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Performance-based assessment of school psychology interns : analysis of problem-solving skills as demonstrated in comprehensive case examinations

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PERFORMANCE-BASED ASSESSMENT OF SCHOOL PSYCHOLOGY INTERNS:
ANALYSIS OF PROBLEM-SOLVING SKILLS AS DEMONSTRATED IN
COMPREHENSIVE CASE EXAMINATIONS

An Abstract of a Thesis
Submitted
In Partial Fulfillment
of the Requirements for the Degree
Education Specialist

Kimberly Suzanne Hansen
University of Northern Iowa
December 2010

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Entitled: Performance-based Assessment of School Psychology Interns: Analysis of Problem-Solving Skills as Demonstrated in Comprehensive Case Examinations

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ABSTRACT

School psychologists are integral partners in the facilitation of the problem-solving process, especially when the process is embedded within a tiered service delivery system incorporating response to intervention philosophies. Therefore, it is important that new school psychologists entering the field be competent in the skill areas needed to produce positive student outcomes. It is important for school psychology training programs to assess these competencies to improve individual student competencies as well as to improve the training provided by the program in the future. Comprehensive case studies are performance-based assessments that can be utilized to evaluate individuals, as well as training programs, to ensure they are effectively serving clients and producing positive, measurable outcomes.

The purpose of this study is to evaluate a sample of case studies, discussing the results in terms of the feedback they provide. Are comprehensive case study examinations a useful tool to evaluate individual performance as well as university training programs? This study aims to provide information on how case study examination data can be used to evaluate competencies in problem-solving.

CHAPTER 1

INTRODUCTION

“Educational reform initiatives have shifted the focus of American education from process to outcomes.... Standards, outcomes, and accountability are now seen as the foundation of education” (Waldron & Prus, 2006, p. 2). Public schools are being held accountable for the educational gains of the student body. There are significant consequences for districts continuously failing to make sufficient progress or not meeting grade-level standards. The majority of students must meet specified grade-level expectations and/or make sufficient growth every year. Because of this, school districts have placed a high priority on assessment throughout the school year and are using that information to identify students at-risk for not meeting expectations at the end of the year. Many school districts have adopted a systematic way of identifying at-risk students and developing interventions in order to address the area of concern. School psychologists have revised their school roles and have become significant partners in this new process.

According to *School Psychology: A Blueprint for Training and Practice III* (Ysseldyke et al., 2006), “school psychologists should be good problem solvers who collect information that is relevant for understanding problems, make decisions about appropriate interventions, assess educational outcomes, and help others become accountable” (p. 18). National Association of School Psychologists (NASP) Standards require that all school psychologist candidates in approved programs “demonstrate the professional skills necessary to deliver effective services that result in positive,

measurable outcomes” for clients (NASP, 2000, p. 14). Although the practice of school psychology varies greatly from place to place and practitioner to practitioner, research has provided the field with a set of standards to be considered current best practices for addressing student concerns.

Traditionally, a school psychologist’s primary function in the schools was to administer standardized tests to determine whether a child had a disability and was eligible for special education. Over the past two decades, the preferred role of the school psychologist has transformed from special education “gatekeeper” into a problem solver (Reschly, 2008). The focus is no longer on labeling and placing students in special education but finding solutions to student problems, regardless of label or placement. The introduction of this paper will describe the problem-solving process in which current school psychologists are active participants, and likely facilitators. This description is followed by a review of means to evaluate the attainment of these problem-solving skills by new school psychologists.

Problem-solving Process

Problem-solving is “used whenever people act to eliminate a difference between what they currently sense or perceive and alternative conditions they value” (Deno, 2007, p. 11). In simpler terms, problem-solving is acting to reduce the discrepancy between what is desired and what is performed. In education, we look at the student’s present level of performance and compare it to some other expected or desired level of performance. Problem-solving cases could describe assessment and intervention at any

level, not just at the individual level and may involve both general education and special education intervention.

School psychologists are an integral part of the problem-solving process. School psychologists bring knowledge of child development, learning, assessment, and program evaluation to problem-solving teams. School psychologists apply these domains of knowledge to the educational community through a problem-solving perspective (Tilly, 2008). This perspective is focused on enhancing psychological and educational competencies by clearly identifying problems, analyzing the factors contributing to a problem, setting goals and analyzing the resources available to attain the goal, utilizing data to develop and implement interventions, monitoring progress towards goals and modifying interventions as needed, and evaluating outcomes and concluding interventions when warranted (Bergan & Kratochwill, 1990; Tilly, 2008).

Traditional problem-solving models typically include four or five components with intervention planning and implementation sometimes being considered separately. Problem identification, problem analysis, intervention, and evaluation are the basic components to all problem-solving models (Batsche, Castillo, Dixon, & Forde, 2008; Bergan & Kratochwill, 1990).

Problem Identification

The first phase of the problem-solving process is problem identification. During this phase, the student's behavior is operationally defined. This definition describes the discrepancy between current and desired levels of performance. The behavior should be defined as a skill or performance deficit, establishing whether the behavior is within the

student's repertoire. Teachers and parents are interviewed and observations are conducted to get a clearer picture of the problem. Baseline data on the student's behavior is established or collected and compared to the performance and rate of progress expected for students of that age or grade (Fuchs, 1995).

Problem Analysis

Once the problem has been operationally defined, the assessment process begins. Problem analysis is the "systematic process of assessment and evaluation aimed at understanding the causal and maintaining variables associated with an undesirable discrepancy" (Christ, 2008, p. 159). Christ suggests that problem analysis is the "link between a well-specified problem and a problem solution" (p. 159). School psychologists' intermediary goal as problem analysts is to establish a clear understanding of why a problem exists and determine what might be done to solve the problem (Christ, 2008). The assessment process then tests that hypothesis. The end goal is to establish problem solutions. Traditionally, assessment was done for categorization and placement purposes. Now, best practices strongly suggest that only assessments that improve the understanding of the problem and inform intervention development should be used (Brown-Chidsey, Steege, & Mace, 2008; Christ, 2008).

The foundation for effective school-based problem analysis is characterized by an emphasis on "the scientific method and body of knowledge, levels of inference, alterable causal and maintaining variables, characteristics of novice and expert analysts, and selective analysis at the systems, group, or individual level" (Christ, 2008, p. 160). Assessment should be collected with a multimethod, multidomain, and multisource

approach. To ensure the assessment addresses all areas of the problem and does not focus solely on the student, best practices suggests following the RIOT/ICEL matrix (Christ, 2008; Ysseldyke et al., 2006). RIOT stands for review of records, interview, observation, and test. Each of those assessment methods may be used in each of the ICEL domains. ICEL stands for instruction, curriculum, environment, and learner. Assessment must consider the environment and issues of diversity in order to fully understand the nature of the problem. All of the data collected should converge together to either support or reject the hypothesis. Data collected during the problem-solving process serves three purposes. First, the data must accurately assess the identified problem as critical to successfully complete task demands and adapt to the school environment. Second, the data must inform the development of interventions. Finally, the data must be sensitive enough to evaluate the effectiveness of those data (Batsche et al., 2008).

Intervention

Three-tiered service delivery model. Research suggests that the problem-solving process produces the best student outcomes when imbedded within a tiered (most often a three-tiered) service delivery system (Tilly, 2008). The problem-solving process was originally created to be used with individual students, one at a time. What has shifted over the years with the advancement of tiered service delivery models is the possibility for the process to “encompass all children, rather than only those who struggle” (Tilly, 2008, p. 27). Entry into the problem-solving process is no longer reliant solely on teacher referral. Instead, student problems are identified directly by performance on assessments

designed to assess basic skills. The model is applicable to all academic and social-emotional areas (Tilly, 2008).

Each tier represents “a group of students and a level of support that is necessary for those students to be successful” (Tilly, 2008, p. 27). Resources are allocated in direct proportion to student needs. Emphasis is put on delivering interventions in general education, allowing large numbers of students to benefit from additional support. This model increases the intensity of both problem solving and intervention delivery only when such intensity is necessary. Most students will achieve proficiency based on core instruction alone (i.e. Tier 1). Some will achieve proficiency based on core instruction plus additional, or supplemental, instruction to achieve proficiency (i.e. Tier 2). Then there are some students who will need intensive instructional interventions, in addition to core instruction, to meet standards for proficiency (i.e. Tier 3). Core instruction is the basic instruction provided to all students. The core curriculum is generally defined as “the curriculum that covers the school’s standards and benchmarks that all students at a grade level receive” (Tilly, 2008, p. 30). With an effective core curriculum, “approximately 80% of students should reach proficiency based on the core curriculum alone” (Tilly, 2008, p. 31). However, even with very effective core instruction, some students (approximately 10-15%) will need supplemental instruction. This may include additional core instruction minutes or possibly strategically planned instruction. For students with higher needs (approximately 5% of students), intensive instruction is sometimes needed. “Intensive instruction for students is typically individualized in both type and amount” (Tilly, 2008, p. 33).

Quality intervention. Intervention is defined as a set of procedures and strategies designed to improve student performance with the intent of closing the gap between current performance and expectations (Upah, 2008; Upah & Tilly, 2002). Within this definition are embedded the three main components of an intervention: (a) the intervention is carefully planned, (b) it is environmentally focused, and (c) it is goal directed (Tilly & Flugum, 1995). The specific intervention strategies selected should be based on the nature of the problem and the potential effectiveness of such strategies. The plan should include how each step will be completed and the materials needed to implement the procedures. In addition, it should also clarify who will do what, when they will do it, and where the procedures will take place (Upah, 2008). In order for interventions to be most successful, they must be linked to the assessment data collected during problem analysis (Batsche et al., 2008). Failure to link assessment data to interventions results in wasted intervention time and a decreased likelihood of student success. It can also lead to the misperception that the problem is more severe than originally thought and unnecessary special education referrals and/or placements.

Quality interventions are based on a sound behavioral definition, reliable and valid baseline data, and problem validation as well as informative assessment data. When planning a quality intervention, the desired outcome of the intervention must first be decided. Clearly written, justifiable goals and procedures for evaluating goal attainment are essential factors to successful interventions. There are three critical purposes for developing goals: (a) the teaching and intervention are directed, (b) the plan is focused on student outcomes, and (c) the methods for assessment and valuation are structured

(Fuchs, 1995). Every goal must be written in observable, measurable terms and include four components: (a) time frame, (b) condition, (c) behavior, and (d) criteria (Upah, 2008). Several factors should be considered in setting the criterion: (a) the student's current skill level, (b) the target behavior, (c) realistic growth rates, (d) reporting and follow-up schedules, and (e) the time period covered by the goal (Upah, 2008).

Throughout intervention implementation, student performance should be assessed so continuous evaluation can occur and interventions may be modified as needed (Hixson, Christ, & Bradley-Johnson, 2008). Batsche et al. (2005) suggest that the most reliable way to evaluate an intervention is through frequent and repeated monitoring (e.g. one to three times per week) of the target behavior. Data collected can be used to create a graphic display for the purpose of illustrating trends in student performance by repeatedly plotting the problematic behaviors in comparison to expectations (Upah, 2008). Graphing data enables the problem-solving team to detect small changes that otherwise might go unnoticed. It is also a great way to summarize student data. There are many ways to gather progress-monitoring data. Examples include curriculum-based measurement, checklists, frequency counts, observation procedures, percentages, permanent products, portfolios, rating scales, and rubrics. Progress-monitoring procedures during intervention must be the same as procedures used to collect baseline data during the problem identification phase. This is so that the team can be sure that changes in the data are the result of the intervention and not other factors. Simply collecting data is not sufficient. The data must be used in the decision-making process (e.g. modifications or changes of intervention and referrals for comprehensive evaluation).

Quality, evidence-based interventions linked to assessment data can still result in little to no student gains if the intervention is not implemented with adequate integrity. Gresham, Gansle, Noell, Cohen, and Rosenblum (1993) defined integrity as “the degree to which an intervention program is implemented as planned” (p. 254). The terms *intervention integrity*, *treatment integrity*, *treatment fidelity*, and *procedural reliability* are used interchangeably in the field of education. Intervention integrity can be difficult to assess accurately. It is a multifaceted concept that includes considerations of both how much of the intended content is implemented and how well it is implemented (Roach & Elliott, 2008; Upah, 2008). Certain characteristics facilitate an increased level of intervention integrity. Acceptability and rate of change produced by the intervention influence the level of buy-in to the intervention, leading to increased integrity. The level of training and motivation of the interventionist is also important. Another piece of intervention integrity that can frequently be overlooked is the motivation and cooperation of the student (Roach & Elliott, 2008).

Evaluation

The evaluation phase includes collection of progress-monitoring data from the intervention phase as well as the summative evaluation at the end of an intervention. The purpose of summative evaluation is to determine whether the intervention was successful and produced positive student outcomes. Two key pieces of information are looked at by the team to answer this question. One is the criterion, or decision rule, that was developed prior to implementation. The other is the difference between the student’s baseline performance and post-intervention performance. In addition, it is also recommended that

data continue to be collected periodically to determine whether the progress is maintained once the intervention is removed (Upah, 2008).

Monitoring and evaluating student outcomes is a major requirement for accountability considerations in public schools. There must be evidence that the education all students receive produces positive outcomes. The problem-solving process is one way for schools to ensure that at-risk students are identified at the earliest point possible and the necessary steps are taken to help those students be successful. The movement for accountability in educational outcomes has not only impacted K-12 public schools, but also many post-secondary training programs.

Evaluation of Candidates and Training Programs

NASP Domains of School Psychology Training and Practice

Effective implementation of the problem-solving process is directly linked to an increase in positive student outcomes (Tilly, 2008). Therefore, it is important to assure that new school psychologists entering the field acquire the appropriate competencies to positively impact students. School psychologists who complete NASP approved training programs are assumed proficient in all domains of school psychology training and practice. According to *School Psychology: A Blueprint for Training and Practice III* (Ysseldyke et al., 2006), for school psychologists to be effective, “they must have both a broad and deep understanding of the skills encompassed in each domain, as well as an ability to apply and integrate these skills fluently in everyday practice” (p. 14). It is not expected that new graduates will be at the same skill level as more experienced school psychologists, but it is expected that they have been exposed, in both theory and practice,

to all skill domains. Domains may be divided into two categories of competency, functional and foundational. There are currently 11 domains of school psychology training and practice that school psychologists are expected to be proficient (NASP, 2000; Ysseldyke et al., 1997; Ysseldyke et al., 2006; refer to Appendix A for a complete description of domains).

Functional competencies. School psychologists use assessment to systematically collect data to make empirically-based decisions. They develop appropriate, individualized goals for students and implement effective interventions to achieve and monitor those goals. School psychologists work to facilitate policies and practices to create safe, effective, and supportive educational environments. They contribute to the advancement of the physical and mental well-being of clients. School psychologists collaborate with stakeholders to promote the delivery of comprehensive services.

Foundational competencies. School psychologists effectively involve and work together with other stakeholders in the decision-making process at all levels. They have the skills to work with a diverse set of clients and use strategies based on individual characteristics, strengths, and needs. They evaluate and translate research into everyday practice and understand research design and statistics enough to facilitate program evaluations to improve the delivery of services. They practice following ethical guidelines and professional standards and continuously learn new skills. School psychologists utilize technology and sources of information in ways that safely enhance services to clients (NASP, 2000).

Training Program Evaluation

Training programs go through a rigorous cycle of program evaluations to maintain their NASP approved status. Programs must demonstrate that the 11 domains of training and practice are addressed in the program, adequately assessed, and competencies are attained by graduates (Waldron & Prus, 2006). Programs must form “linkages among (1) training standards that specify professional competencies, (2) continuous performance-based assessment of both individual students and program outcomes, and (3) requirements for state and national certification /licensure that focus on the demonstration of professional skills” (Waldron & Prus, 2006, p. 2).

When a program comes up for review by NASP, they must submit documentation for six assessments, including detailed scoring guides and criteria, descriptions, and aggregated candidate attainment data for the previous 3 years. Required assessments include state and/or national examinations, course content knowledge, practicum evaluations, intern evaluations, performance based evaluations, and impact on student learning. There are numerous methods of assessment for programs to choose from to meet these requirements. These methods include exit interviews, simulations, case studies, performance appraisals, portfolios, surveys of supervisors and employers, examinations, and candidate and graduate questionnaires (Waldron & Prus, 2006). This paper will focus on the use of case studies to assess candidates as well as training programs.

Case studies. Case studies are:

in-depth descriptions of referred cases and associated services and outcomes in authentic settings are another means to assess the application of knowledge and professional skill development, along with broad or specific issues of professional practice. Case studies can also serve to evaluate reasoning, in-depth understanding, and integration of knowledge...(p. 8)

along with assessing knowledge and practice skills (Waldron & Prus, 2006). Case studies can vary substantially because of differences in client characteristics and needs, referring issues, school systems, and other issues (Waldron & Prus, 2006). Cases could involve individual students, classrooms, grades, buildings, and districts. Cases can also involve issues within special education, general education, or a combination of the two.

Case studies can be utilized to assess competencies in a majority of the NASP domains of training and practice. Domains that may be assessed include: (a) data-based decision making; (b) consultation and collaboration; (c) effective instruction and development of cognitive and academic skills; (d) socialization and development of life skills; (e) student diversity in development and learning; (f) school and systems organization, policy development, and climate; (g) prevention, crisis intervention, and mental health; (h) home, school, community collaboration; (i) school psychology practice and development; and (j) information technology (NASP, 2000). The use of case studies can serve as a culminating evaluation of program candidates when they involve complex client cases that demonstrate the integration of professional skills (Waldron & Prus, 2006). The case study can be used to determine individual areas of strengths and

weaknesses. As mentioned above, case studies can also be utilized as part of a training program evaluation plan along with several other evaluation methods to measure student and program outcomes. Programs can use the information from the case studies to adjust the program and assess whether candidates are competent in the appropriate domains. Programs can also track the data over the years to identify trends. Case studies also can fulfill the NASP approval requirements for performance-based assessments and provide data on the impact on student learning.

Case studies are typically evaluated using rubrics that focus on the specific components of the case that are being assessed. For example, school psychologists who did not graduate from an approved training program but wish to become a Nationally Certified School Psychologist (NCSP) must submit a case study with his or her application. The rubric used to assess these case studies was developed in partnership with NASP and aligned to their standards of practice. Based on current best practices, the rubric assesses the essential components of the problem-solving process. It is required that school psychologist “candidates demonstrate the professional skills necessary to deliver effective services that result in positive, measurable outcomes” for clients and the case study method is used to assess these skills in this situation (NASP, 2000, p. 14).

Purpose of Study

The current study examines the implementation of the problem-solving process by a sample of specialist-level school psychologist interns. The effective implementation of the problem-solving process should result in outcomes that are more positive for students. The purpose of this study is to evaluate a sample of case studies, discussing the results in

terms of the feedback they provide. Are comprehensive case study examinations a useful tool to evaluate individual performance as well as university training programs? This study aims to provide information on how case study examination data can be used to evaluate competencies in problem-solving.

CHAPTER 2

METHOD

Materials

Materials used in this study are the written comprehensive case studies of nine school psychology interns selected for participation and the National School Psychology Certification System's NCSP Case Study evaluation rubric (refer to Appendix B to see the complete evaluation rubric). Permission to use the students' comprehensive case studies was granted by the Institutional Review Board and confidentiality was ensured. Anonymity was maintained by the removal of personal identifiers prior to being selected for the study.

There are many methods and possible criteria for evaluating case studies. Case studies can be used to assess a wide variety of skill sets. For the purposes of this study, each case study was evaluated using the NCSP Case Study evaluation rubric in order to assess the effectiveness of problem-solving skills and to demonstrate a positive impact on children. Assessment of competencies in the school psychology training domains is also important to practitioners and training programs. However, due to the lack of a common evaluation tool, such as the NCSP Case Study evaluation rubric, this researcher chose not to focus on those competencies in this study.

Comprehensive Case Study Examinations

Case studies were evaluated for nine specialist level school psychology interns who completed comprehensive case studies to meet the graduation requirements at a Midwestern university. This sample was drawn from three intern cohorts enrolled

between the 2006 and 2009 school years with all students having good academic standing in their program of study. Typical cohorts have 7 to 12 school psychology students enrolled. Nine interns were randomly selected for this study, three from each cohort. Every intern enrolled in the school psychology program is required to write and orally defend a comprehensive case study conducted during his or her internship as part of his or her performance-based evaluation. Case studies are a “means to assess the application of knowledge and professional skill development, along with broad or specific issues of professional practice. Case studies also serve to evaluate reasoning and in-depth understanding and integration of knowledge” and practice skills (Waldron & Prus, 2006, p. 8). The case study is presented in the spring, during the second semester of a 1500-hour internship. Oral defenses are open to the public and the written case study is available for public access even after the student leaves the program.

All school psychology interns enrolled in this particular program are required to complete a comprehensive case study examination during the spring of their internship year. Interns are to collaborate with other school staff members on at least one student case involving an academic, behavioral, or social-emotional concern. In the spring of the internship year, the interns must submit a paper describing the case in its entirety, relating decisions to current theory and research, and reflecting on case strengths and weaknesses. The interns must specifically describe their methods of problem identification, problem analysis, intervention implementation, and evaluation. Interns must also include a reflection section, discussing strengths and weaknesses as well as changes they would have liked to make. After submitting the paper, the intern must publicly defend his or her

case in front of a panel of school psychology faculty. The case is presented by the student to at least two program faculty members, answering any questions they may have. The NASP domains were used to develop the evaluation form and students are evaluated by at least two program faculty members. Unsuccessful completion of the case study examination results in the chance for the student to study or practice further areas needing improvement. The case study examination must be passed in order for a student to be approved for the next phase of the program.

There are two purposes for these case examinations. First, they are a culminating project that integrates knowledge and field experience and are used to evaluate individual students. Second, they can be an essential component of a training program evaluation plan. School psychology training programs must show evidence that they produce school psychologists who deliver effective services resulting in positive, measurable student outcomes. This documentation is required for continued NASP program approval (Waldron & Prus, 2006).

NCSP Case Study Evaluation Rubric

The National School Psychology Certification System's NCSP Case Study is required for all school psychologists who wish to become a Nationally Certified School Psychologist but did not complete a NASP approved graduate training program. School psychologists who were not trained by NASP approved programs fulfill this performance-based requirement by successfully completing the NCSP Case Study. The case study describes a case in detail using appropriate problem-solving procedures completed by the NCSP applicant.

The NCSP Case Study evaluation rubric was developed in alignment with NASP standards and is divided into the four phases of the problem solving process (a) problem identification, (b) problem analysis, (c) intervention, and (d) evaluation. Each phase is broken down into what NASP believes are the core components and rated on a three-point scale (Needs Development, Effective, Very Effective). Some items are only rated as either Effective or Needs Development. A copy of the NCSP Case Study evaluation rubric is included in Appendix B.

Problem identification. The evaluation of the problem identification phase contains six items. Items look at whether the problem was operationally defined using appropriate grade and/or peer expectations and explain the discrepancy between current and desired performance. It also looks to see if the problem was defined collaboratively, involving both teachers and parents. The problem should be defined as a skills and/or performance deficit and have baseline data with peer comparison data and computed trend lines.

Problem analysis. The evaluation of the problem analysis phase consists of three items, and looks for the hypotheses to be measurable, developed collaboratively with parents and teachers, and the function the behavior serves. It looks for converging hypotheses from multiple sources of data and for hypotheses to reflect an awareness of issues of diversity.

Intervention. The evaluation of the intervention phase contains eight items. Items assess whether the intervention is linked to observable, measurable goals and based on data from the problem analysis phase. It also assesses whether the intervention is

evidence-based and sensitive to individual differences and system constraints. It looks for the intervention to be developed collaboratively and verification of the acceptability of the intervention. The logistics should be included in the plan, unintended outcomes should be considered, and treatment integrity should be monitored.

Evaluation. The evaluation phase consists of six items and is assessed by looking at the graphing of student performance data, utilizing trend lines and/or goal lines. Data collection should demonstrate that the intervention is effective in comparison to data collected from additional sources and settings. Data is used to inform further decision-making and plans for generalization to other settings. Future modifications to the intervention should be considered collaboratively based on the analysis of all data and strategies for follow-up should be implemented.

Procedure

The case studies were selected by removing all personal identifiers from the papers and replacing them with a numerical identifier. Three case studies from each cohort were then randomly selected using a random number generator. Each case was then read and evaluated using the NCSP Case Study evaluation rubric by the researcher. To aid in analysis of the information, the rating scale used in the evaluation rubric ranging from “needs development” to “very effective” was assigned numerical value ranging from one to three. The total number of points possible ranged from 23 to 57. The researcher evaluated each case study twice to establish consistency in ratings. Ideally, a second researcher would evaluate the case studies; however, that was not possible in this

study. After the information was gathered from the case studies, strengths and weaknesses were analyzed.

CHAPTER 3

RESULTS

The evaluations for all case studies were analyzed using basic quantitative methods. The researcher evaluated each case study twice to establish consistency in ratings. Ratings were conducted six to eight weeks apart. There was 100% agreement in the ratings. The mean number of overall points attained by the sample was 42.22 points ($SD = 3.90$) out of 57.00 possible points. In other words, the sample earned approximately 74% of the points possible. Individual scores ranged from 34 points to 46 points. Two cases may be considered outliers, receiving ratings of 34 and 38 points. These are relatively lower than the rest of the sample whose scores clustered between 42 and 46 points. Overall, the sample was rated as effective or very effective on most skills with a few skills needing development.

Each individual phase of the problem-solving process was then analyzed separately (refer to Table C1 and Table C2 in Appendix C). In the Problem Identification phase, a large majority of the cases earned ratings in the effective to very effective range in operational definition, collaborative definition, baseline data, and parent/teacher involvement. About half of the cases were rated effective in the skill/performance deficit area, and only a third were rated effective in the area of explanation of discrepancy, with the remainder of the ratings in the needs development range for both items. In the Problem Analysis phase, the majority of cases were rated as effective or very effective on collaborative hypotheses and multiple sources of data; however, only a quarter of the cases were rated as effective in issues of diversity, with the remainder of the ratings in the

needs development range. In the Intervention phase, most cases were rated as effective in the areas of linked to goal statement, linked to assessment data, evidence-based, collaboratively developed, acceptability, and logistics; however, all or most of the cases were rated as needs development in the areas of unintended outcomes and the monitoring of treatment integrity. In the Evaluation phase, the majority of the cases were rated as either effective or very effective on charting progress, decision-making, collaborative modifications, and follow-up. Approximately half of the cases were rated as needs development in the area of comparison of progress and three quarters of the cases were rated as needs development in the area of transfer/generalization. The remainder of the cases were rated as effective. No cases were rated as very effective in these two areas.

CHAPTER 4

DISCUSSION

This study examined the implementation of the problem-solving process in the field by a sample of specialist-level school psychologist interns as demonstrated by a comprehensive case examination. The purpose of this study is to evaluate a sample of case studies and to discuss the results in terms of the feedback they provide. This study shows that case study examination data can be useful in evaluating the extent to which problem-solving skills are attained by school psychologists in the field.

The study found that the intern sample was effectively utilizing most of the core components of the problem-solving process; however, certain components meant to maximize effectiveness were not always included. The area of intervention development and implementation appeared to be an overall strength in the sample. Most case studies in the sample were collaborative, research-based, and linked to continuous assessment data. Key areas needing improvement include the assessment of intervention integrity and using quality data to make decisions. Several case studies did not include any information on the integrity of the intervention. Also, there was little discussion of how collected data was used in appropriate comparisons to guide decision-making as well as addressing issues of transfer/generalization of skills.

Feedback for Individuals

School psychology programs can use the information obtained by the case study to consult with the individual intern on specific areas needing improvement. School psychology programs may find when evaluating case study examinations specific areas in

the problem-solving process the intern may need develop further. For example, in this study one intern's case was rated as needs development in the area of operational definition. The program could take this information and share with the intern how a deficit in that particular skill may have affected ratings throughout the case. Programs may also find in the evaluation of case studies that particular cases are weaker overall. For example, in this study there were two cases that were evaluated to be somewhat weaker than the rest of the sample. This information could inform discussions regarding admissions requirements and strategies to support candidates. With this information, the intern can also better select professional development opportunities during his or her first years of employment that meet his or her needs. Individuals may also use the evaluation information as a way to facilitate discussions with their teams, schools, districts, or agencies on ways to improve their services to students.

Case studies may be useful for all school psychology practitioners, not just interns. Applying a case study rubric to a past case every year or so could facilitate continued growth in areas of weakness and also serve as a reminder of what components of the problem-solving process are most important. Case studies could also be utilized to track systemic changes, such as the implementation of a response to intervention framework, and the impact on how student referrals are handled.

Feedback for Training Program Improvement

Not only can the comprehensive case study examinations be useful to evaluate school psychology practitioners, but also school psychology training programs. These results provide useful feedback to the school psychology program about the performance

of candidates in the field. The results of this study show that students from this program have been trained to work collaboratively with staff and parents to help meet the needs of clients. This study shows that, on the average, the sample of interns was effective or very effective in the majority of problem-solving components. They are competent interpreters and collectors of assessment data, utilizing multiple methods of assessment and multiple sources of data. They develop evidence-based interventions addressing a variety of student concerns and these interventions are evaluated by a team and most of the time the interventions were shown to be effective. Looking at the results of the case studies overall can inform program improvement plans. For example, specific areas of the problem-solving process where this particular program may need to increase focus include: (a) identifying problems in more detail, such as describing the discrepancy more thoroughly and determining whether it is a skill and/or performance deficit; (b) using appropriate comparison groups; (c) considering issues of diversity; (d) considering unintended outcomes of intervention; (e) assessment of treatment integrity; and (f) planning for transfer and/or generalization of skills.

The program described in this study could utilize information from the case studies to analyze strengths and weaknesses in candidate experiences in the program. The results of this study suggest that the program produces new school psychologists with strong intervention competencies; however, intervention evaluation skills may need additional focus. These patterns in areas of strength and weakness could then be discussed by a school psychology program committee and ideas for improvement could then be implemented. For example, the committee may hypothesize that candidates do

not have enough field experience prior to internship to develop sufficiently effective evaluation skills. Field experiences may be too short for candidates to experience the problem-solving process in its entirety, and therefore have the least exposure to the evaluation phase. The program may then decide to either supplement or alter field experiences to better meet the needs of candidates.

School psychology training programs are required to document that candidates produce positive, measurable results while practicing in the field in order to maintain NASP-approved program status (Waldron & Prus, 2006). The comprehensive case study evaluation is one way for programs to document their impact on student outcomes using a performance-based assessment. Case studies have the potential to document student outcomes, but the evaluation component needs to be strong and intervention integrity ensured. Candidates are required to document the entire problem-solving process, including all assessment and progress monitoring data. If case studies document positive student outcomes, the training program could suggest that their candidates produce positive, measurable results for their clients. Training programs could even use the case study data to calculate effect sizes, giving program reviewers a clearer picture of the outcomes produced.

In this study, the NCSP Evaluation rubric was utilized in order to assess problem-solving skills. While this assessment tool was designed to evaluate individual performance, it has also shown in this study to be useful for training programs to assess program outcomes. It is recommended though that some adjustments be made in order for this rubric to be used to measure program outcomes. Some qualitative information should

be collected from the case studies in order to inform the quantitative results. Areas to be further analyzed may include background information and reflections on the case. It is important that the results of the case study examinations are impacted more by program training than by outside variables such as agency policies. This rubric is not the only assessment tool that can be utilized to assess case studies. Programs can develop their own evaluation tools in the areas that meet their needs. School psychology training programs are required to address and assess all the domains of school psychology training and practice (Waldron & Prus, 2006). Programs could design case study examinations to demonstrate that the provision of school psychological services is consistent with national standards. The results of comprehensive case study evaluations, combined with other assessments such as portfolios and Praxis II scores, address all of the areas that NASP has determined practicing school psychologists must be competent.

Limitations of Case Studies

There are some weaknesses in using the case study method to assess field-based practitioner skills and training programs. Some of the areas being assessed by the case study examinations are not in the direct control of the school psychologist. As mentioned earlier in this paper, school psychologists function primarily as a member of a team and work under the supervision of a more experienced school psychologist. With this in mind, the results of the case study examination do not necessarily reflect the individual competencies of the school psychologist. Systems level issues and group dynamics are a significant factor in these results. School psychologists working in environments that have not adopted a formal problem-solving process are likely to face numerous barriers

to implementing best practices. Also, school psychology interns typically follow the guidance of their internship supervisor, which may or may not result in doing what is deemed best practice in all situations. Intervention integrity, data collection, and evaluation are considered to be some of the hardest components of the problem-solving process to fulfill effectively, simply because of their reliance on different individuals (Upah, 2008). However, even in imperfect situations school psychologists must adapt in order to best meet the needs of clients. Allowing opportunity for reflection in the case study can assess what the school psychologist would have done, given the reduction of barriers.

Case study examinations only rely on the written description and oral defense of the intern. When an individual sits down to write about a past or current case, there is potential to overlook or misinterpret case details. Using the concept of intervention integrity as an example, an intern may have assessed integrity by direct observation but forgotten to document it, and thus forget to incorporate that component into the written case study. However, omission of essential components indicates that the intern may not entirely understand the importance of that component. Also, there must be a way to verify information presented in the case studies, such as having a supervisor sign off on the case to ensure the validity of the assessment.

Limitations of Study and Suggestions for Future Research

There are some limitations to the current study. First of all, only a small sample of school psychologist interns were selected for this study, so caution should be taken when generalizing the case study results. Also, only one assessment method, the case study,

was analyzed in this study. Many other methods of assessment that training programs can utilize may produce the same level feedback on the competencies of candidates.

Future research should look at comparisons of these various methods to determine the most efficient and informative methods of candidate and program evaluation to be included as part of a comprehensive training program evaluation plan. In addition, other measures could be used to validate information obtained through the comprehensive case study. Future research could also examine whether there is any difference in the problem-solving skills demonstrated for interns presenting academic cases versus behavioral cases. The effectiveness of the NCSP Case Study evaluation rubric for assessing the attainment of NASP domains could also be studied. Also, a more qualitative approach could be taken with studies similar to this, examining the impact of background knowledge on the inclusion of problem-solving components. The reflection component of case studies could also be analyzed more thoroughly to see if it can help programs distinguish between training issues and agency/systems issues.

Conclusion

In conclusion, school psychologists are integral partners in the facilitation of the problem-solving process, especially when the process is embedded within a tiered service delivery system incorporating response to intervention philosophies. Therefore, it is important that new school psychologists entering the field be competent in the skill areas needed to produce positive student outcomes. It is important for school psychology training programs to assess these skills to improve individual student skills as well as to improve the training provided for the entire program in the future. Comprehensive case

studies are performance-based assessments that can be utilized to evaluate individuals, as well as entire programs, to ensure they are effectively serving clients and producing positive, measurable outcomes. Case studies can be one component of a comprehensive evaluation plan, producing feedback that assists in the improvement of individual school psychologists and school psychology training programs.

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APPENDIX A

NASP DOMAINS OF SCHOOL PSYCHOLOGY TRAINING AND PRACTICE

Domain	Description
1. Data-based decision making and accountability	School psychologists should be good problem solvers who collect information that aids in understanding problems, making decisions about appropriate interventions, and assessing educational outcomes.
2. Consultation and collaboration	School psychologists have knowledge of behavioral, mental health, collaborative, and/or other consultation models and methods and of their application to particular situations. School psychologists collaborate effectively with others in planning and decision-making processes at the individual, group, and system level.
3. Effective instruction and development of cognitive and academic skills	School psychologists help schools develop challenging but achievable cognitive and academic goals for all students, taking into account the need to adjust expectations for individual students, or to implement alternative ways to monitor or assess individual student progress toward goal or standards accomplishment.
4. Socialization and development of life skills	School psychologists should be leading mental health experts in schools who are knowledgeable about development in social, affective, and adaptive domains and are able to identify and apply sound principles of behavior change within these domains in order to help design and implement programs to promote health.

5. Student diversity in development and learning	School psychologists have knowledge of individual differences, abilities, and disabilities and of the potential influence of biological, social, cultural, ethnic, experiential, socioeconomic, gender-related, and linguistic factors in development and learning.
6. School and systems organization, policy development, and climate	School psychologists should provide leadership in developing schools as safe, caring, and inviting places in which there is a sense of community, in which contributions of all persons are valued, in which there are high expectations of excellence for all students, and where home-school-agency partnerships are valued.
7. Prevention, crisis intervention, and mental health	School psychologists have knowledge of human development and psychopathology and of associated biological, cultural, and social influences on human behavior. They contribute to prevention and intervention programs that promote the mental health and physical well-being of students.
8. Home-School-Community collaboration	School psychologists have knowledge of family systems, including family strengths and influences on student development, learning, and behavior, and of methods to involve families in education and service delivery.
9. Research and program evaluation	School psychologists have knowledge of research, statistics, and evaluation methods. They evaluate research, translate research into practice, and understand research design and statistics in sufficient depth to plan and conduct investigations and program evaluations for improvement of services.

10. School psychology practice and development

School psychologists have knowledge of the history and foundations of their profession; of various service models and methods; of public policy development applicable to services to children and families; and of ethical, professional, and legal standards.

11. Information technology

School psychologists should be able to apply technology to improve outcomes and to support all other domains.

APPENDIX B

NCSP CASE STUDY EVALUATION RUBRIC

Section 1: Problem Identification

	Very effective	Effective	Needs Development
1.1	The student's behavior is defined in the context of appropriate grade and/or peer expectations, e.g., local norms	The student's behavior is operationally defined	The student's behavior is identified but not operationally defined
1.2		The problem is collaboratively defined	The problem is not collaboratively defined
1.3	The discrepancy between current and desired level of performance is explained	The behavior is operationally defined or quantified in terms of both current and desired levels of performance	The behavior is not operationally defined in terms of both current and desired levels of performance
1.4	Baseline includes the student behavior and peer/grade norms and expectations with computed trend lines	A baseline for the student is established using sufficient data	A baseline for the student behavior is not established or has insufficient data
1.5		The student behavior is identified as a skills and/or performance deficit	The student behavior is not identified as a skill and/or performance deficit

1.6		Parents/guardians and teachers are involved in the problem-identification process	Parents/guardians and teachers are not involved in the problem-identification process
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Section 2: Problem Analysis

	Very Effective	Effective	Needs Development
2.1	Hypotheses are generated through collaboration with teacher and/or parent	One or more hypotheses are developed to identify the functions that the behavior serves and/or the conditions under which the behavior is occurring or has developed in two or more of the following areas: child factors, curriculum, peers, teacher, classroom, home	Hypotheses are not developed, hypotheses are developed in only one area and/or hypotheses are not measurable
2.2	There are multiple sources of data that converge on each proposed hypothesis	There is evidence that appropriate data are collected to confirm or reject the proposed hypotheses. Appropriate data include one of more of the following: record review, interview, observation, testing, and self report	Appropriate data are not collected to confirm or reject the hypotheses
2.3		Hypotheses reflect an awareness of issues of diversity (e.g. physical, social, linguistic, cultural)	Hypotheses do not reflect and awareness of issues related to diversity (e.g. physical, social, linguistic, cultural)

Section 3: Intervention

	Very Effective	Effective	Needs Development
3.1		Intervention is linked to observable, measurable goal statement(s)	Intervention is not linked to observable, measurable goal statement(s)
3.2		Intervention(s) selection is based on data from problem analysis and hypothesis testing	Intervention(s) selection is not based on data from problem analysis and hypothesis testing
3.3		Intervention(s) is evidence-based (e.g., research literature, functional analysis, single case design analysis)	Intervention(s) is not evidence-based (e.g., research literature, functional analysis, single case design analysis)
3.4		Intervention(s) is developed collaboratively	Intervention(s) is not developed collaboratively
3.5		Intervention(s) reflects sensitivity to individual differences, resources, classroom practices, and other system issues. Acceptability of intervention is verified	Intervention(s) does not reflect sensitivity to individual differences, resources, classroom practices, and other system issues. Acceptability of intervention is not verified
3.6		Logistics of setting, time, resources, and personnel are included in the	Logistics of setting, time, resources, and personnel are not

		intervention plan	included in the intervention plan
3.7		Intervention selection considers unintended outcomes or limitations	Intervention selection does not consider unintended outcomes or limitations
3.8		Intervention is monitored and data are provided to ensure that it is implemented as designed	Treatment integrity is not monitored

Section 4: Evaluation

	Very Effective	Effective	Needs Development
4.1	Charting includes student performance trend lines, and/or goal lines	Progress monitoring data are demonstrated on a chart	Progress monitoring data are not demonstrated on a chart
4.2	Progress monitoring data are demonstrated to be effective when compared to data generated from multiple sources/settings	Progress monitoring data are demonstrated to be effective when compared to baseline data	Intervention is not demonstrated to be effective through data comparison
4.3	Response to intervention data is used to inform problem solving and decision making. Single case design	Data are used to inform further problem solving and decision making (i.e., continuation of intervention, modification of intervention,	Data are not used to inform further problem solving and decision making

	was specified (e.g., changing criterion, parametric, component analysis, multiple baseline)	maintenance of intervention)	
4.4	Strategies for transfer/generalizing outcomes to other settings are documented as effective	Strategies for transfer/generalizing outcomes to other settings are addressed	Strategies for transfer/generalizing outcomes to other settings are not addressed
4.5	Modifications for future interventions are considered based upon collaborative examination of effectiveness data	Effectiveness of intervention is shared through collaboration with parents, teachers, and other personnel	Effectiveness of intervention is not shared or communicated
4.6	Strategies for follow-up are developed and implemented	Suggestions for follow-up are developed (e.g., continued progress monitoring, transition planning)	Suggestions for follow-up are not developed

APPENDIX C
CASE STUDY EVALUATION DATA TABLES

Table C1.

Intern Proficiency Overall and by Problem-Solving Phase

	Problem Identification	Problem Analysis	Intervention	Evaluation	Overall
Mean (possible)	11.00 (15.00)	6.00 (8.00)	13.78 (16.00)	11.44 (13.00)	42.22 (57.00)
Standard Deviation	1.12	1.00	1.56	1.59	3.90
Percentage of Total Points	73.33	75.00	86.11	63.58	74.07

Table C2.

Problem-Solving Component Skill Proficiency Ratings

Component	Needs		Effective		Very Effective	
	Development					
	N	%	N	%	N	%
Problem Identification						
1.1 Operational definition	1	(11.11)	5	(55.56)	3	(33.33)
1.2 Collaborative definition	0	(0.00)	9	(100.00)	-	
1.3 Explanation of discrepancy	6	(66.67)	3	(33.33)	0	(0.00)
1.4 Baseline data	1	(11.11)	8	(88.89)	0	(0.00)
1.5 Skill/performance deficit	4	(44.44)	5	(55.56)	-	
1.6 Parent/teacher involvement	0	(0.00)	9	(100.00)	-	
Problem Analysis						
2.1 Collaborative hypothesis	1	(11.11)	3	(33.33)	5	(55.56)
2.2 Multiple sources of data	0	(0.00)	5	(55.56)	4	(44.44)
2.3 Issues of diversity	7	(77.78)	2	(22.22)	-	
Intervention						
3.1 Linked to goal statement(s)	1	(11.11)	8	(88.89)	-	
3.2 Linked to assessment data	2	(22.22)	7	(77.78)	-	
3.3 Evidence-based	0	(0.00)	9	(100.00)	-	
3.4 Collaboratively developed	0	(0.00)	9	(100.00)	-	
3.5 Intervention acceptability	1	(11.11)	8	(88.89)	-	
3.6 Logistics of intervention	1	(11.11)	8	(88.89)	-	
3.7 Unintended outcomes	9	(100.00)	0	(0.00)	-	
3.8 Treatment integrity	6	(66.67)	3	(33.33)	-	
Evaluation						
4.1 Charting of progress	2	(22.22)	3	(33.33)	4	(44.44)
4.2 Comparison of progress	5	(55.56)	4	(44.44)	0	(0.00)
4.3 Decision making	0	(0.00)	8	(88.89)	1	(11.11)
4.4 Transfer/generalization	7	(77.78)	2	(22.22)	0	(0.00)
4.5 Collaborative changes	0	(0.00)	8	(88.89)	1	(11.11)
4.6 Follow-up	0	(0.00)	6	(66.67)	3	(33.33)