of targeted performance feedback on practicing school psychologists' role in schools.

Purpose of the Study

The purpose of this study was to examine the effects of a performance feedback intervention on the improvement of school psychologists' time, knowledge, and use of intervention focused data in SLD psychoeducational reports. The logic model (Figure 1) provides a visual representation of the current study. This model indicates the hypothesis

that when school psychologists are exposed to performance feedback, they will collect more intervention focused data, which they will use in their psychological reports. The performance feedback will also lead to more knowledge of EBP, which will result in psychologists spending less time in assessment activities and more time engaging in mental health, intervention, or consultative services. The increase in intervention focused reports will provide the IEP team and teachers with more data-based information that can be used towards intervention planning, service allocation, and special education eligibility. As such, this study examined the proposed functional relationship between a specific performance feedback intervention and decreases in psychologists' time spent in SLD related assessment activities. More specifically this student examined whether performance feedback could lead to an increase in time spent in alternative activities, an increase in school psychologists' knowledge, and an increase in EBP used in psychoeducational SLD reports. The following research question were addressed:

- **Research question 1:** Is there a functional relationship between providing performance feedback to school psychologists and an increase in the use of intervention-focused data in the SLD psychoeducational reports, as measured by the PRS-2?
- **Research question 2:** Is there a functional relationship between providing performance feedback related to intervention focused SLD reports to school psychologists and a decrease in their time spent on SLD assessment related activities?
- **Research question 3:** Is there a functional relationship between providing

performance feedback related to intervention focused SLD reports to school psychologists and an increase in their time spent on consultative and/or mental health activities?

- **Research question 4:** Is there a functional relationship between providing performance feedback related to intervention focused SLD reports to school psychologists and an increase in their self reported knowledge of and competency in applying EBP related to SLD reports?
- **Research question 5:** What factors do practicing school psychologists report create barriers to their implementation of EBP and intervention/skill focused SLD psychoeducational reports?

Method

Experimental Design

A concurrent multiple baseline single case design was used to examine the impact of performance feedback on school psychologists' roles. Single case designs (SCDs) are experimental designs that are used to demonstrate experimental control within a single participant (Kennedy, 2005). In these designs, participants serve as both the control and the experimental participant. Multiple baseline designs involve a series of A-B designs and utilize two or more baselines that are established concurrently, and the independent variable is sequentially introduced across the baselines (Kennedy, 2005). Single case designs use rigorous degrees of experimental control, demonstrated through multiple replications of the effect (Kennedy, 2005; Kratochwill et al., 2010).

Recently, more rigorous standards have been established (Kratochwill et al., 2010; APA Division 16). The What Works Clearinghouse (WWC) standards are considered to be the most rigorous and detailed standards that are currently published, and thus will be used to guide the design of this study. The WWC standards state the following: 1) The independent variable must be systematically manipulated; 2) the dependent variable must be measured systematically and repeatedly over time and inter-rater agreement should be collected for at least 20% of the observations, with at least 80% agreement; 3) at least three attempts to show an effect (phase changes) should be made; 4) multiple baseline designs should include a minimum of 6 phases with 3 points of data within each phase to meet the standards with reservations and five points in each phase to meet the standards without reservations (Kratochwill et al., 2010). Designs that meet these design standards include ABAB designs, multiple baseline designs with at least 3 case, and alternating treatment designs with at least 3 treatment changes (Kratochwill et al., 2012).

Horner and colleagues (2005) provide quality indicators of SCD methodology. This study used these guidelines in order to structure the design and implementation of the experiment. Under these guidelines, intervention is considered to provide sufficient data and to be considered evidence-based when the methodology of the study meets the standards and a causal relationship between the intervention and the dependent variable is demonstrated through at least three phase effects, and the effect is replicated across cases (Horner & Kratochwill, 2012; Kratochwill et al., 2012).

A limitation to SCDs is the issue of effect size (Maggin, O'Keeffe, & Johnson, 2011). Currently, there is no effect size for SCDs that can be directly compared to effect sizes for group design studies (Kratochwill et al., 2012; Maggin et al., 2011). Effect sizes from SCDs are typically larger than those produced from group designs because of the autocorrelation of repeated measures, which allows for less variability within subjects relative to between subjects (Maggin et al., 2011).

Setting and Participants

Districts. Participants were selected from a convenience sample of school districts in Southern California with a connection to the university. Participants included school psychologists from two districts who volunteered to participate in the study. The first district, which included three groups of psychologists, included a total of 35 school psychologists and represented a student population which was 85.8% Hispanic/Latino, 6.1% African American, and 4.8% White/Caucasian. 33.4% of the student population was considered to be English language learners. Eighty two percent of students were from social-economically disadvantaged backgrounds (i.e., qualify for free or reduced lunch). The second district included a total of 22 school psychologists and had a student population which was 41.8% Hispanic/Latino, 41.4% White/Caucasian, and 7.17% African American. Thirty-six and a half percent of the student population were considered to be English language learners, and 57% from social-economically disadvantaged backgrounds (i.e., qualify for free or reduced lunch).

School psychologists. As previously discussed, a convenience sample of school psychologists was recruited on a volunteer basis. Prior to the study beginning, school

psychologists met with the principle investigator and were informed of the study, completed the demographic questionnaire, and gave their written consent. They were informed that in order to encourage attendance and minimize attrition, at the end of each session there would be a lottery and chance to win a gift card. In total, 20 school psychologists participated in this study and four groups of psychologists were formed. The first district included 15 school psychologists that volunteered to participate in the study. The 15 psychologists were split up into three groups for the purpose of this study. The three groups did not interact (meetings were set at different times), and received the treatment at the different times, and thus were treated as different groups. The fourth group of school psychologists included five volunteers from the second district. A demographic questionnaire was collected from all participants (based on survey from Castillo et al., 2012; See Appendix A). The total sample included 15 females and 5 males. The average age of the participants was 39.9 ($SD= 8.98$). The average years of experience as a school psychologist was 8.4 ($SD=5.52$). Thirty percent spoke and delivered services in another language (e.g., Spanish, Farsi, American Sign Language [ASL]).

Group 1 consisted of six school psychologists initially, however after the second meeting, one participant left the study due to conflicting obligations. As such, a total of five school psychologists completed the study in Group 1. For this group, three of the psychologists were assigned to elementary school sites, zero were assigned to middle school sites, and two were assigned to high school sites. The average psychologist to student ratio for Group 1 was 1:1,366.67. The group included 4 females and 1 male, the

average age was 43.67 ($SD=9.03$). Group 1 had an overall attendance rate of 91%. There was one missing data point on the week of 3/27, which was the district's Spring Break

Group 2 consisted of five school psychologists. For this group, 4 of the psychologists were assigned to elementary sites, 1 was assigned to a middle school site, and none were assigned to a high school site. The average psychologist to student ratio for Group 2 was 1:1,200. The group included 2 females and 3 males; the average age was 38.6 ($SD=10.18$). Group 2 had an overall attendance rate of 86%. There was 1 missing data point on the week of 3/27, which was the district's Spring Break

Group 3 consisted of four school psychologists initially, however after the third meeting, one participant left the study due to conflicting obligations, thus 3 school psychologists completed the study in Group 3. The average psychologist to student ratio for Group 3 was 1:1,537.5. In this group, one of the psychologists was assigned to an elementary site, none were assigned to middle school sites, and two were assigned to high school sites. Group 3 had an overall attendance rate of 86%. There were 2 missing data points, the first on the week of 3/27, which was the district's Spring Break and the second was only missing for the PRS-2 score due to a lack of report available for that week.

Group 4 consisted of five school psychologists. In this group, all five participants were assigned to an elementary school site. This group included 5 females with an average age of 40 ($SD=9.77$). The average psychologist to student ratio for Group 4 was 1:2,180. This group included 5 females the average age was 35.75 ($SD=7.41$). For more demographic information see Table 2. Group 4 had an overall attendance rate of 88%. There was 1 missing data point on the week of 4/3, which was the district's Spring Break.

For this study, the groups of psychologists served as an entity of measurement rather than individual participants (similar to the procedures from Burns et al., 2008).

Consultant. The consultant for this study was the principal investigator. The individual was an advanced, doctoral level graduate student with a Masters degree in school psychology. Her graduate level training included several courses on Response to Intervention and Consultation, as well as field experience in districts using RTI for SLD eligibility. Her experience in the field of Learning Disabilities (LD) included previous research examining SLD psychological reports, as well as working as a graduate student researcher for a top tier journal in the field of LD, as well as acting as a guest reviewer for the journal.

Measures

The Psychological Report Survey- 2. The Psychological Report Survey (PRS-2; unpublished measure; Stomel, Vanderwood, & Geraghty, 2014) is the second edition of a Likert rating scale constructed to analyze the content included in psychoeducational reports (See Appendix B). The scale was created after a thorough literature and legal review. These items measures aspects that best practice and legal requirements indicate are important components of psychoeducational reports. The scale includes 38 questions and examines eight content areas: 1) Referral Question; 2) Record Review and Background Information, 3) Observations; 4) Intervention Results; 5) Assessment Results; 6) Conclusion and Recommendations; 7) Lack of Technical Jargon and Clarity; 8) Exclusionary Factors.

In developing each composite, careful considerations were given in order to accurately reflect the construct being defined. More specifically, the Referral Question section items were developed in order to examine the use of objective and well-defined problem areas that will guide the assessment. The Record Review and Background Information section was developed to examine the use of relevant information to support the reason for referral. Next, the Observations Section was developed to measure the use of objective and relevant observational data and provide data on appropriate educational match.

Further, the Intervention Results section was developed to measure the use and analysis of pre-referral intervention data and response data, whereas, the Assessment Results section was developed to measure the use of appropriate instrumentation, as well the use of as skill-focused interpretation of the results to lead to improved future practice. In addition, the Conclusion and Recommendations section was developed to measure the synthesis of the assessment findings, as well as the use of applicable and research-based recommendations. In order to address issues related to context and clarity, the Lack of Technical Jargon and Clarity section was developed to measure the ease of understanding the information presented, as previous research has indicated that to be a problem psychoeducational reports (Brenner, 2004). Finally, the Exclusionary Factors section was developed to measure the use of data to address the legal exclusionary factors of SLD.

Responses to the PRS-2 questions were rated on a 4-point scale ranging from (1) *Never/Not present*; (2) *Poor inclusion/Unnecessary information included*; (3) *Correct information included, but not Sufficient*; (4) *All necessary information is include, as well*

as accurate and complete. The scale was designed to be consistent with the current literature and legal requirements of SLD eligibility in the state of California. The first edition of the scale went through a comprehensive evaluation and revision process including university faculty, practicing experts, and university graduate students. The updated edition includes more operational definitions and expands some of the content areas from the first edition. As part of the current study, updated reliability data will be calculated (internal consistency) and the scale will be further validated, in order to provide the field with a comprehensive tool that can be used to evaluate psychoeducational reports. The following reliability data were collected.

Reliability. Cronbach's alpha coefficient was used to calculate the internal consistency of the PRS-2. The full PRS-2 scale was examined. The internal consistency was .98, indicating very high reliability.

Inter-rater agreement. The principal investigator examined a total of 50 reports. Twenty percent were randomly selected and analyzed by a fellow graduate student researcher to determine percent agreement and Kappa as indices of inter-rater reliability. The assessors followed the same sequence: familiarization with the scale, read a report, then read the report again while completing the scale. The percent agreement between the two raters was 96% with a Kappa of .74 indicating a high level of inter-rater agreement (the strength of agreement was determined as outlined by Landis and Koch (1977), where a kappa coefficient of <0.00 = poor, 0.00-0.20 = slight, 0.21-0.40 = fair, 0.41-0.60 = moderate, 0.61-0.80 = substantial and 0.81-1.00 = almost perfect.

Time Survey. The School Psychologist Time Survey (see Appendix C) was based on previous survey literature and commentaries that examined and discussed school psychologists' roles within the school setting (Castillo et al., 2012; Eitel et al., 1984; Hosp & Reschly, 2002; Reschly, 2004). The Time Survey is a seven-item multiple-choice measure that is intended to examine behaviors related to school psychologists' roles. The Time Survey's content was validated by experts in the field of assessment of LD including university faculty, practicing school psychologists, and doctoral level graduate students. Findings from Hosp and Reschly (2002), indicated that school psychologists across the country spent between 19 and 26 hours per week in assessment related activities, as well as recent data indicating that SLD represents approximately 40% of students in special education (NCLD, 2011) were used to guide the time points on this measure. The items were developed on current and ideal roles of school psychologists, in order to measure multiple aspects of how school psychologists spend their time related to SLD practices (e.g., report writing and testing), as well as alternative activities that the literature suggests school psychologists engaged in (Reschly, 2008). The items were modeled after previously published survey research (Castillo et al., 2012), and were designed to measure more specific behaviors than have previously been documented. The Time Survey was pilot tested, for the use in this study, with a group of psychologists to determine the content validity. The pilot study consisted of a group of three psychologists from one traditional district (not part of the same districts as the participants) who completed the time survey. The results suggest that these psychologists spent the majority of their time (4-6 hours per week) engaged in SLD practices and less

time (0-2; 3-4 hours) engaging in alternative activities. Psychologists in this study completed the survey on a weekly basis in order to document how his/her time was spent with regards to SLD assessment and other roles that have been hypothesized to increase as time spent in SLD assessment decreases (Reschly, 2000).

Knowledge and Competency Survey. In order to measure the school psychologists' gains in knowledge related to evidence-based practice in SLD psychoeducational reports, a knowledge survey was created. Previous scales have been developed to examine knowledge or competency of school psychologists (Knoff, Sullivan, & Liu, 1995; Pérez-González, García-Ros, & Gómez-Arigo, 2004; Stoiber & Vanderwood, 2008), however, none of the previously published scales specifically examined school psychologists' knowledge related to psychoeducational reports. For instance, Knoff and colleagues (1995) and Pérez-González and colleagues (2004) conducted exploratory factor analyses to validate their respective surveys used by teachers in order to examine school psychologists' consultation knowledge and problem-solving skills as rated by teachers. However, the study was designed in order to examine whether a performance feedback intervention had an impact on the time that school psychologists spent in consultation, and was not aimed at measuring psychologists effectiveness in the realm of consultation, thus these measures would not be appropriate for this study. Additionally, Stoiber and Vanderwood (2008) created a survey to examine school psychologists' (a) beliefs regarding practice use, importance, and competence in performing 20 practices; (b) priorities for professional development; (c) demographic information. Although the scale resulted in high internal consistency (alphas ranging

from .86-.91), this scale was also too broad for use in this study, as it examined 20 varying activities of school psychologists, and did not specifically focus on psychoeducational report writing.

Therefore, after a careful review of the literature, the Assessment Knowledge and Competency Survey (AKCS) was created in order to examine school psychologists' knowledge and competency in including EBP in their psychoeducational reports. The 10 question, 4-point scale (Appendix D) was derived from research on school psychologists' knowledge (Kratochwill & Shernoff, 2004; Miller et al., 2006) and evidence-based practice for SLD assessments (Kovaleski et al., 2013; Reschly, 2008). The survey was examined for content validity through rigorous process. The initial scale was evaluated, examined, and modified by a doctoral level graduate school psychology research team. After modifications were made, the second version was evaluated by tenured university school psychology faculty. Modifications were made and the final version was pilot tested with practicing school psychologists. The results from the pilot test indicated a range on items from very high knowledge to very low knowledge, with the majority of responses indicating very low knowledge to somewhat low knowledge, especially for items related to intervention and skill-based data. Cronbach's alpha was calculated in order to determine the scale's internal consistency. The results revealed an alpha of .93, which is an indication of high internal consistency.

Barriers Survey. The Barriers Survey (Appendix E) was created after a thorough literature review examining potential barriers of school psychologists' practice (Kratochwill, 2007; Kratochwill & Shernoff, 2004; Miller et al., 2006). Because this

study is the first to examine the role of performance feedback in changing school psychologists' behavior, the survey was created in order to measure possible barriers that may potentially limit or hinder the effectiveness of the intervention. In order to examine content validity, the scale was reviewed by school-based consultation experts, including tenured university faculty with previous publications in the field, as well as a graduate research team that emphasizes examining and reviewing research in school-based consultation.

Procedure

Initial data collection. Prior to beginning the study, districts with connection to the University were contacted in order to obtain participants. Once the districts agreed to participate, an application was filed and then granted approval through the University's Institutional Review Board. Participants then met with the principal investigator to sign their informed consent to participant, determine groups, set dates for meetings, and complete a demographic questionnaire (See Appendix A). At the initial meeting, one SLD report from each participating school psychologist was collected and scored on the PRS-2 in order to determine if a significant amount of variance between psychologists existed prior to the intervention being administered. Because significant variation existed, the growth in performance from the initial report to future reports for each psychologist was used and recorded. In other words, each report that was sent to the consultant during the baseline and performance feedback phase was compared in terms of the growth to the individual's "pre-report" that was sent before the intervention began. Therefore, each individual's growth of improvement was measured. For example, school psychologist

“A” provided a pre-report that earned a 57% on the PRS-2. On the first week of the study (3/13), school psychologist “A” submitted a new report that also earned a 57% on the PRS-2. As such, school psychologist “A’s” growth score would equate to a 0 for his/her group for that week.

Baseline. The first meeting consisted of an introduction and reviewing the procedure that would take place during the study, as well as scheduling all of the future meetings. All of the following meeting times and places were determined in the initial meeting in order to obtain the optimal attendance rate and ensure that other duties and obligations could be scheduled around the meetings. During baseline, the selected participants (consultees) met with the consultant on a biweekly basis. The meetings lasted between 30-45 minutes. The meetings followed a traditional case consultation framework and discussions centered on case discussions, with no specific feedback being presented related to SLD psychoeducational assessments (Golding, 2004). The additional meetings consisted of traditional case consultation, specifically defined as a model of consultation that focused on the consultee’s (i.e., school psychologists) management of current students or cases, with the aim of increasing the skill and knowledge basis of the consultee. In this model, the consultant and consultees help each other to explore and understand difficulties they are experiencing with the case, to think about different approaches, and increase their confidence in completing the case (Golding, 2004). More specifically, the consultant and consultees broadly discussed current cases within each consultee’s caseload. The consultant did not provide any specific feedback on reports or current procedures, but rather the group worked collaboratively to help guide each

consultee through problem solving current cases. For each group, the amount of baseline meetings that the groups received depended on how long it took for them to maintain a stable baseline, as measured by growth in the reports as measured by the PRS-2. Therefore, once a stable trend in baseline was achieved, the group entered into the performance feedback phase.

During baseline the psychologists completed the Time Survey and AKCS on a weekly basis, as well as provided one initial SLD psychoeducational report (per group) to be evaluated by the consultant using the PRS-2. Therefore, each week, each school psychologist reported on their time and knowledge, as well as provided one report from the group. Baseline for each group continued until the data showed a stable or flat trend for at least 3 data points on the PRS-2 (Horner et al., 2005; Riley-Tillman & Burns, 2009). Once the data from the PRS-2 showed a stable trend for a group, that group entered into the performance feedback phase. More specifically, Group 3 showed the most stable baseline and began receiving the intervention (performance feedback) after three points of data collection. As determined by baseline stability, Group 2 entered the performance feedback phase next, followed by Group 1, which was followed by Group 4 (see Figure 2). After the first group entered the performance feedback phase, the second, third, and fourth, group continued baseline until demonstrating a stable baseline before entering into the performance feedback phase one at a time depending on the stability of their baseline. After the second group began the performance feedback phase, the third and fourth district continued baseline. After the third group began the performance feedback phase, the fourth group continued in the baseline phase and then entered the

performance feedback phase once its baseline trend was stable (Horner et al., 2005).

Following the guidelines, each group remained in baseline for at least 2 additional data points or until a stable baseline trend was observed beyond the other groups that have entered the performance feedback phase (Burns et al., 2008; Horner et al., 2005).

Performance feedback. During the performance feedback phase for each group, the selected school psychologists completed the Time Survey and AKCS on a weekly basis, as well as submitted one initial SLD psychoeducational report (per group) that was evaluated each week. The school psychologists continued to meet with the consultant (in each of their groups) on a biweekly basis for approximately 30-45 minutes. During the meetings, the consultant reviewed the baseline data with the school psychologists, provided copies of the PRS-2, and introduced each item while providing examples and non-examples for each of the items. Examples that received high scores were used to provide positive reinforcement, and non-examples were discussed and feedback was provided in order to improve the scores for the future. Previous research has shown that specific, positive, and corrective feedback is most effective in improving outcomes through performance feedback (Scheeler, Ruhl, & McAfee, 2004). In a review by Scheeler and colleagues (2004), the use of specific, positive feedback resulted in more positive changes in teacher change than general feedback. As such, in the performance feedback phase, the consultant used specific, positive, corrective feedback that was directly derived from examples from the psychoeducational reports. Through the use of examples and non-examples from the actual reports, the consultant gave the groups of

consultee psychologists explicit feedback and opportunities to collaborate on how to improve the content included in future reports.

During the performance feedback phase, the psychologists continued to complete the Time Survey and AKCS weekly and send one report per week per group to the consultant. The data were graphed each week and distributed to each school psychologist at the beginning of the next meeting. This approach has been used in previous performance feedback research (Burns et al., 2008). As a group, the psychologists and consultant brainstormed ways to improve the items that received low scores. At least three data points were collected for each group during the performance feedback phase.

Treatment integrity checklist. All of the sessions of baseline and performance feedback were audio recorded for each group. The participants signed informed consent forms during the initial meeting, indicating their acceptance for the sessions to be recorded. Twenty percent of the recordings from baseline and performance feedback were examined in order to determine treatment fidelity (Kratochwill et al., 2010). During baseline, the audio recordings were examined to determine a lack of inclusion of specific feedback on SLD reports. During the performance feedback phase, treatment integrity data were collected to ensure that the consultant adhered to the intervention procedures and content (Gresham, 1989; Hagermoser Sanetti & Fallon, 2011). The Treatment Integrity Checklist (See Appendix F) included components identified by the NSDC (2007), such as research-based and data-driven emphasis, as well as discussing the key components in each content area of the PRS-2. A second rater evaluated twenty percent

of the baseline and twenty percent of the performance feedback recordings. One hundred percent of the baseline recordings did not include specific feedback on SLD reports and 100% of the performance feedback recordings included all 5 components of the Treatment Integrity Checklist.

Closure and end of the study. After the intervention was been completed, the participating school psychologists discussed their experience with the consultant and were asked to complete the Barriers Survey (Appendix E).

Data Analysis

Visual analysis. Then order to visually analyze the data for research questions 1-4, the What Works Clearinghouse standards were applied (Kratochwill et al., 2010). These components will indicate whether, after three phase changes, a functional relationship exists between the independent variable (performance feedback) and the dependent variables (score on the PRS-2, school psychologists' time, and knowledge). Visual analysis is frequently used to analyze SCD studies, and current standards suggest using visual analysis, as well as a parametric or non-parametric effect size calculation in order to synthesize the effects across studies (Kratochwill et al., 2010). Thus, effect size estimates allow for an objective measure of intervention strength, are more sensitive, and accurate than visual analysis (Parker & Hagan-Burke, 2007).

Effect size estimators. As discussed previously, a limitation of SCD is the lack of consensus in the field regarding effect size calculation and the lack of an effect size estimator that can be directly compared to group studies effect size estimates (Maggin et al., 2011). Therefore, in this study, multiple effect sizes are reported.

PAND and Phi. The use of non-parametric effect size calculations is recommended in addition to parametric estimates and visual analysis (Maggin et al., 2011). Two common methods include Percent of Non-overlapping Data (PND) and Percent of All Non-overlapping Data (PAND; Kratochwill et al., 2010). PND is the most frequently used effect size estimator and is calculated by totaling the number of intervention points that are higher than the highest baseline point divided by the total number of intervention points (Maggin et al., 2011). Unfortunately, PND does not capture the trend of the effect, handle outliers, measure the overall effect, or use all of the data points collected in the study. PAND is calculated by using the number of intervention points that overlap with the baseline points divided by the total number of data points and then subtracted from 100%. Unlike PND, PAND uses all of the data points, and thus takes the length of baseline into account (Parker, Hagan-Burke, & Vannest, 2007). An advantage of non-parametric approaches is that they do not require the assumption of normally distributed data. Unfortunately, there are numerous disadvantages to this approach. First, non-parametric approaches are insensitive to outliers in the baseline phase because the intervention data are compared to the highest or lowest point in the baseline set. Second, although it is an advantage that these methods do not require normal distribution, it is also a limitation, in that the sample distribution is unknown. Third, different magnitudes of effect can result in the same PND and PAND. Fourth, these types of estimations do not account for autocorrelation within the data, which as discussed previously may result in inflated effect sizes. Although PND is most frequently used, PAND is the most supported because it can be converted into a Pearson

Phi (Φ) coefficient, which is a regression-based estimator that can be used to compare between-group effect sizes (Maggin et al., 2011).

Additionally, parametric methods are becoming increasingly popular in effect size estimation for SCDs (Parker et al., 2007). Regression-based estimators are able to model the trends in the data, as well as use all of the data points and account for the level and variability within the data and the effect sizes can be interpreted in units of standard deviation. Also, these estimates can interpret intercept and slope correlations and can account for autocorrelation. Unfortunately, there are numerous limitations of regression estimates. First, these methods are highly dependent on the assumptions of linear regression and require the data be normally distributed (Parker et al., 2007). This creates a problem for SCD research, as most SCD studies do not meet these assumptions, particularly that of independence, due to autocorrelation of the data (Maggin et al., 2011). Second, they are not flexible in dealing with advanced error structures. Third, large sample sizes are necessary. Fourth, the best way to deal with autocorrelation has not yet been determined (Maggin et al., 2011). Although, regression-base effect sizes have been recommended because of their technical qualities and practical utility (Kratochwill et al., 2012), the interpretation of how the R^2 statistic should be interpreted is unclear and wide variations have been found in effect size values and practical significance. Because of the inherent limitation of R^2 in SCD, this statistic will not be used, however, a leading alternative, which can be calculated from PAND is Pearson's *Phi* (Φ).

Similar to R^2 , Φ has a known sampling distribution, thus p values and confidence intervals can be calculated. Φ and R^2 are highly correlated (.90), which indicates that the

measure similar constructs. Unlike R^2 , Φ does not require a lack of violations of statistical assumptions (homogeneity of variance, normality, or independence of data) and only requires 20 data points (Parker et al., 2007). However, Φ has less statistical power than R^2 . Results from one study comparing R^2 and Φ found that Φ detected effects as low as .34, whereas R^2 was able to detect effects as low as .10 (Parker et al., 2007). Φ was also found to produce larger effect sizes than R^2 at the higher end of the distribution of effect size and lower effects than R^2 at the lower end of the distribution (Parker et al., 2007). Φ is calculated using a 2x2 table (Table 1) with the data and applying the following equation: $\Phi = [a/(a+c)] - [b/(b+d)]$ (Parker et al., 2007). Parker and colleagues (2007) stated that for the 25th, 50th, and 75th percentile interventions the Φ^2 was .22, .53, and .80 respectively.

Results

Research Question 1

The first research question was designed to examine whether a functional relationship existed between providing performance feedback to school psychologists and an increase in the use of intervention-focused data in the SLD psychoeducational reports, as measured by the PRS-2. The total score on the PRS-2 for the weekly-submitted reports served as the data point for each group each week. Table 3 shows the change in growth averages on the PRS-2 for baseline and performance feedback across groups increased from -0.52 to 22.98.

Visual analysis. During baseline, the scores on the PRS-2 were downward trending or flat for Groups 2 and 3, and some variability and upward trending for Groups

1 and 4. During the performance feedback phase, growth on the PRS-2 increased immediately for all groups, the trend was upward, and there was only slight variability. Figure 2 displays the amount of growth between the pre-test scored report, and the report scored for each during the performance feedback phase compared to the amount of growth during the performance feedback phase for each group. There was no overlap of in terms of decrease in growth between phases for all 4 groups. For all 4 groups the level in scores was significantly higher during the performance feedback phase as compared to the baseline phase. Overall, variability was similar, however for the last three data points, variability differed slightly for all four groups. Groups 3 and 4 showed little variability in the last 3 data points, however, Groups 1 and 2 showed some variability. Taken together, the data patterns were consistent, in terms of level and trend and indicate four replications of effect and therefore, a functional relationship between performance feedback and growth in the inclusion of best practices in SLD reports.

Effect sizes. Due to the lack of overlapping data, PAND calculated across groups was 100%, which indicates an effective intervention. Parker and colleagues (2007) indicated that a PAND of 100% was at the 100th percentile in terms of effectiveness. The corresponding Φ was 1 and Φ^2 was 1. A Φ^2 of 1 indicates an effective intervention as indicated by Parker et al. (2007).

Difference between scores. Paired Sample T-Tests were run in order to determine the level of significance for each group in their PRS-2 scores between baseline and intervention (see Table 4). For Group 1, results revealed a significant difference between baseline ($M = .75$, $SD = 1.75$) and intervention reports ($M = 22.25$, $SD = 2.14$;

$t(3)= 5.66$ $p = .01$). For Group 2, results revealed a not quite statistically significant difference between baseline ($M = -1.17$, $SD = 2.23$) and intervention reports ($M = 17.33$, $SD=2.28$; $t(5)= 5.80$ $p = .02$). For Group 3, results revealed a not quite statistically difference between baseline ($M = -2.33$, $SD = 1.2$) and intervention reports ($M = 22.33$, $SD=2.60$; $t(2)= 6.99$ $p = .02$). For Group 4, results revealed a not quite statistically difference between baseline ($M = .67$, $SD = 1.2$) and intervention reports ($M = 29.33$, $SD=2.08$; $t(2)= 24.4$ $p = .02$).

Additionally, due to the variation in scores, Paired Sample T-Tests were run for individuals in each group that had at least one report in the baseline and intervention phase (see Table 7). Eight individuals (2 in Group 1, 4 in Group 2, 1 in Group 3, and 1 in Group 4) met these criteria. Individuals were labeled by their group (1-4), followed by a letter to differentiate them. Results revealed the following: for Individual 1-A a significant difference between baseline and intervention reports ($M = 23.5$, $SD=.71$; $t(4)= 47.0$ $p = .01$). For Individual 1-B significant difference between baseline and intervention reports was not found ($M = 19.5$, $SD=3.54$; $t(5)= 7.8$ $p = .08$). For Individual 2-A significant difference between baseline and intervention reports was not observed ($M = 14.5$ $SD=2.12$; $t(2)= 9.67$, $p = .07$). For Individual 2-B significant difference between baseline and intervention reports was not observed ($M = 15.5$, $SD=3.54$; $t(2)= 6.2$, $p = .10$). For Individual 2-C significant difference between baseline and intervention reports was observed ($M = 23.5$, $SD=.71$; $t(5)= 47$, $p = .01$). For Individual 2-D significant difference between baseline and intervention reports was observed ($M = 17.76$, $SD= .58$; $t(1)= 53$, $p = .00$). For Individual 3-A significant difference between baseline

intervention reports was observed ($M = 15.0, SD=2.0; t(4)= 12.99, p = .01$). Finally, for Individual 4-A significant difference between baseline intervention reports was not observed ($M = 24, SD=2.83; t(1)= 12, p = .05$).

Research Question 2

The second research was designed to examine if a functional relationship existed between providing performance feedback related to intervention focused SLD reports to school psychologists and a decrease in their time spent on SLD assessment related activities. To create a score, questions 1-4 on the Time Survey scale were averaged across all psychologists for each group each week. Table 6 shows the change in average time reportedly being spent in SLD related activities for each group for baseline and the intervention phase.

Visual analysis. During baseline, the self-reported scores were downward trending or stable for all groups. Figure 3 displays the summed averages for each group for questions 1-4 on the Time Survey, thus it displays the average amount of time that each of the groups report spending on SLD related activities, and the decrease in time between baseline and during the performance feedback phase. There was no overlap in time spent for Group 3 and Group 1, however there was some overlap for Groups 2 and 4. For all 4 groups, the mean level reported was lower during the performance feedback phase as compared to the baseline phase. Variability was similar for the last 3 data points for Groups 3 and 2 with the data increasing slightly, then showing a downward trend, whereas Group 1 and Group 4 was stable. Overall, the data points were consistent, in terms of the level, with an overall decrease in the performance feedback phase. The trend

for Groups 3 and 2 were decreasing, whereas Groups 1 and 4 were stable. The data indicate 4 replications of an effect, thus a functional relationship is evident between performance feedback and a decrease in time that school psychologists' reported spending in SLD related activities.

Effect sizes. PAND calculated across groups was 93%, which indicates an effective intervention. Parker and colleagues (2007) indicated that a PAND of 93% was at the 75th percentile or higher in terms of effectiveness. The corresponding Φ was .87 and Φ^2 was .76. Parker and colleagues (2007) indicated that a Φ^2 of .87 would be at the 75th percentile or higher in terms of effectiveness, thus indicating that performance feedback is an effective intervention on decreasing school psychologists' time spent in SLD related activities.

Research Question 3

The third research question asks whether a functional relationship exists between providing performance feedback related to intervention focused SLD reports to school psychologists and an increase in their time spent on consultative and/or mental health activities. To create a score, questions 5-7 on the Time Survey scale were averaged across all psychologists for each group each week.

Group 1 showed an average increase from 4.9 hours per week in baseline to 8.03 hours per week in the performance feedback phase, Group 2 showed an average increase from 7.58 hours per week in baseline to 9.18 hours per week in the performance feedback phase, Group 3 showed an average increase from 6.1 hours per week in baseline to 7.98 hours per week in the performance feedback phase, and Group 4 showed an average

increase from 5.79 hours per week in baseline to 6.56 hours per week in the performance feedback phase.

Visual analysis. During baseline, the self-reported scores were downward trending or stable for Groups 1, 3, and 4, whereas Group 2 showed a slightly upward trend at baseline. Figure 4 displays the average for each group for questions 5-7 on the Time Survey, thus it displays the average amount of time that each of the groups report spending on alternative activities, and the increase in time between baseline and during the performance feedback phase. During the performance feedback phase, an increase in time was not immediate for any group. Groups 1 and 3 showed an upward trend and an increase in level. Variability for the last 3 data points were similar for Group 1 and 3 showed an upward trend, whereas Groups 2 and 4 showed a slight downward trend in the performance feedback phase. There was no overlap in Group 1, however there was some overlap for Groups 2, 3, and 4. Groups 3 and 1 showed an increase in level, trend, and stable variability across phases, with the immediacy of the change occurring at the second data point. Group 2 showed an upward trend in baseline and variable change in trend and level between the baseline and performance feedback change, with some increase in level during the last 3 data points. Group 4 showed a downward trend in baseline, with an increase in level during the performance feedback phase. Overall, Groups 1 and 3 showed an increase in level and trend, from baseline, however the change was not immediate, however Groups 2 and 4 only showed a slight increase in level during the performance feedback. Taken all together, the data indicate at least 3 replications of an effect, thus a functional relationship exists between performance feedback and an increase in time that

school psychologists' reported spending engaged in alternative activities.

Effect sizes. PAND calculated across groups was 84%, which indicates an effective intervention. Parker and colleagues (2007) indicated that a PAND of 84% would have been at approximately the 35th percentile in terms of effectiveness. The corresponding Φ was .69 and Φ^2 was .48. Parker and colleagues (2007) indicated that a Φ^2 of .48 would be at approximately the 50th percentile in terms of effectiveness. The PAND and Φ^2 indicated that performance feedback was more effective than approximately 50% of interventions evaluated using a multiple baseline design.

Research Question 4

The fourth research question sought to examine whether a functional relationship existed between providing performance feedback related to intervention focused SLD reports to school psychologists and an increase in their self reported knowledge of and competency in applying EBP related to SLD reports. Each week the psychologists' total on the AKCS was averaged for the group in order to create a composite percentage of knowledge.

At baseline, all four groups scored a mean level of knowledge and competency of 66%. From examination of the data, Groups 1, 2, and 3 did not show any growth across baseline. Group 4 showed some steady inclining trend during baseline, however during the intervention phase, the level and trend of the data increased significantly. Visual analysis showed a clear change in level and trend across all 4 groups. The visual analysis procedure of this multiple baseline data indicates a clear functional relationship between the performance feedback intervention and improvements in self-reported knowledge and

competency. Table 8 shows the change in knowledge and competency on the AKCS for baseline and performance feedback increased from 66% to 83%.

Visual analysis. During baseline, the scores on the AKCS showed a stable or downward trend across all four groups. The composite percentage on the AKCS increased immediately for all groups, the trend was upward, and there was no variability. Figure 5 displays the self-reported knowledge that the psychologists' indicated on the AKCS for baseline and the performance feedback phase for each group. There was no overlap between phases. For all four groups the level in reported knowledge was significantly higher during the performance feedback phase as compared to the baseline phase. Overall, variability was similar, and for the last three data points across all four groups, the trend was increasing. Overall, the data patterns were consistent, in terms of level, trend, variability, immediacy of the effect, and percent overlap. Thus, the data indicate four replications of effect and therefore, a functional relationship between performance feedback and self-reported knowledge as measured by the AKCS.

Effect sizes. Due to the lack of overlapping data, PAND calculated across groups was 100%, which indicates an effective intervention. Parker and colleagues (2007) indicated that a PAND of 100% was at the 100th percentile in terms of effectiveness. The corresponding Φ was 1 and Φ^2 was 1. A Φ^2 of 1.0 indicates an effective intervention as indicated by Parker et al. (2007). PAND and Φ are not sensitive to the upper end of the scale when no overlap occurs (Parker et al., 2007). This limitation will be discussed in the limitations section.

Research Question 5

Ninety-four percent of the participants (17 out of the final 18 participants) completed the Barrier's survey. The results from the Barriers Survey revealed that the psychologists' indicted various barriers to changing their current practice (see Table 9). In regards to the first question, which asked: "What was the hardest part of including more Evidence-Based, intervention-focused data in your reports?" psychologists most frequently responded with answer choice (e) Other (7 responses), with the all seven comments relating to a lack of access to necessary data.

The second question examined: "What was the hardest part in engaging in more consultation services (problem solving with teachers and staff)?" For this question, the psychologists most frequently responded with choice (e) None/it was not hard (9 responses). The next most frequently indicated choice was (f) Other, with varying comments including lack of access to data (1 response), already engaging in consultative services (1 response), teacher resistance (1 response), heavy caseload taking up time (1 response), and school climate does not foster consultation as a positive interaction (1 response).

The third question examined: "What was the hardest part in spending more time delivering or planning intervention services (behavior and/or academics)?" For this question, the psychologists most frequently responded with choice (f) Other (6 responses) with comments varying, including a lack of access to data/interventions (2 responses), teacher resistance in implementation/ intervention planning (2 responses), heavy case

load limiting time available (1 response), and issues related to school culture (1 response).

Finally, question 4 examined: “What was the hardest part in spending more time conducting mental health services (i.e., group counseling, individual counseling, individual social skills, social skills groups)?” The most frequent response chosen was (a) I did not increase my time spent in conducting mental health services (6 responses), followed by choices (e) None/it was not hard (5 responses) and (f) Other (4 responses). The other responses all indicated that the psychologists would like to spend more time engaged in mental health activities, but their heavy caseloads would not permit it due to a lack of time.

Discussion

The primary purpose of this study was to examine whether a functional relationship existed between providing performance feedback to school psychologists and the improvement in school psychologists’ practices related to SLD eligibility. Specifically, the study sought to determine whether providing explicit performance feedback to school psychologists on their SLD reports could improve their reports, in terms of inclusion of EBP. The study also sought to determine whether the performance feedback would lead to a decrease in the amount of time that the school psychologists spent in SLD related activities, and lead to an increase in the amount of time that they spent in alternative activities (i.e., consultation, intervention, mental health). Additionally, this study examined whether the implementation of a performance feedback intervention would lead to school psychologists reporting increased knowledge and

competency in the area of SLD. The final purpose of the study was to examine which barriers to change, if any, were most frequently reported.

A visual representation of the study's purpose can be seen in the logic model (Figure 1). It was hypothesized that when school psychologists were exposed to performance feedback, their reports would improve. Further, the performance feedback was also hypothesized to lead to higher levels of self-reported knowledge of EBP, and would result in psychologists spending less time in SLD assessment activities and more time engaging in alternative activities. The results of this study confirmed these hypotheses.

Performance Feedback and SLD Reports

The first research question was designed to examine the impact of performance feedback on school psychologists' reports. Prior to receiving performance feedback, the school psychologists' SLD reports showed very little growth during baseline, as well some decline in improvement in scores on the PRS-2. Baseline growth scores ranged between a decrease of 4 points from an initial report and a growth of 5 points on the PRS-2. Specific scores on the PRS-2 in baseline ranged from 41-63%. As previously discussed, published literature reveals a gap between research and practice, and recommends including specific information in each section of the SLD reports (Francis et al., 2005; Kratochwill & Shernoff, 2004; Mallin, Beimcik, & Hopfner, 2012; Miller et al., 2006; Robinson, 1998). Consistent with this research, the current findings indicate that prior to intervention, practicing school psychologists included little of the content considered as best practice in their reports.

Furthermore, from examining the data, the reports did not show any significant growth across all four groups during baseline. The performance feedback intervention provided the school psychologists with knowledge and support to change their current practices. Further, visual analysis examining the performance feedback across all four groups indicated a clear change in level and trend across all groups. The visual analysis procedure of the multiple baseline data indicates a clear functional relationship between the performance feedback and growth of SLD reports. Additionally, when one group entered the intervention phase, a consistent continuation of baseline pattern remained for the other groups. The improvement in score growth was clear in both level and trend across all four groups.

This intervention can be interpreted as being highly effective at improving school psychologists' inclusion of skill-focused and best practice recommended data in their SLD reports. Thus, a functional relationship exists, and the performance feedback intervention can be interpreted as effective, although there are limitations to interpreting a lack of overlap using PAND. The logic model (Figure 1) is supported in this finding, as performance feedback led to improvements in school psychologists' reports.

Additionally, considering the visual analysis and effect sizes together, there is agreement that performance feedback was extremely effective in increasing the growth of SLD reports and the inclusion of best practices in the reports. Although previous research has not specifically examined the effect of performance feedback on school psychologists' practice, this finding is consistent with the findings from other research examining the impact of performance feedback on teachers' practice (e.g., Noell, 2010).

This study provides strong, initial evidence that performance feedback is effective in improving school psychologists' SLD reports.

More specifically, an analysis of individual groups indicates that all of the four groups showed a significant increase in level. Group 1 showed an average growth of .75 (i.e., a decrease in growth) points in baseline and an average of 22.25 points during the performance feedback phase. To earn a decrease in growth score, school psychologist "B" provided a pre-report that earned a 50% on the PRS-2. A 100% on the PRS-2 was earned when a report demonstrated "4's" on all 38 items of the PRS-2 (a score of 152 points); therefore a 50% was earned when a report was scored as earning 76 points. On the first week of the study (3/13), school psychologist "B" submitted a new report that also earned a 45% on the PRS-2. As such, school psychologist "A's" growth score would equate to a -5 for his/her group. Group 2 demonstrated an average growth of -1.17 (i.e., a decrease in growth) points during baseline to an average 17.33 points during the performance feedback. Group 3 showed an average growth of -2.33 points in baseline and an average of 22.33 points during the performance feedback phase. Group 4 showed an average growth of .67 points in baseline and an average of 30 points during the performance feedback phase (See Table 3). The increase in growth of scores on the PRS-2 was significant across all four groups. This suggests that performance feedback targeting explicit data from previous reports leads to an increase in future reports' inclusion of more skill-based and intervention focused data.

Paired Sample T-Test were run for the Groups, as well as individuals with reports in both the baseline and intervention phase to determine whether a significant difference

existed between the two phases. For the groups, Group 1 demonstrated a significant difference between baseline and intervention phase. For in the individuals, Individual 1-A, Individual 2-C, Individual 2-D, and Individual 3-D demonstrated significant differences between their baseline and intervention reports. Therefore, it can be determined that the performance feedback intervention did provide statistically significant improvements across 4 of the individuals and one of groups.

Performance Feedback and School Psychologists' Time

The second and third research questions sought to examine the impact of performance feedback on SLD reports on school psychologists' time spent in SLD activities and alternative activities.

Decrease in SLD activities. For research question 2, the visual analysis indicated that prior to receiving performance feedback, the school psychologists reported spending more time engaged in SLD related activities than after the performance feedback intervention began. In baseline, the groups of school psychologists reported spending an average of 14.52 hours on SLD related activities (Table 6). This finding is consistent with other research that demonstrated school psychologists spend a significant portion of their time (i.e. upwards of 50%) engaged in assessment related activities (Bramlett et al., 2002; Hosp & Reschly, 2002; Pelco, Ward, Coleman, & Young, 2009; Reschly, 2000). In this study, school psychologists reported that prior to receiving performance feedback, a significant portion of their workweek was dedicated solely to SLD related activities. It was anticipated that the school psychologists would report spending more time engaged in SLD related activities than in alternative activities, given that these school

psychologists were employed in districts that were not yet using an RTI for eligibility model for SLD (VanDerHeyden, 2011).

During baseline, a stable baseline was observed for Groups 2 and 3, where as Groups 1 and 4 demonstrated slight declines in trends. During baseline, the school psychologists reported spending an average of 14.52 hours per week engaged in SLD related activities (i.e., testing, writing reports). Although there were slight declines in trends for 2 of the groups (Group 1 and Group 4) during baseline, the visual analysis of this multiple baseline procedure indicates a functional relationship between the performance feedback and a decrease in time that school psychologists' reported spending in SLD related activities. All four groups showed a change in level and trend once the performance feedback intervention began. The performance feedback was found to be effective through both visual analysis and effect size estimations at reducing the amount of time school psychologists reported spending in SLD related activities.

Furthermore, this study is the first of its kind, as research has not yet documented the impact of direct intervention or consultation on the changing practice of school psychologists. Other studies have examined how other indirect practices (i.e., changing SLD eligibility model; VanDerHeyden, 2011) impacts school psychologists' practice and time spent engaging in SLD related activities. Yet, this is the first study that has examined the impact of a direct intervention with school psychologists' on their current practice. Results from this study indicate that a direct, performance feedback intervention focusing on specific SLD reports does impact the amount of time that school psychologists spend in these types of activities. Specifically, reducing the amount of time

spent in SLD related activities, which would provide psychologists' with the opportunities to engage in alternative types of activities (i.e., consultation, intervention, mental health support).

More specifically, an analysis of individual groups indicates that all four of the groups showed a decrease in level. Group 1 showed an average decrease from 14.27 hours per week in baseline to 10.15 hours per week in the performance feedback phase. Group 2 showed an average decrease from 13.42 hours per week in baseline to 11.52 hours per week in the performance feedback phase, Group 3 showed an average decrease from 15.07 hours per week in baseline to 9.21 hours per week in the performance feedback phase, and Group 4 showed an average decrease from 15.32 hours in baseline to 11.9 hours in the performance feedback phase (See Table 6). This consistent decrease across groups, with the baselines showing stability as other groups enter performance feedback, suggests that performance feedback targeting explicit data on SLD reports leads to a decrease in the amount of time that school psychologists engage in SLD practices.

Furthermore, after receiving providing feedback, school psychologists engaged less in SLD related activities. Thus, this study supports the notion performance feedback leads to school psychologists' practice shifting in line with the "paradigm shift" (Kratochwill & Shernoff, 2004; Reschly, 2008). Furthermore, the logic model (Figure 1) is supported in this finding, as performance feedback led to a decrease in school psychologists' self-reported time spent in SLD related activities. Therefore, this study provides one method for targeting a hypothesized reason that practicing psychologists fail

to engage in what best practices and current research suggests (i.e., lack of knowledge, skills, competency, and support; Kratochwill & Shernoff, 2004; Miller et al., 2006). It also indicates that with specific feedback, practicing school psychologists can begin to spend less time focusing on SLD related assessments and more time focusing on alternative practices.

Increase in alternative activities. Research question 3 examined whether providing performance feedback on SLD reports to practicing school psychologists would increase the amount of time that they spent in alternative activities (i.e., mental health, consultation, and/or intervention). The results from this study indicate that prior to receiving performance feedback, the school psychologists reported spending less time engaged in alternative activities than after the performance feedback intervention began. In baseline, the groups of school psychologists reported spending an average of between 4.5 and 8 hours per week on alternative activities. This finding is consistent with research that demonstrated school psychologists spent a significant portion of their time assessment and report writing activities, and spent less time engaged in alternative activities such as consultation, intervention, and mental health (Castillo et al., 2012; Eitel, Lamberth, & Hyman, 1984; Francis et al., 2005; Kratochwill & Shernoff, 2004; MacMillan, Gresham, & Bocain, 1998; Miller et al., 2006; Robinson, 1998).

A stable baseline was observed for Groups 1, 3, and 4 whereas Group 2 demonstrated slightly inclining baseline trend. During baseline, the school psychologists reported spending an average of 6.09 hours per week engaged in alternative activities (i.e., mental health, intervention, consultation). Overall, the visual analysis of this

multiple baseline procedure indicates a functional relationship between the performance feedback and an increase in time that school psychologists' reported spending in alternative activities. During the intervention phase, school psychologists reported spending an average of 7.94 hours per week engaged in alternative activities. All four groups showed a change in level and trend during the performance feedback intervention. Table 7 shows the change in average time reportedly being spent in alternative activities for each group for baseline and the intervention phase. The performance feedback, as an intervention was found to be effective through both visual analysis and effect size estimations at increasing the amount of time school psychologists reported spending in SLD related activities.

More specifically, an analysis of individual groups indicates that all four of the groups showed an increase in level of time spent in alternative activities. This increase across groups, with the majority of other groups' baselines showing stability as other groups enter performance feedback, suggests that performance feedback targeting explicit data on SLD reports leads to an increase in the amount of time that school psychologists engage in alternative activities such as providing consultation, intervention, and mental health services. Furthermore, the logic model (Figure 1) is supported in this finding, as performance feedback led to an increase in school psychologists' self-reported time spent in alternative activities.

Therefore, this study supports the notion that when school psychologists are provided with performance feedback that focuses on improving their SLD reports, their practices begin to change. It is believed that using specific and targeted, repeated

feedback provided the participants with the support necessary to engage in changing their behavior. These findings contribute to and broaden the literature that indicates performance feedback provided to teachers produces change (i.e., Noell, 2010). More specifically, this study found that providing performance feedback to school psychologists, helped to narrow the gap between research and practices that has been documented in the literature (Kratochwill & Shernoff, 2004). School psychologists, when provided with performance feedback, decreased the amount of time that they spent in SLD related activities as compared to baseline, and increased the amount of time that they spend engaged in alternative activities as compared to baseline.

Performance Feedback and Knowledge and Competency

The fourth research question was designed in order to examine whether performance feedback produced improvements in school psychologists' self-reported level of knowledge and competency in regards to best practices of SLD assessment. Prior to receiving performance feedback, the school psychologists' showed very little growth within and across groups. Baseline average scores within groups ranged between 57% and 76%. The literature hypothesizes that one of the leading reasons school psychologists' have not shifted their focus towards implementing more skill focused and evidence-based practice and narrowing the gap between suggested and actual practice is due to their lack of knowledge and sense of competency in contemporary practices (Kratochwill & Shernoff, 2004; Miller et al., 2006). Although previous research has not directly examined this phenomenon in testing this hypothesis, nor has research directly examined how to improve school psychologists' knowledge and competency, this study

provides initial evidence to support the notion that providing performance feedback to psychologists is effective. Previous research with teachers indicates the effectiveness of performance feedback in improving teachers' behavior change (e.g., Noell, Witt, Gilbertson, Rainer, & Freeland, 1997; Noell, 2010; Witt, Noell, LaFleur, & Mortenson, 1997) and this current study extends this literature to school psychologists.

Furthermore, considering the visual analysis and effect sizes together, there is agreement that performance feedback was extremely effective in increasing the school psychologists' sense of knowledge and competency related to best-practices of SLD. As discussed previously, this study extends previous research that found performance feedback effective at improving teachers' behavior change (Noell, 2010) to the practice of school psychologists. This study provides initial evidence that performance feedback can be used to improve school psychologists' practice and narrow the gap between research and practice.

More specifically, an analysis of individual groups indicates that all of the four groups show a significant increase in level. Group 1 showed an average score of 63% in baseline and an average of 81% during the performance feedback phase, Group 2 demonstrated an average of 63% during baseline to an average 85% during the performance feedback, Group 3 showed an average of 71% in baseline and an average of 81% during the performance feedback phase, and Group 4 showed an average of 67% in baseline and an average of 84% during the performance feedback phase (See Table 6). The increase in of scores on the AKCS was significant across all four groups. This suggests that performance feedback targeting explicit data from previous reports leads to

an increase in school psychologists' reported knowledge and competency with regards to SLD assessment procedures. Finally, the logic model (Figure 1) is supported in this finding, as performance feedback led to an increase in school psychologists' self-reported knowledge and competency.

Barriers To Change

Finally, the fifth research question sought to identify barriers that school psychologists indicated making their transition to contemporary practices difficult. It was hypothesized, based on previous research, that a lack of skills and knowledge related to alternative practices will be the most frequently reported barrier to behavior change (Kratochwill & Shernoff, 2004; Miller et al., 2006), however the results differed. Specifically, across three of the four questions, the school psychologists indicated that a large barrier to their change in practice was due to a lack of access to types of data or information available at their school site.

School psychologists reported that the schools' lack of inclusion of intervention data (i.e., indicating what interventions were being used prior to special education referral) or intervention response data was a large contributor to their lack of inclusion of this information in their reports. Additionally, another reported barrier to inclusion of intervention-focused data in reports was the school psychologists' belief that district level or legal requirements hindered their change. Given that these responses were most frequent in regards to the improvement of SLD reports, future research may want to include district/administrative key-players in addition to working with school psychologists. More specifically, school districts may want to involve district

administrators prior to or when implementing change within a district to clarify district policies and legal limitations in order to limit confusion and promote change.

In regards to increasing their practice in alternative activities, including consultation, mental health, and intervention (questions 2-4), the majority of school psychologists indicated that increasing their consultative services was not difficult. This finding was contradictory to the hypothesis, as it was expected that school psychologists' would report a lack of knowledge and or training in these areas, which was prohibiting them from engaging in these types of activities. With regards to increasing their intervention services, school psychologists most frequently indicated that the reasons behind their lack of involvement in this area was due to lack of data, teacher resistance, heavy caseloads, or school culture. Future research should target school psychologists' problem solving skills, in addition to targeting specific SLD assessment practices, in order to provide them with skills that can be applied to modifying their practices, especially when issues or problems arise that make the change appear less feasible.

Finally, with regard to increasing mental health services, school psychologists in this study indicated varying responses. More specifically, the majority of responses indicated that school psychologists did not increase their time spent in mental health services followed by the statement that change was not difficult. Those that did report changing their behavior, indicated that the greatest barrier to change was their heavy case loads taking the majority of their time. School psychologists have the potential to provide invaluable services to students in schools through providing mental health services (Burns et al., 1995), and this study provides initial evidence to support the notion that

school psychologists need additional support in helping to modify their schedules in order to provide students with these types of services. This finding is consistent with previous research that indicates that school psychologists have not broadened their role as hypothesized by the paradigm shift, but instead frequently continue to serve as the “gatekeepers” to special education (Bradley-Johnson & Dean, 2000; Reschly, 2008).

Limitations

As in all research, there are limitations to address. As stated previously, the sample was a convenience sample and all participants participated on a volunteer basis. Therefore, all of the participating school psychologists’ had the desire to participate in the study, and volunteered with the knowledge that their current practices were being targeted for improvement. Each of these psychologists identified the need to improve their reports and was willing to engage in changing their practices. Districts or future research using this form of consultation to improve the practice of non-volunteer school psychologists may encounter resistance and/or less growth.

A second limitation pertains to the instruments used in this study. Previous research has not specifically examined this area in this great of detail. Therefore, previously published tools were not available to be used. This study provides initial data to support the reliability and validity of the PRS-2, AKCS, and Time Survey, however, the principal investigator created the tools and future research should be conducted by an independent investigator to confirm the psychometric properties of these tools. Additionally, the self-report method of the time scale and AKCS inherently has limitations. These tools are not direct measures of time or knowledge/competency and are

based on self-report, which may include bias. Specifically, school psychologists may have reported spending more time in alternative activities and less time in SLD activities due to reactivity to the study, rather than their actual time spent engaged in these activities changing.

An additional limitation to this study was the lack of a maintenance phase following the performance feedback phase. During the maintenance phase, the reports, time, and knowledge would continue to be measured without the inclusion of a performance feedback intervention in order to determine if the improvements in each of these areas was maintained. Adding a maintenance phase would have provided insight to the sustainability of the impact of performance feedback on school psychologists' practice. As previous research has shown, one-day trainings typically do not produce lasting change with teachers (Desimone et al., 2002; Guskey, 2009; Kinkead, 2007) and a maintenance phase would have shown if a performance feedback intervention is more effective in maintaining behavior change for the long term.

Another possible limitation relates to confounding variables. Although the single-case design should control for extraneous and confounding variables, it is possible that other factors contributed to the improvement or lack thereof in school psychologists' reports. Individual growth in reports may have been limited by the access that school psychologists' had to intervention data. For example, school psychologists practicing at some schools had access to screening and progress monitoring data, whereas school psychologists' practicing at other schools that did not collect screening and/or progress monitoring data did not have the data to include in their reports. Psychologists' previous

trainings and/or graduate training may have also limited individual growth in reports. For example, school psychologists who recently graduated from their training programs may have had more recent exposure to best practices and could have been more comfortable in changing their practices. Additionally, perceived district support in changing practices may have also been a factor in school psychologists including more evidence-based data in their reports. Psychologists who perceived that that their districts would support their change in practice could have been more likely to modify and change their reports.

Finally, PAND and Φ are not sensitive to the upper end of the scale when no overlap occurs (Parker et al., 2007). In this study, baseline and intervention phase did not demonstrate overlap for all of the cases and therefore, PAND and Φ may not have been sensitive to this change. However, the visual analysis also provides support of the effectiveness of the intervention.

Implications for Practice

This study extends the current literature of performance feedback efficacy to a new group of individuals: school psychologists. The results from this study provide initial evidence that performance feedback can be used improve school psychologists practice. More specifically, this study demonstrates that performance feedback can lead to an increase in skill-based, intervention focused data in school psychologists' SLD reports, increased time for school psychologists to engage in alternative activities (other than special educational assessment), and increased knowledge of EBP related to SLD eligibility.

The initial support for this method of consultation with school psychologists provides school districts with an effective evidence of an alternative to the “one-day-trainings” that take place with the goal to change current practice. The present study provides evidence of a model of intervention that could potentially narrow the gap between research and practice and encourage school psychologists to shift their behavior towards the paradigm shift that has been discussed in the literature.

Additionally, the reports that were produced as a result of the performance feedback intervention included more intervention-based data, which could be more useful to IEP teams. Future research will have to determine whether IEP teams find this data useful and include it in their meetings, decisions, and future instruction. School psychologists’ reports that include more skill-based data can be used towards informing instruction. Therefore, by implementing performance feedback with school psychologists, school districts can improve the data that are collected and utilized in these high-stakes decision-making processes.

The study also provides evidence of the impact that policy has on current practice and in changing practices of school psychologists. More specifically, school psychologists in this study frequently reported that a barrier to their change included large caseloads. NASP recommends the school psychologists to student ratio fall from 1:500-700 (NASP, 2013), whereas the school psychologists in this study reported much heavier caseloads (1:1,210-2,180). In order for school psychologists to shift their practices and be fully involved in comprehensive and preventative services, their caseloads should be in line with the NASP recommendation. This study provides

evidence that school psychologists can shift their practices with heavier caseloads; however, their involvement in alternative activities will still be limited due to a lack of time. Districts interested in changing school psychologists' roles within the schools need to consider providing their psychologists with more manageable caseloads, that will allow them to participate in more comprehensive and preventative activities.

Finally, this study provides initial evidence for a model to change school psychologists' practice in the schools. It has been long documented that school psychologists spend a significant portion of their time devoted to testing and assessment (Castillo et al., 2012) and this current study is the first of its kind to demonstrate a functional relationship between an intervention (i.e., performance feedback) and a decrease in school psychologists' time spent in SLD assessment activities and an increase in school psychologists' time in alternative activities. The results from this study indicate that school psychologists' practice can be modified through targeted intervention and that their practices shift, providing them with more time to spend providing services such as mental health, intervention, and consultation. Thus, the study provides evidence of the effectiveness of performance feedback on school psychologists' practice in order for them to broaden their impact on student outcomes.

Future Research

This study is the first to examine the effects of performance feedback on school psychologists' practice. The current literature on school psychologists' roles in the schools is primarily commentary-based, and this study is the first to begin to fill this void. It is also the first study to use a rigorous multiple baseline design with an intervention to

improve the practice of school psychologists. With the current standards (i.e., What Works Clearinghouse, 2012) of single case design, future research should continue to examine and broaden the research of performance feedback with school psychologists, as well as other educational practitioners.

Additionally, future research should continue to extend interventions focusing on improving school psychologists' current practice. For this study, the principal investigator provided the performance feedback intervention. Future research may seek to examine the effectiveness of utilizing a practicing psychologist to provide feedback to other psychologists, as this would expand the external validity of this current concept. Expanding performance feedback with school psychologists to other areas than SLD activities could also be considered. For example, future research could examine improving school psychologists' practices in consultation, intervention, and mental health services. Thus, future research that builds upon this initial study could continue to improve current school psychologists' practice, all with the ultimate intention of improving the services provided to students.

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Table 1
2x2 Table for Calculating Φ

Overlap	Intervention	Baseline	Total
Higher	<i>a</i>	<i>b</i>	% baseline points
Lower	<i>c</i>	<i>d</i>	% intervention points
Total	% baseline points	% intervention points	100

**Note.* Taken from Parker, Hagan-Burke, & Vannest, 2007

Table 2
Participant demographics

		Group 1	Group 2	Group 3	Group 4
Total		5	5	3	5
Site	Elementary	4	4	1	5
	Middle		1		
	High	1		2	
Gender	Female	4	2	2	5
	Male	1	3	1	
Age		43.67 (SD= 9.03)	38.6 (SD=10.18)	35.75 (SD=7.41)	40 (SD= 9.77)
Ethnicity	Caucasian	4	3	2	3
	Hispanic	1	0	1	2
	Black	0	1	0	0
	Other	0	1	0	0
Language	Spanish	1	1	2	1
	Farsi	0	1	0	0
	ASL	0	0	0	1
Provide Services in other language		1	1	2	2
Years of Psych Experience		9.5	6.3	3.25	13.2
Years of Teaching		1	1.6	11	0
Highest Degree in SP	Masters	4	2	3	2
	Specialist	1	2	0	3
Highest Degree not in SP	MSW	1	0	0	0
	MFT	1	0	0	1
	Counseling	1	1	0	1
	SpEd	0	1	1	0
Certifications	NCSP	1	1	0	1
	Certified by State	5	4	3	5
	LEP	0	0	0	1
Ratio of SP to Students		1: 1,366.67	1: 1,210	1: 1,537.5	1: 2,180

*Note. SP= School Psychologist, SpEd= Special Education, ASL= American Sign Language, NCSP= National Certified School Psychologist, MSW= Masters Social Work, MFT= Masters Marriage, Family Therapy, LEP= Licensed Educational Psychologist

Table 3

Change in growth on PRS-2

	Baseline Average Growth	Performance Feedback Average Growth
Group 1	0.75	22.25
Group 2	-1.17	17.33
Group 3	-2.33	22.33
Group 4	.67	30.0
Average	-0.52	22.98

**Note.* PRS-2= Psychological Report Survey -2

Table 4
Paired Sample T-Test for Groups

Group	<i>M</i> (<i>SD</i>)	<i>t</i>	<i>p</i>
Group 1	21.50 (7.59)	5.66	.01*
Group 2	18.50 (7.82)	5.80	.02
Group 3	24.67 (6.11)	6.99	.02
Group 4	29.33 (2.08)	24.4	.02

* $p < .01$

Table 5
Paired Sample T-Test for Individuals in Groups

Group	Individual	<i>M</i> (<i>SD</i>)	<i>t</i>	<i>p</i>
Group 1	1-A	23.5 (.71)	47.0	.01*
	1-B	19.5 (3.54)	7.8	.08
Group 2	2-A	14.5 (2.12)	9.67	.07
	2-B	15.5 (3.54)	6.2	.10
	2-C	23.5 (.71)	47.0	.01*
	2-D	17.67 (.58)	53	.00*
Group 3	3-A	15.0 (2.0)	12.99	.01*
Group 4	3-B	24 (2.83)	12.0	.05

**p*<.01

Table 6
Change in time engaged in SLD activities

	Baseline Average Time Spent in SLD Activities (hours)	Performance Feedback Time Spent in SLD Activities (hours)
Group 1	14.27	10.15
Group 2	13.42	11.52
Group 3	15.07	9.21
Group 4	15.32	11.9
Average	14.52	10.70

*Note. *SLD=Specific Learning Disability*

Table 7

Change in time engaged in alternative activities

	Baseline Average Time Spent in Alternative Activities (hours/week)	Performance Feedback Time Spent in Alternative Activities (hours/week)
Group 1	4.9	8.03
Group 2	7.58	9.18
Group 3	6.1	7.98
Group 4	5.79	6.56
Average	6.09	7.94

Table 8
Change in scores on AKCS

	Baseline Average AKCS Score	Performance Feedback AKCS Score
Group 1	63%	81%
Group 2	63%	85%
Group 3	71%	81%
Group 4	67%	84%
Average	66%	83%

**Note.* AKCS= Assessment Knowledge and Competency Scale

Table 9
Reported barriers to change

Question	Number of Responses to Each Answer Choice					
	A- I did not know	B- District limitations	C- I did not agree	D- None	E- Other	
1) What was the hardest part of including more Evidence-Based, intervention-focused data in your reports?	0	6	0	4	7	
	A- I did not increase my time	B- I did not think it was necessary	C- I did not feel qualified	D- I did not know how	E- None	F- Other
2) What was the hardest part in engaging in more consultation services (problem solving with teachers and staff)?	1	0	2	0	9	5
	A- I did not increase my time	B- I did not think it was necessary	C- I did not feel qualified	D- I did not know how	E- None	F- Other
3) What was the hardest part in spending more time delivering or planning intervention services (behavior and/or academics)?	5	1	1	0	4	6
	A- I did not increase my time	B- I did not think it was necessary	C- I did not feel qualified	D- I did not know how	E- None	F- Other
4) What was the hardest part in spending more time conducting mental health services (i.e., group counseling, individual counseling, individual social skills, social skills groups)?	6	1	1	0	5	4

Figure 1
Logic Model

Problem: Need to improve school psychologists' practice in SLD assessment activities because the majority of their time is spent in this area and the practices used and data being collected are not best practice or applicable to future instruction

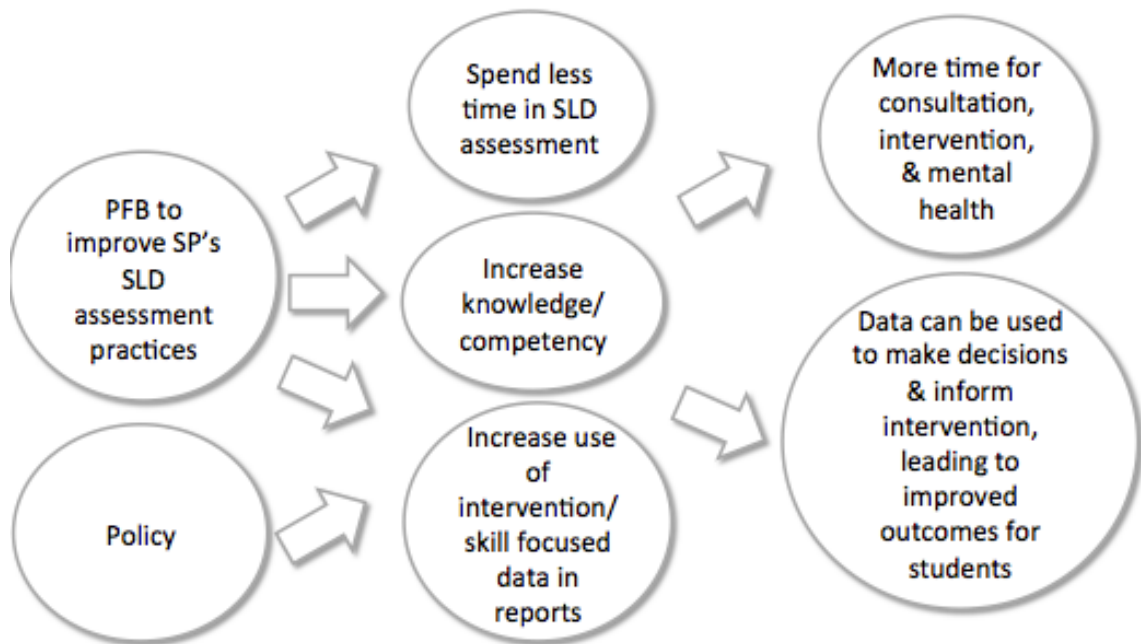


Figure 2
The effect of performance feedback on school psychologists' growth in scores on PRS-2 for SLD reports

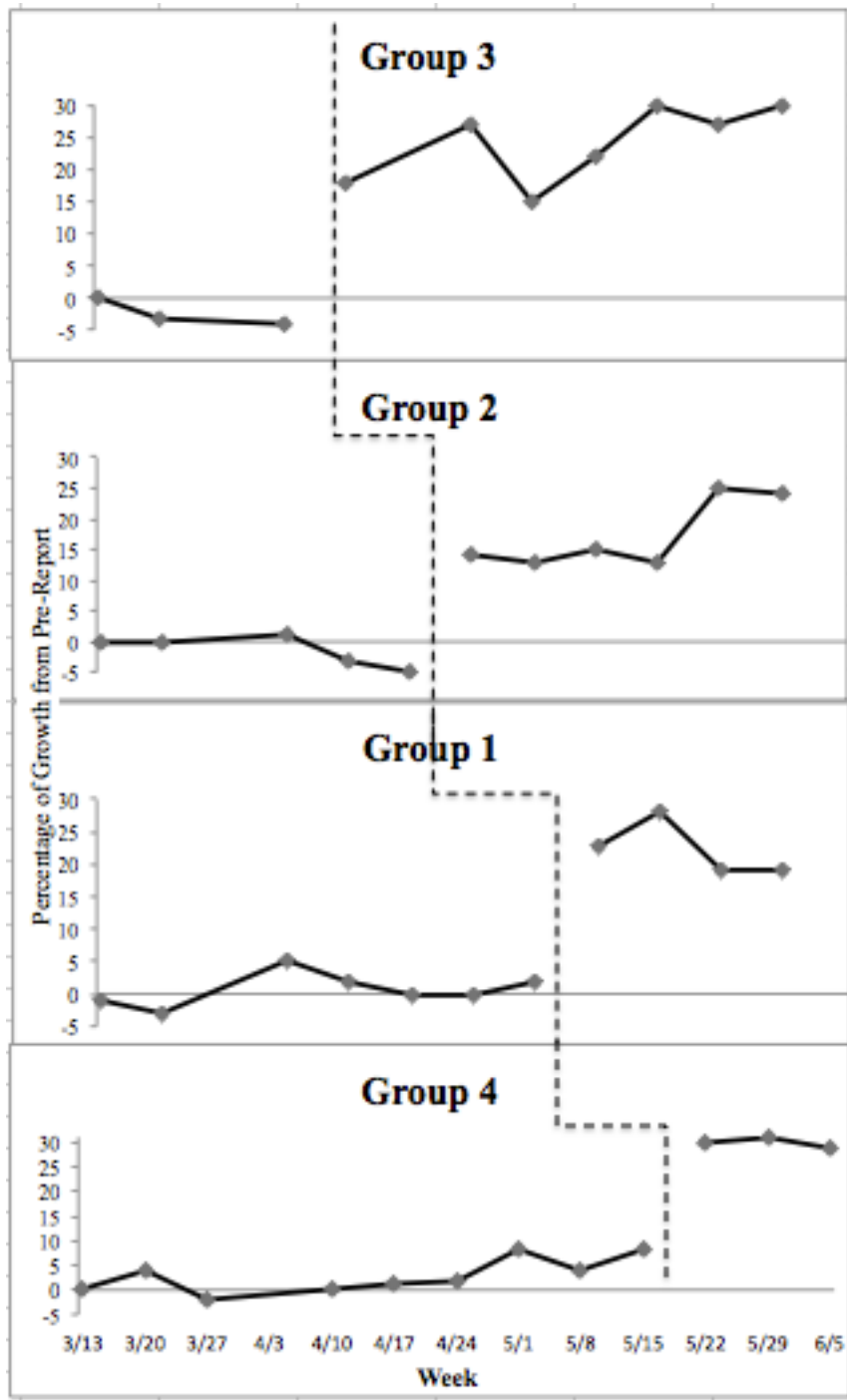


Figure 3
The effect of performance feedback on school psychologists' reported time spent in SLD related activities (in hours/week)

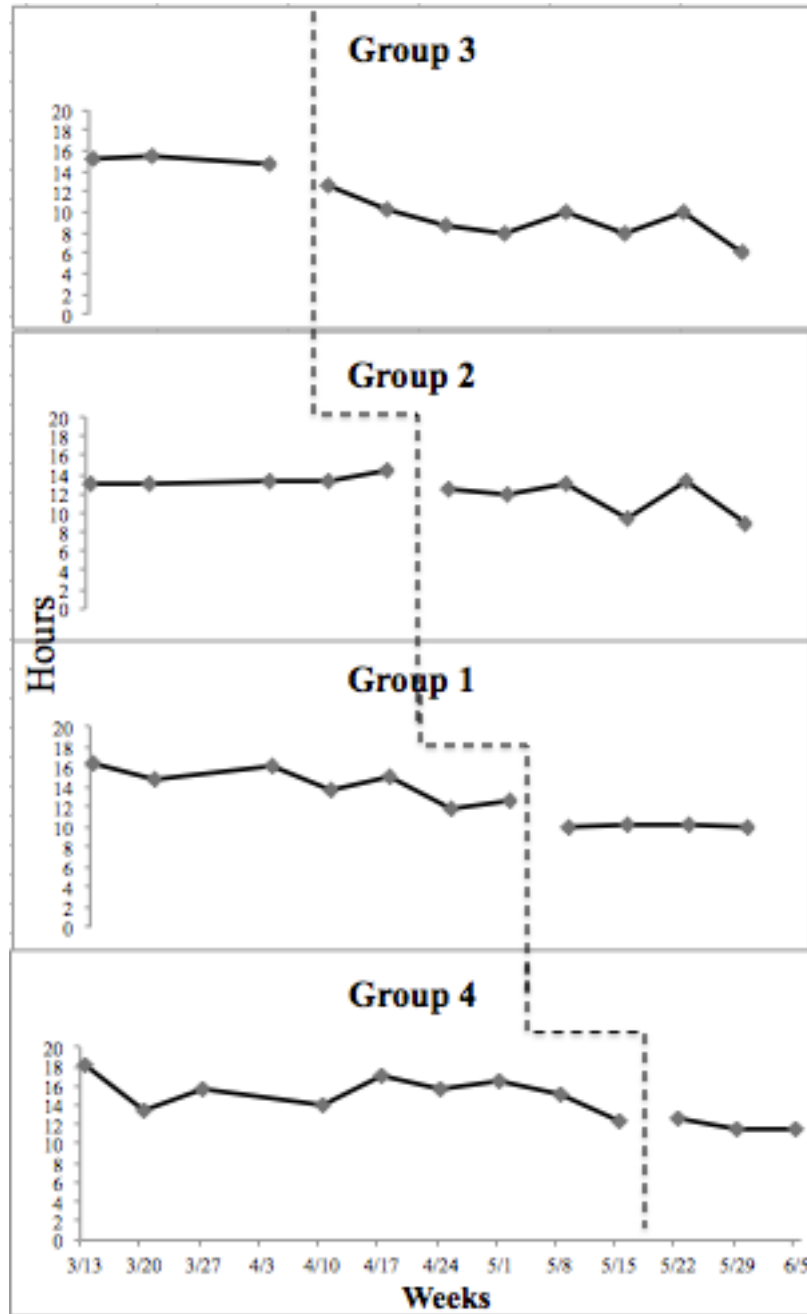


Figure 4
The effect of performance feedback on school psychologists' self-reported time spent in alternative activities (in hours/week)

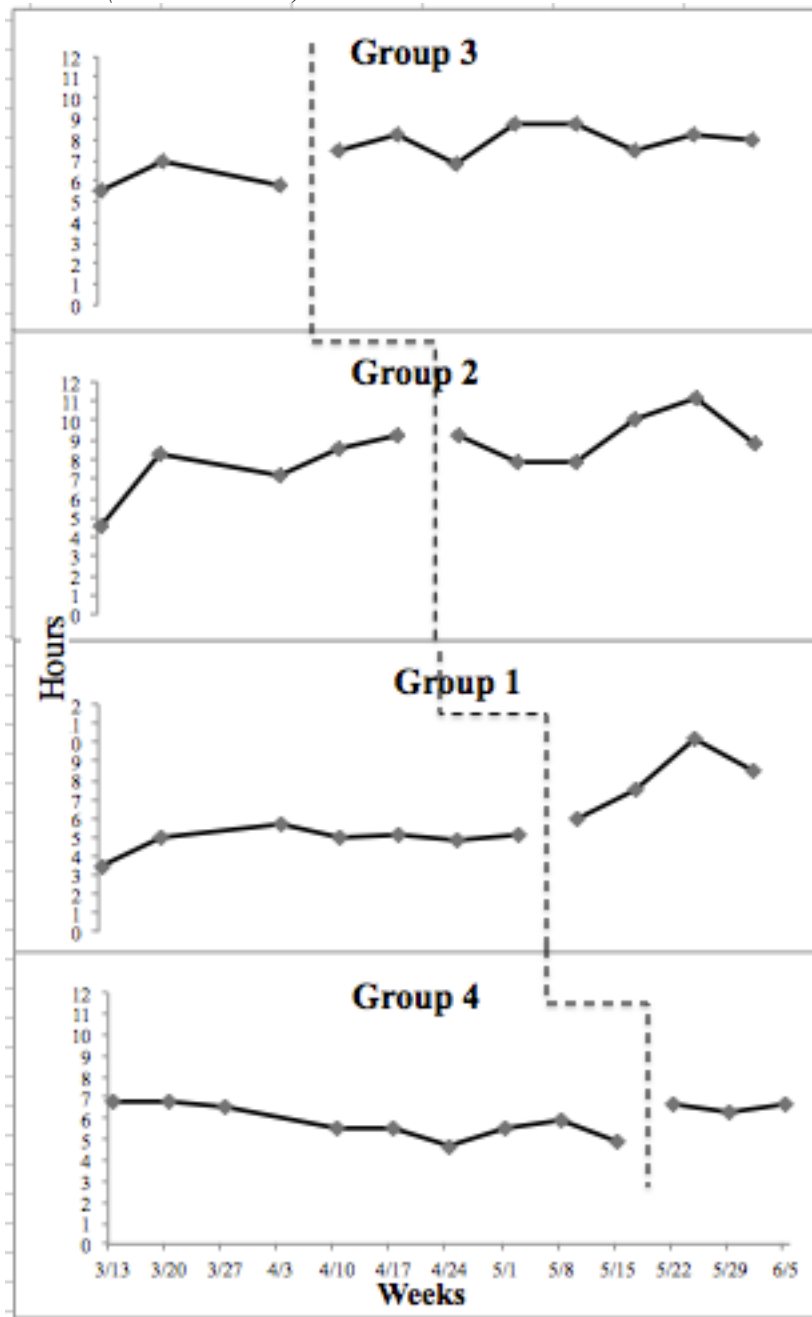
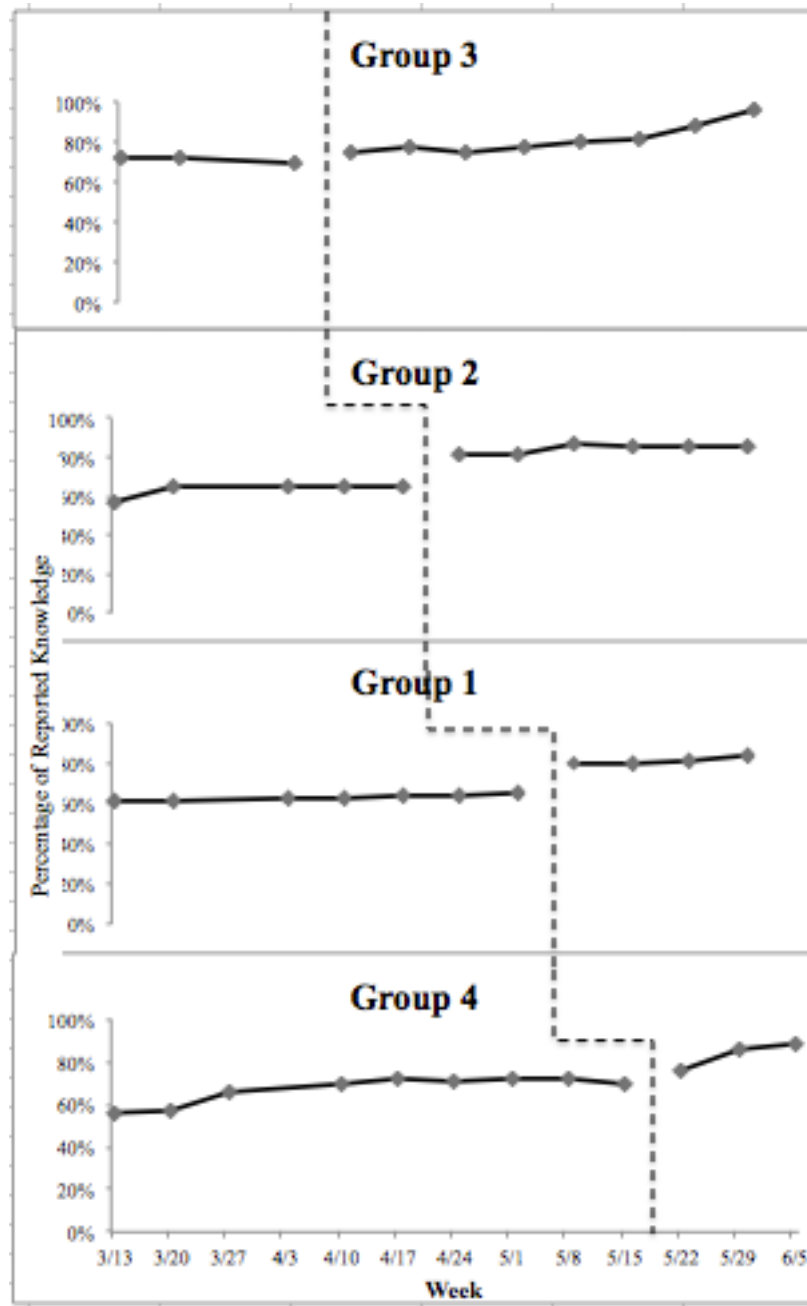


Figure 5
The effect of performance feedback on school psychologists' percentage of knowledge as measured by AKCS



Appendix A

Demographic Questionnaire

Please complete all questions to the best of your knowledge.

1. District: _____
2. Gender ____ Female ____ Male
3. Age _____
4. Ethnicity (optional)
____ American Indian/Alaska Native ____ Asian American/Pacific Islander
____ Black/African American ____ Caucasian ____ Hispanic ____ Other
5. What language(s) do you speak fluently other than English? _____
6. If you speak another language, do you provide psychological services to students/families in that language? ____ Yes ____ No ____ N/A
7. Years of experience in school psychology _____
8. Years of classroom teaching experience (Pre-K-High School) _____
9. Highest degree earned in school psychology (e.g., none, bachelors, masters, specialist, doctorate) _____
10. Highest graduate degree earned NOT in school psychology: please specify degree (e.g., none, doctorate) _____ and the area in which degree was earned (e.g., educational. leadership) _____
11. Certification/Licensure (Mark all that apply):
____ Nationally Certified School Psychologist
____ Certified by State Education Agency as School Psychologist
____ Certified by State Education Agency as Psychometrist, or similar title
____ Licensed Psychologist (doctorate req'd; State Board of Psychology)
____ Licensed Educational Psychologist (non-doctoral)
____ Licensed Psychological Associate or similar title (non-doctoral; State Board of Psychology)
12. Ratio of School Psychologists to Students at your school(s): _____

Appendix B

Psychological Report Survey-2

Rate the following questions based upon whether the report covers the following topics

1= Never/Not present; 2 = Poor inclusion/Unnecessary information included; 3 = Correct information included, but not Sufficient; 4= All necessary information is included, as well as accurate and complete

	1	2	3	4
<i>I. Referral Question</i>				
1) Is there evidence that the reason for the student’s referral was discussed explicitly and specifically, with objective terminology that can be measured and/or addressed?				
2) Do the areas of concern in the referral question connect to measurable domains?				
3) Can the referral question be directly linked to evidence-based intervention/instruction?				
<i>II. Record Review & Background Information</i>				
4) Were relevant health & background information included?				
5) Were relevant past grades, test scores, language information, current levels of performance, educational programming, and/or previous services reviewed?				
6) Does the background information section contain relevant information to the referral question?				
7) Were the attendance and discipline records reported?				
8) Were the individuals involved in the students’ education interviewed objectively (e.g., teachers, parents, student)?				
<i>III. Observations in ALL Relevant Instructional Settings</i>				
9) Was the student observed in the classroom during the time to which concerns are reported?				
10) Were the observation data presented objectively?				
<i>IV. Intervention Results</i>				
11) Were previously attempted interventions documented?				
12) Is there evidence that data-based descriptions of the intervention (frequency, duration, etc.) were presented?				

13) Were the interventions listed evidence-based?				
14) Were data used to support whether prior interventions were successful/unsuccessful (progress monitoring data)				
	1	2	3	4
<i>V. Assessment Results</i>				
15) Were the tools directly linked to the referral question(s)?				
16) Was there evidence to show that the assessment tools were used appropriately and discussed appropriately (based on <i>The Standards for Educational and Psychological Testing</i>)?				
17) Will the assessments produce information that will inform instruction/interventions typically used in a classroom environment?				
18) Were the test results discussed objectively?				
19) Were the student's strengths and weaknesses discussed in terms of their current skills (e.g., math, reading, language)?				
20) Were response data and/or screening reported?				
<i>VI. Conclusions and Recommendations</i>				
21) Were all relevant data summarized?				
22) Were the deficit areas discussed in terms of an academic skill that can be improved through intervention?				
23) Are the assessment data summarized in a way that will help inform future intervention planning?				
24) Are the assessment data summarized in order to help inform team eligibility decisions?				
25) Are the recommendations directly tied to identified areas of skill-based need?				
26) Were the recommendations clearly linked to the results of the assessment and/or intervention?				
27) Is there evidence that all recommendations are evidence-based?				
28) Were recommendations are specific and appropriate?				
29) Were the interventions/recommendations presented in such a way that makes them easy to understand and implement in the typical classroom setting?				
<i>VII. Lack of Technical Jargon and Clarity</i>				

30) Was the report free of technical jargon?				
31) Were the data were presented in a clear manner?				
<i>VIII. Exclusionary Factors</i>				
32) Is there evidence to support that visual, hearing, or motor disabilities were considered?				
33) Is there evidence to support that intellectual disabilities were considered?				
	1	2	3	4
34) Is there evidence to support that emotional disturbance was considered?				
35) Is there evidence to support that cultural factors were considered?				
36) Is there evidence to support that environmental or economic factors were considered?				
37) Is there evidence to support that limited English proficiency was considered?				
38) Is there evidence to support that lack of appropriate instruction was considered?				

Definitions and Examples

I. Referral Question

1. Is there evidence that the reason for the student’s referral was discussed explicitly and specifically, with objective terminology that can be measured and/or addressed?
 - The student needs must be stated in the referral question.
 - i. Ex: Fluency issues are reported in the observation or interview section those concerns must be operationalized and included in the referral question.
 - Areas of concern are specific and stated objectively. The terminology allows for the behavior to be measured
 - i. Example: Sarah’s teacher reports she is concerned with his fluency as she fell far below benchmark on her fall screening
 - ii. Non-Example: Sarah’s teacher reports she is struggling in reading

2. Do the areas of concern in the referral question connect to measurable domains?
 - The referral question(s) identifies a specific skill that can be tested. The referral question provides guidance on a skill-based definition of the problem area(s).

- i. Example: The proposed assessment tools include a CTOPP-2 and CBMs to measure Andrew’s phonological awareness which is reported as a problem area by his teacher
 - ii. Non- Example: The proposed assessment tools include a test of visual motor-processing when the referral question refers to Andrew’s phonological awareness deficit
- 3. Can the referral question be directly linked to evidence-based intervention/instruction?
 - The referral question can be linked to skills that can be improved upon through evidence-based interventions:
 - i. Example: Jane was referred for a special education assessment due to teacher and parent concerns regarding her phonics skills.
 - ii. Non-Example: Jane was referred for a special education assessment due to teacher and parent concerns regarding her visual processing development.

II. Record Review & Background Information

- 4. Were relevant health & background information included?
 - Data that should be included:
 - i. Hearing and vision screening data because hearing or vision impairment could impact language development
 - ii. Any medications, diagnoses, or relevant medical conditions
 - iii. Relevant home information (language spoken at home, with whom the student lives with, home learning activities, past foster placements, etc.)
- 5. Were relevant past grades, test scores, language information, educational programming, and/or previous services reviewed?
 - Any previous educational data should be reported, including:
 - i. Grades and state test scores
 - ii. Language assessments (CELDT)
 - iii. Previous services (special education)
 - iv. Core instruction- a review of Tier 1 or core instruction
- 6. Does the background information section contain relevant information to the referral question?
 - Data that are relevant and support the reason for referral should be documented and data that are not relevant should be excluded. Unnecessary data may take away from the focus on current skill deficits and lead to “admiring the problem”
 - Example: Tommy lives with his biological mother, father, and sister in Riverside.

- Non-Example: Tommy lives with his biological mother who was previously diagnosed with diabetes, his biological father who currently takes medication for high cholesterol, and his sister who was in special education for a speech and language deficit in preschool.

7. Were the attendance and discipline records reported??
 - Documentation of attendance and discipline
 - i. Attendance records may reveal if the student has been unable to make progress due to a substantial number of absences, rather than an underlying disability
 - ii. Discipline records may show if a child's behavior is impacting his/her academic progress

8. Were the individuals involved in the students' education interviewed objectively (e.g., teachers, parents, student)?
 - Interviews provide information of the student's needs and when the problems are seen by the individuals most involved in the student's life
 - The interview should provide a summary of relevant information that is provided in behavioral terminology that is used to inform the reason for referral, as well as the assessment, and interventions
 - i. Any additional concerns that are mentioned during an interview should be included in the referral question and addressed
 - Examples of structured interview forms are:
 - i. Functional Assessment of Academic Behavior (FAAB)
 - ii. Functional Assessment Checklists for Teachers & Staff (FACTS)
 - iii. Problem Identification Interview (PII)

III. Observations in ALL Relevant Instructional Settings

9. Was the student observed in the classroom during the time to which concerns are reported?
 - The purpose of the observation for academic problems is in order to determine if the instructional environment is a good match for the student and/or if the student is academically engaged during instruction. This can be conceptualized as:
 - i. **I** – Instruction
 - Is a direct instruction methodology being used? Information from the FAAB can also be used to inform this area.
 - ii. **C** – Curriculum
 - The curriculum can also be considered, although for most schools a standardized curriculum is being used.
 - iii. **E** – Environment

- Is the environment helping or not helping the student learn. For example, think about rates of positive reinforcement and opportunities to practice appropriate behaviors.
- iv. **L – Learner**
- A primary area of consideration in relation to the learner is academic engaged time. The Behavioral Observation of Student in Schools (BOSS) is a systematic method for collecting academic engaged time data.
 - The student must be observed during the instructional period where problems are reported.
 - i. Example: if the concern is reading, the student should be observed during language arts in his/her general education class, as well as during intervention.
10. Were the observation data presented objectively?
- The observational data should be reported objectively and in behavioral terminology to show the student’s performance based on objective data rather than subjective observation
 - i. Example: Kate raised her hand to answer the teacher’s questions 5 times and was called on 2 of the 5 opportunities. When answering the question, Kate referred to the text and was able to describe the scene that was being asked in the question. She was actively engaged in the activity for 95% of the observation period.
 - ii. Non-Example: Kate appeared to be engaged in the activity and answered questions when the teacher called on her.

IV. Intervention Results

11. Were previously attempted interventions documented?
- Pre-referral interventions must be attempted prior to special education referral, even if RTI for eligibility is not being used
 - i. IDEA (2004) emphasizes the use and necessity of pre-referral interventions
 - Education Code § 56303: “A pupil shall be referred for special educational instruction and services only after the resources of the regular education program have been considered and, where appropriate, utilized”
12. Is there evidence that data-based descriptions of the intervention (frequency, duration, etc.) were presented?
- Information about the intervention should be provided, including:

- i. Description and/or name of the intervention, frequency of intervention, fidelity data, group size, skills that were targeted (e.g., phonics, fluency), length, how long the student has been in intervention
13. Were the interventions listed evidence-based?
- Is there research to support the use of the intervention described
 - i. Does it meet What Works Clearinghouse standards or have other empirical support?
14. Were data used to support whether prior interventions were successful/unsuccessful (progress monitoring data)?
- CBM probes or other methods were used to measure the effectiveness of the intervention
 - The progress was measured and documented repeatedly, overtime, at consistent intervals
 - The trend, level, and/or progress towards goals should be discussed

V. Assessment

15. Were the tools directly linked to the referral question(s)?
- The tools being used should be directly linked to the referral question in order to provide the team with information that can be used to inform special education eligibility and provide data to inform future instruction
 - i. The tools should be diagnostically and educationally appropriate and used to help the team form a decision and inform future instruction
 - Additional tools that are not used to answer the referral question should not be used
 - a. IDEA (2004)) § 300.304 (c)(2): “Assessments and other evaluation materials include those tailored to assess specific areas of educational need and not merely those that are designed to provide a single general intelligence quotient”
16. Was there evidence to show that the assessment tools were used appropriately and discussed appropriately (based on *The Standards for Educational and Psychological Testing*)?
- The assessment tools used should have published data to demonstrate adequate reliability and validity data to demonstrate
 - i. For individual decision-making, the minimum suggested reliability is .90 (Salvia, Ysseldyke, & Bolt, 2010)
 - IDEA (2004) § 300.304 (c)(1)(iii): “Assessments and other evaluation materials used to assess a child under this part are

used for the purposes for which the assessments or measures are valid and reliable”

17. Will the assessments produce information that will inform instruction/interventions typically used in a classroom environment?
 - The results from the assessment should provide a clear link to the referral question and to future instruction
 - i. Example: Results from Kim’s CTOPP-2 indicate that she has a skill deficit in the area of phonological awareness.
 - ii. Non-Example: Results from Kim’s WRAML indicate that she has a working memory deficit.
 - IDEA (2004)) § 300.304 (c)(7): “Each public agency must ensure that Assessment tools and strategies that provide relevant information that directly assists persons in determining the educational needs of the child are provided.”
18. Were the test results discussed objectively?
 - Assessment results should be provided objectively and without subjective inference
 - i. Example: Aaron’s full scale IQ, as measured by the WISC-IV, falls within the Average range 100(90-110).
 - ii. Non-Example: Aaron’s cognitive abilities are considered to be average, which, from my clinical experience, shows that he will not have problems processing incoming information.
19. Were the student’s strengths and weaknesses discussed in terms of their current skills (e.g., math, reading, language)?
 - Assessment results should be discussed in terms of a student’s skill deficits rather than abilities
 - i. Specific skills (e.g., phonological awareness) should be discussed
20. Were response data and/or screening reported?
 - Screening and response data should be included to show the student’s performance and progress towards a research-based goal
 - Factors related to intervention effectiveness were considered:
 - i. Treatment integrity, the duration and intensity of the intervention, and whether the intervention was an appropriate match to the student’s need

VI. Conclusion and Recommendations

21. Were all relevant data summarized?
 - All data that were collected (record review, observation, interview, testing) should be summarized in a way that reflects the referral question

- i. Example: Tara’s mother and teacher report concerns with her inattention during math. Direct behavioral observation data indicated that Tara is on-task approximately 80% during group instruction and 90% during independent seatwork.
 - ii. Non-Example: Tara’s mother and teacher report concerns with her inattention during math. The observation did not reveal any concerns.
22. Were the deficit areas discussed in terms of an academic skill that can be improved through intervention?
- Deficit areas should be described in terms of students skills rather than abilities
 - i. Example: The results from the CTOPP-2 indicate that Amy’s phonological processing is an area of weakness.
 - ii. Non-example: The results from the VMI indicate that Amy has difficulty integrating visual stimuli.
23. Are the assessment data summarized in a way that will help inform future intervention planning?
- The data are described in terms of student skills that can be improved through intervention and instruction
 - The data report specific areas of skill deficit that can be used as baseline data and targeted in intervention
 - IDEA (2004) § 300.304 (c)(7): “Each public agency must ensure that Assessment tools and strategies that provide relevant information that directly assists persons in determining the educational needs of the child are provided.”
24. Are the assessment data summarized in order to help inform team eligibility decisions?
- Example: checklist at the end of a report including educational code for each disability:
 - Eligibility is a team-based decision; however, the assessment process should include data that can help inform this decision.
 - i. § 300.8 (c)(10) – *Specific learning disability* –
 - (i) General. Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in the imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia.

- (ii) Disorders not included. Specific learning disability does not include hearing problems that are primarily the result of visual, hearing, or motor disabilities, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage.

25. Are the recommendations directly tied to identified areas of skill-based need?

- The recommendations should be created for the individual student based on the findings from the assessment. The recommendations should be evidence-based and linked to the assessment data.
 - i. Example: The assessment results suggest that Anne has needs in the area of fluency. It is suggested that Anne is taught the following strategies:
 - Repeated reading with corrective feedback, direct instruction, guided reading, self-monitoring (i.e., using her finger to track)
 - ii. Non-Example: Anne should have her seat moved closer to the front of the classroom.

26. Were the recommendations clearly linked to the results of the assessment and/or intervention?

- The assessment data should drive the recommendations.
- Recommendations should be made for all areas of weakness that were identified during the assessment process

27. Is there evidence that all recommendations are evidence-based?

- Recommendations should be evidence-based, but not be for a specific intervention (e.g., Read Naturally)
 - i. The focus should be on the skill deficits that were identified during the assessment and linked to evidence-based practices

28. Were recommendations are specific and appropriate?

- Recommendations should be specific for the student and based on the student's skill based needs

29. Were the interventions/recommendations presented in such a way that makes them easy to understand and implement in the typical classroom setting?

- Recommendations that are clearly stated and understandable to general education and special education teachers
 - i. Example: Use direct instruction with explicit, corrective feedback
 - ii. Non-Example: Implement a working memory intervention

VII. *Lack of Technical Jargon and Clarity*

30. Was the report free of technical jargon?

- The report can be easily understood by parents and teachers
 - i. Example: Jim’s assessment results demonstrate that he has weakness in computation.
 - ii. Non-Example: Jim’s deficiency in the area visual-motor processing causes a lack of integration between visual stimuli and his ability to produce clearly formed graphical representations.
31. Were the data were presented in a clear manner?
- The data are clear and presented in a visually pleasing way (i.e., graphically)
 - The report is in a consistent format and same font (size and style)

VIII. Exclusionary Factors

- § 56433 (a) “That term [Specific Learning Disabilities] does not include a learning problem that is primarily the result of visual, hearing, or motor disabilities, of intellectual disabilities, of emotional disturbance, or of environmental, cultural, or economic disadvantage.”
32. Is there evidence to support that visual, hearing, or motor disabilities were considered?
33. Is there evidence to support that intellectual disabilities were considered?
34. Is there evidence to support that emotional disturbance was considered?
35. Is there evidence to support that cultural factors were considered?
36. Is there evidence to support that environmental or economic factors were considered?
37. Is there evidence to support that limited English proficiency was considered?
38. Is there evidence to support that lack of appropriate instruction was considered?
- To ensure that underachievement in a child suspected of having a specific learning disability is not due to lack of appropriate instruction in reading or math, the group must consider, as part of the evaluation described in §§ 300.304 through 300.306
 - i. Data that demonstrate that prior to, or as part of, the referral process, the child was provided appropriate instruction in regular education settings, delivered by qualified personnel; and
 - ii. Data-based documentation of repeated assessments of achievement at reasonable intervals, reflecting formal assessment of student progress during instruction, which was provided to the child’s parent

Appendix C

Time Survey

Please complete all information to the best of your knowledge
Place a check or “X” in the amount of time that most reflects your practice this past week.

Date: _____ District: _____

	0-1 Hour	2-3 Hours	4-5 Hours	6-7 Hours	8+ Hours
1) During this week, approximately how much time did you spend administering and scoring cognitive or processing tests for a student or students with or suspected of having a Specific Learning Disability?					
2) During this week, approximately how much time did you spend administering and scoring additional norm referenced achievement tests for a student or students with or suspected of having a Specific Learning Disability?					
3) During this week, approximately how much time did you spend administering and scoring or interpreting Curriculum Based Measurement (CBM) achievement tests for a student or students with or suspected of having a Specific Learning Disability?					
4) During this week, approximately how much time did you spend writing reports for a student or students with or suspected of having a Specific Learning Disability?					
5) During this week, approximately how much time did you spend delivering or planning intervention services (behavior and/or academics)?					
6) During this week, approximately how much time did you spend conducting mental health services (i.e., group counseling, individual counseling, individual social skills, social skills groups)?					
7) During this week, approximately how much time did you spend providing consultative services (problem solving with a teacher or staff member)?					

Appendix D

Assessment Knowledge and Competency Scale

For the following, please indicate your current level of knowledge and competence applying these principles in your SLD psychoeducational reports

(1) = Very Low Knowledge * (2) Somewhat Low Knowledge * (3) Somewhat High Knowledge * (4) Very High Knowledge

	1	2	3	4
1. Developing an operationally defined referral question that can be directly linked to instruction				
2. Objectively reporting relevant background information to support the referral question				
3. Presenting observation data behaviorally/objectively				
4. Including data-based descriptions of previous interventions (frequency, duration, intensity)				
5. Including intervention response data				
6. Discussing assessment results as linked to the referral question and in terms of students' skills				
7. Using tools that have sufficient reliability and validity as defined by <i>The Standards for Educational and Psychological Testing</i>				
8. Developing conclusions and recommendations that are tied to identified areas of skill based need				
9. Presenting data in a way that that lacks technical jargon				
10. Identifying data to support the exclusionary factors for SLD				

Appendix E

Barriers Survey **Please answer the following questions.**

1. What was the hardest part of including more Evidence-Based, intervention-focused data in your reports?
 - a) I did not know what I needed to include
 - b) There were district limitations (legal requirements), which prohibited me from changing my reports
 - c) I did not agree with the changes discussed
 - d) None/it was not hard
 - e) Other (please explain)

2. What was the hardest part in engaging in more consultation services (problem solving with teachers and staff)?
 - a) I did not increase my consultation services
 - b) I did not think my staff needed help
 - c) I did not feel qualified to consult with teachers/staff
 - d) I did not know how to consult with the teachers/staff
 - e) None/it was not hard
 - f) Other (please explain)

3. What was the hardest part in spending more time delivering or planning intervention services (behavior and/or academics)?
 - a) I did not increase my time spent in delivering or planning interventions
 - b) I did not think that more time needed to be spent delivering or planning interventions
 - c) I did not feel qualified to deliver or plan interventions
 - d) I did not know how to plan or deliver the interventions
 - e) None/it was not hard
 - f) Other (please explain)

4. What was the hardest part in spending more time conducting mental health services (i.e. group counseling, individual counseling, individual social skills, social skills groups)?
 - a) I did not increase my time spent in conducting mental health services
 - b) I did not think that more time needed to be spent conducting mental health services
 - c) I did not feel qualified to conduct mental health services
 - d) I did not know how to conduct mental health services
 - e) None/it was not hard
 - f) Other (please explain)

Appendix F

Procedural Treatment Integrity Checklist

District: _____ Date: _____

	Observation
<ul style="list-style-type: none">▪ Provided data of progress	_____
<ul style="list-style-type: none">▪ Provided examples and non-examples of areas with high scores	_____ _____
<ul style="list-style-type: none">▪ Provided examples and non-examples of areas with low scores	_____
<ul style="list-style-type: none">▪ Provided opportunities to collaborate/brainstorm	_____
<ul style="list-style-type: none">▪ Provided time for questions	_____