STUDENTS SERVING AS A CUE TO INCREASE TREATMENT INTEGRITY OF TEACHER DELIVERED INTERVENTIONS

By

MARY ANN HUBBARD

Bachelor of Science in Psychology
Southwestern Oklahoma State University
Weatherford, OK
2006

Master of Science in School Psychology
Southwestern Oklahoma State University
Weatherford, OK
2008

Master of Science in School Psychometrics
Oklahoma State University
Stillwater, OK
2009

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF PHILOSOPHY
May, 2013

STUDENTS SERVING AS A CUE TO INCREASE TREATMENT INTEGRITY OF TEACHER DELIVERED INTERVENTIONS

Dissertation Approved:

Dissertation Adviser, Dr. Gary Duhon

Committee Member, Dr. Terry Stinnett

Committee Member, Dr. Brian Poncy

Outside Committee Member, Dr. Robert Davis

ACKNOWLEDGMENTS

I would like to thank all of my family who have assisted me in making it to this point in my life and completing my doctoral education. Specifically, I would like to thank my parents, Dale Keith and Melanie Hubbard, for teaching me to be independent and determined; for teaching me to work hard, and giving me the ability to believe in myself. I would like to thank my grandparents, Dixon and Patty Hubbard for supporting me financially, always being there to encourage me, and being a great example. I would like to acknowledge my late great grandma, Pearl Hubbard, who was such a positive influence on my life. I would also like to thank my sister, Rachel Hubbard and brother, Seth Hubbard for all of their support through the many years of school and growing up. Finally, I would like to give a special thanks to my mom who proof-read so many papers, listened for hours on the phone, was available 24 hours a day when I needed something and put her own life on hold at times to help.

I would like to express my deepest gratitude to my advisor, Dr. Gary Duhon who provided excellent guidance and served as a mentor in research, practice and theory. To my graduate faculty I would like to say thank you for pushing me to always excel; while providing a strong academic environment, and experiences to grow and develop into a researcher and clinician. To my undergraduate faculty I would like to say thank you for encouraging me to achieve more and continue my education.

Without amazing friends and a strong support system I would not have been able to survive graduate school and complete my dissertation. Therefore, thank you to Levita Bui and Cathy Laterza for all of the great times living at the compound and thank you to Tiffany Weems for always understanding and being patient.

I would like to thank H.L and Sandra Shirey who supported me along the way, listening on the phone, proof-reading papers, and believing in me when I needed it the most. Thank you as always for all of your love and support.

To my dissertation team I would like to extend special thanks, without you I would have never been able to collect my dissertation data. Thank you for all of those long trips to Edmond and all of your hard work.

In conclusion, I would like to thank all of the individuals in my life who have been spiritual leaders. Without God in my life and the many blessings in my life, it would have been impossible to complete my doctoral education. Finally, thanks again to my family for teaching me to be a Christian and rely on my faith in God to endure tough situations.

Acknowledgements reflect the views of the author and are not endorsed by committee members or Oklahoma State University.

TABLE OF CONTENTS

LIST OF TABLES

Table Page

Table 1

Student and Teacher Demographics

Student	Age	Grade	Teacher	Years of Experience
Isaiah	8	1st	Ms. Robertson	16 years
Hanna	9	3rd	Ms. Hines	6 years
Mike	8	3rd	Ms. Hines	6 years
Jamie	11	5th	Ms. Stone	22 years
Hadley	11	5th	Ms. Peyton	1 year
Jessica	11	5th	Ms. Peyton	1 year

LIST OF FIGURES

Figure Page

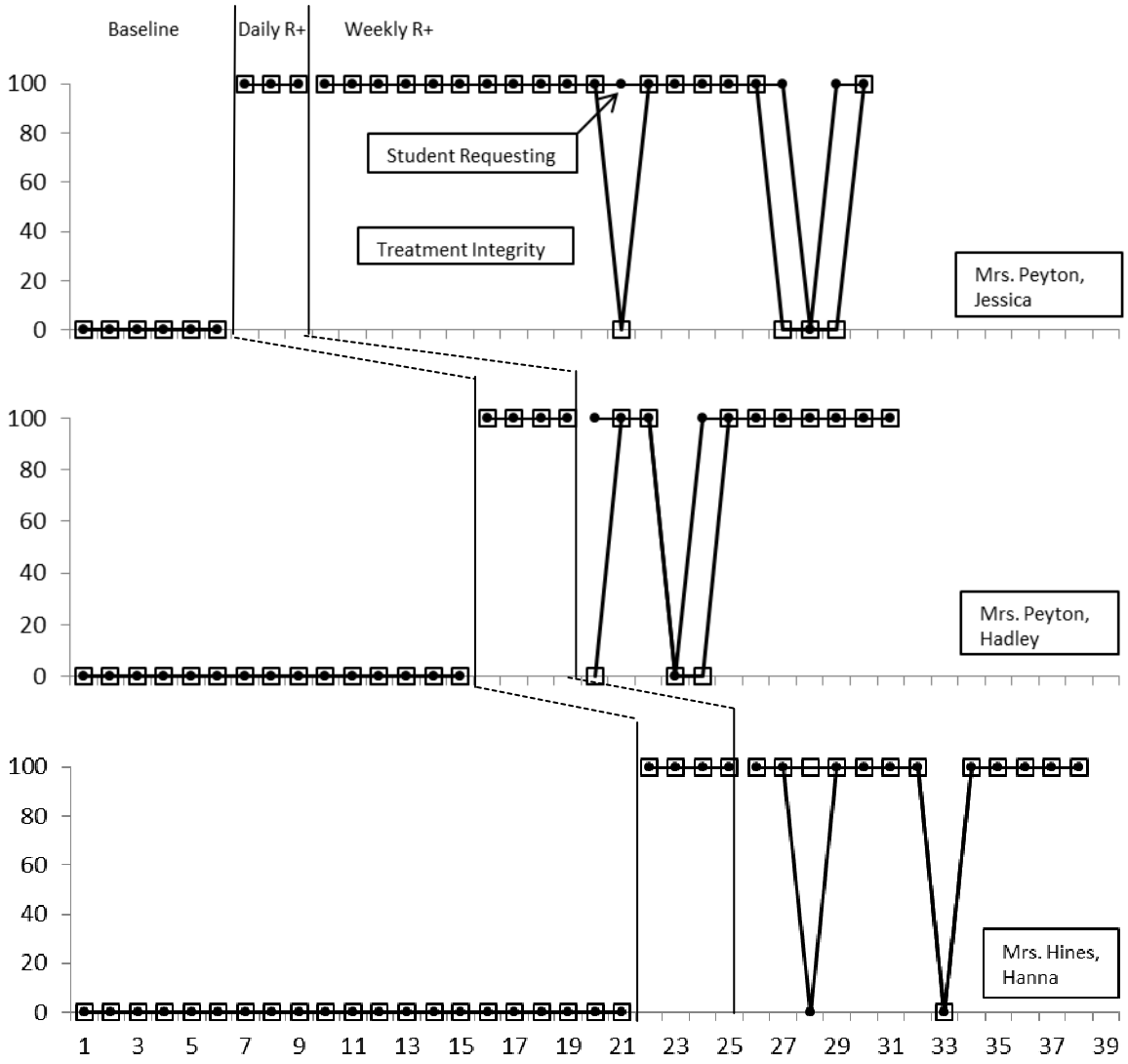

Figure 1. Treatment integrity and student recruitment data for students recruiting above 80% of possible sessions

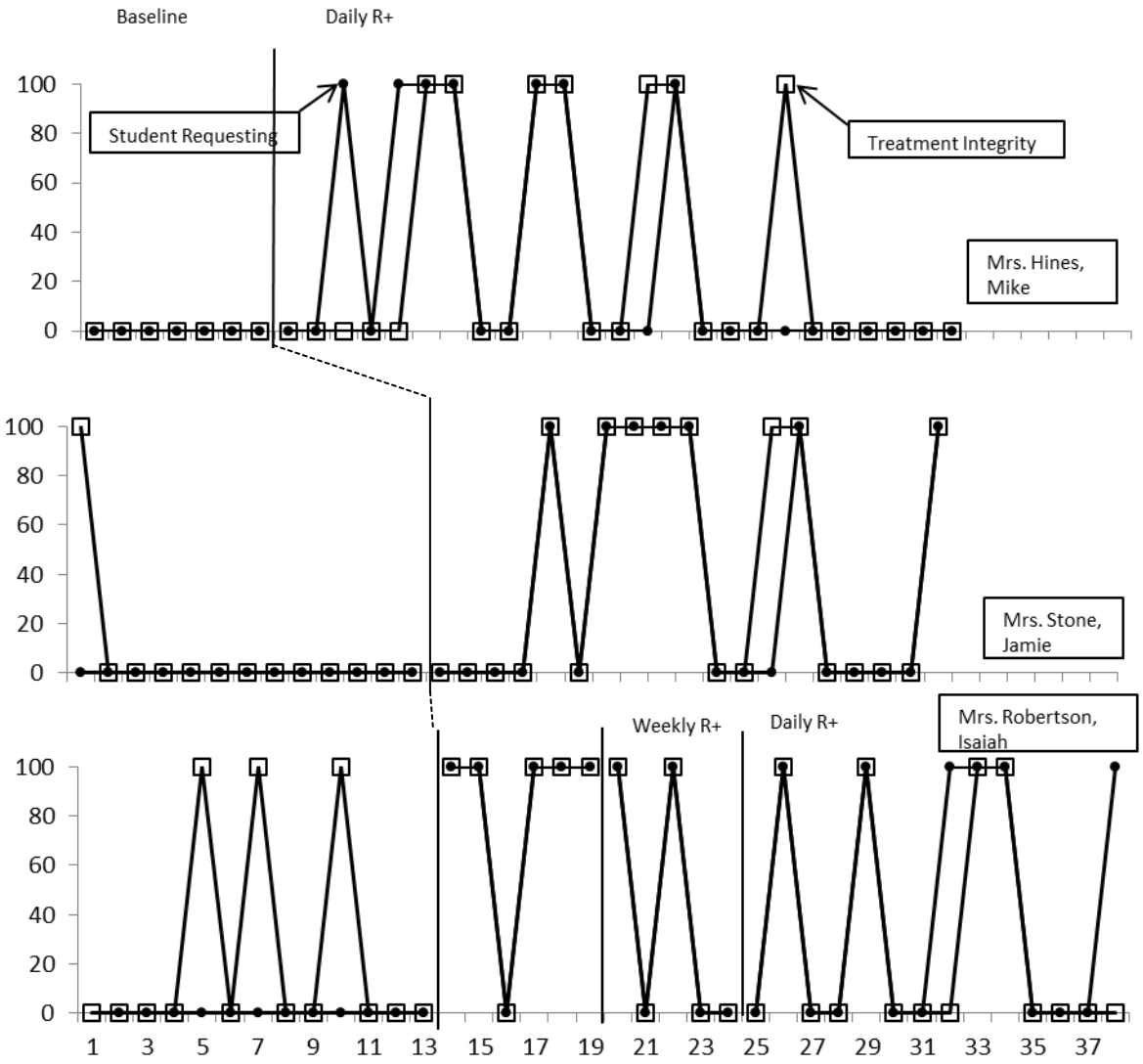

Figure 2. Treatment integrity and student recruitment data for students recruiting below 80% of possible sessions

CHAPTER I

INTRODUCTION

An intervention is a planned modification of the environment for the purpose of changing behavior in a pre-specified way. It specifies who will do what, when, and in what manner (Tilly III, 2002). The intervention is periodically evaluated to determine if it is effective and results in a change in the desired behavior. However, when evaluating interventions it is important to take into account extraneous variables that can impact the outcome of the intervention and ensure that the necessary components of the intervention were implemented as designed.

In research extraneous variables are controlled in order to demonstrate that changes in the dependent variable, the identified problem, are related to manipulated changes in the independent variable, the planned intervention. Extraneous variables can serve as a threat to both internal and external validity. External validity refers to factors that would not allow the intervention to be generalized to others such as if an intervention is conducted with a population different than the identified population. Internal validity is threatened when factors other than the intervention influence the outcome. One extraneous variable that is a threat to internal validity is poor treatment integrity. Treatment integrity is concerned with implementing treatments with accuracy and consistency (Gresham, MacMillan, Beebe-Frankenburger, & Bocian, 2000).

When interventions are modified in unknown ways it makes it difficult to assess the utility of the originally designed intervention (Lane, Bocian, MacMillan, & Gresham, 2004).

As such an intervention administered inconsistently or not administering all components of an intervention threatens the outcome of the intervention and is a direct treat to internal validity.

Internal validity is especially important within the Response to Intervention (RTI) framework. RTI is a multi-tiered prevention system integrating increasingly intensive instruction at each tier. Student Assistance Teams use assessment to identify students who are inadequately responsive to initial interventions and require more intensive intervention in the next tier (Fuchs, D. & Fuchs, L. 2006). Initially a subgroup of at-risk students is identified and their responsiveness to general education is monitored. At-risk children who are unresponsive to general education and interventions at the first tier are given more intensive interventions at the second tier. The nature of the academic intervention changes at each tier becoming increasingly more intense by (a) using more teacher-centered, systematic, and explicit instruction; (b) conducting it more frequently; (c) adding to it's duration; (d) creating smaller more homogenous subgroups; (e) relying on instructors with greater expertise (Fuchs, D. & Fuchs, L., 2006). When intensive intervention at each level of RTI does not result in sufficient progress, entitlement for special education services may be examined (Heartland Area Education Agency, 2002, p. 20).

With the emergence of RTI as an alternative to traditional methods for identification of learning disabilities (Fuchs, D. & Fuchs, L., 2006) it is imperative that interventions are implemented with high levels of integrity. Without these high levels of treatment integrity a failure to respond cannot be solely attributed to the intervention but rather low integrity allows for the failure of the intervention to be potentially attributed to extemporaneous variables. Poor treatment integrity due to extemporaneous variables such as a failure to administer all components of the treatment, failure to administer the treatment with consistency, or failure to administer the treatment as often as prescribed are all are examples of threats to the internal validity in the intervention. Interventions that are not implemented with integrity effect the interpretation of the interventions outcomes (Mortenson & Witt, 1998). Noell, Gresham, and Gansle, (2002) found that interventions that are implemented with higher

levels of treatment integrity are more likely to be effective; stating as treatment integrity levels increase, student outcomes also increase. High levels of internal validity increase the ability of the school based decision making team to make decisions based on a failure to respond to an intervention rather than a lack of response due to poor levels of treatment integrity.

Many interventions developed in the RTI process are derived from consultation. Problem-solving consultation is an indirect service delivery approach, it is a five stage approach initiating a consulting relationship, problem identification, problem analysis, intervention implementation and evaluation; to produce change in the child's behavior and empower the consultee to gain skills to enable future independent problem solving (Kratochwill, Elliott, & Callan-Stoiber, 2002, p. 584).Within the consultation framework the consultant and consultee enter into a relationship with the shared goal to develop an intervention to be carried out by the consultee addressing an agreed upon problem. During the plan implementation phase, three major tasks must be accomplished including: skill development of the consultee, monitoring the implementation process, and plan revisions (Kratochwill, et al., 2002, p. 592). However, the effectiveness of consultation depends in part on what is done during the plan implementation; even the best of plans will not produce the desired results if they are not implemented with integrity (Bergan & Kratochwill, 1990, as cited in Witt, Gresham, & Noell, 1996).

It is the consultant's responsibility to measure treatment integrity within the consultation framework and ensure that treatments are being carried out with sufficient levels of integrity. The consultant must demonstrate that changes in behavior are related to observed, systematic, and measurable changes in the environment (i.e., the intervention procedures) (Witt et al., 1996). When behavior change occurs it is assumed that the changes were due to the intervention, however it may be the case that the change in behavior was due to low levels of treatment integrity such as unknown changes in the intervention. Similarly, if there is a lack of behavior change it could be assumed that the lack of response to the intervention could have been due to the effectiveness or intensity of the

intervention; however a lack of change could also be the result of a lack of internal validity in poor levels of treatment integrity, due to not administering the intervention regularly or not administering all components of the intervention (Witt, et al., 1996).

Treatment integrity can be measured by either direct or indirect observation of the intervention (Resnick et al., 2005). Observation is the primary, most direct and effective method of measuring treatment integrity. Indirect methods include, consultee self-reporting, permanent products, behavioral interviews, feedback from consultants, and manualized treatments (Lane et al., 2004 & Wilkinson, 2006). Each of these methods of measuring treatment integrity can serve to increase levels of integrity. Moncher & Prinz (1991) add that including clear treatment definitions, detailed manuals, intensive training, careful supervision, and corrective remediation to prevent repeated violations can further promote treatment integrity.

Teachers report higher levels of integrity with less direct measures of integrity such as self report or permanent products; however when direct observation measures were used, actual treatment integrity levels were much less than reported (Wickstrom, Jones, LaFleur, & Witt, 1998). This supports Witt (1997) in his assertion of the fallacies of talk stating that there is a lack of correspondence between what individuals say and actually do, that talk cannot be assumed to be sufficient to change the behavior of other professionals and that verbal report is an acceptable method for obtaining accurate information. Therefore, research in the area of treatment fidelity needs to focus on increasing treatment adherence rather than assuming high levels of fidelity due to rigorous design plans (Resnick et al., 2005).

Several factors serve to decrease the likelihood that an intervention will be carried out with integrity including intervention complexity, implementation time required, materials required, number of personnel involved, perceived and actual effectiveness, and motivation of the consultee (Lane et al., 2004). Additionally, interventions that do not fit into the routines and structures of the

classroom, or are not provided adequate levels of support are less likely to be implemented (Glover & DiPerna, 2007).

In response to low levels of initial treatment integrity, a variety of methods have been examined to increase treatment integrity, methods that have consistently appeared in research include performance feedback and teacher training. Performance feedback is possibly the most extensively researched aspect of treatment integrity. Researchers have investigated varying levels of performance feedback ranging from daily feedback to every other week and their impact on levels of integrity and sustainability. Daily feedback has been shown to improve treatment integrity to acceptable levels (Noell, Witt, Gilbertson, Ranier, & Freeland, 1997; Witt, Noell, LaFluer, Mortenson, 1997; Noell, Witt, LaFluer, Mortenson, Ranier, & LeVelle, 2000; DiGennaro, Martens, & McIntyre 2005). However, daily feedback may not be feasible due to the high levels of direct contact on behalf of the consultant. Less direct methods in the form of weekly feedback have also been shown to be an effective means of increasing treatment integrity; but it still requires continued support on behalf of the consultant (Mortenson & Witt 1998; Noell et al., 2005). Every other week is the longest period of time demonstrated to be effective in increasing levels of treatment integrity (Codding, Feinberg, Dunn, & Pace, 2005).

Teacher training has also been shown to be an effective method for increasing treatment integrity; furthermore the more direct training teachers received, the higher the levels of treatment integrity. Direct training including performance feedback, rehearsal, and modeling were associated with the highest levels of integrity (Sterling-Turner, Watson, Wildmon, Watkins, & Little, 2001; Abrami, Poulsen & Chambers 2004; Kealey, Peterson, Gaul, & Dinh, 2000; Bradshaw, Reinke, Brown, Bevans, & Leaf, 2008; Han & Weiss 2005).

Other methods have been demonstrated to increase treatment integrity; these methods have not been shown to be as effective and are often used to supplement performance feedback or training

to further increase integrity. Follow-up meetings have demonstrated minimal success in increasing levels of treatment integrity; while they are better than nothing they are not as effective as performance feedback or training (Noell et al., 2000; Noell et al., 2005). Negative reinforcement when combined with written performance feedback can further increase levels of treatment integrity and may be a viable time efficient technique for increasing treatment integrity (DiGennaro et al., 2005). Furthermore, permanent products when combined with performance feedback can serve to markedly increase the integrity of the treatment (Witt et al., 1997). In other fields, such as the medical field, several studies have investigated the effects of social support on increasing treatment integrity; these studies tend to demonstrate a positive relationship between social support and patient compliance (Levy, 1983).

While the concept of using social support and natural cues has been researched in the medical field it has not been extensively researched to increase integrity in the educational setting. There has been considerable research conducted teaching students with developmental delays to recruit positive teacher attention. These studies have investigated the ability to teach students with low rates of academic responding to increased instances of reinforcement in the regular education setting. The goal of these studies is to increase rates and quality of reinforcement for academic responding. By teaching students to recruit positive teacher attention they are able to activate dormant contingencies of reinforcement and take a more proactive role in their learning (Alber & Heward, 2001; Wallace, Cox, & Skinner, 2003; Alber, Heward, & Hippler, 1999). Additionally, these studies have taken the concept farther and demonstrated once students are given the skills to contact natural opportunities of reinforcement they are able to generalize those skills to novel settings (Connell, Carta, & Baer, 1993; Harchik, Harchik, Luce, & Sherman, 1990; Stokes, Fowler, & Baer, 1978). Not only have students been taught to identify and recruit natural communities of praise but the effects of recruiting praise and teacher attention have been shown to increase student work completion and accuracy (Craft, Alber, & Heward, 1998).

The influence of student behavior on teacher behavior through social interaction suggests that students may influence teaching behavior so that the student serves as a reinforcer for improvements in teaching (Hrydowy, Stokes, & Martin, 1984). Detrich (1999) states that teaching staff is more likely to interact with children who are most likely to reinforce the behavior of the teacher, while children who are least independent are less reinforcing for the teaching staff. Additionally, social success along with a supportive school environment interacts to become an academic enabler, directly and indirectly affecting academic success (Elliott, Malecki, & Demaray, 2001). Increasing positive social interaction between the student and teacher might serve to improve consultee motivation. Consultees who are unmotivated or even neutral about an intervention are unlikely to overcome natural impediments to treatment implementation (Kealey et al., 2000). Abrami et al., (2004) found that teacher motivation explained over 40% of the variance associated with the degree to which teachers implemented treatments into their classroom routine.

Although previous studies have demonstrated that students can be taught to recruit praise from teachers, they have not been applied to recruiting academic assistance and increasing treatment integrity. The purpose of this study was to investigate if students can recruit academic assistance in the form of intervention delivery. Additionally, this study investigated if the effects of teaching students to recruit their intervention would allow the consultant to fade support to natural and manageable levels. Therefore this study sought to expand the current research base by expanding upon treatment integrity research and student recruitment of teacher praise by addressing two main research questions: (a) Can students provide a cue for intervention delivery which results in increased treatment integrity? (b) Can student cueing be effectively maintained with weekly consultation? It was hypothesized that teaching students to serve as a cue by recruiting academic interventions would result in an increase in treatment integrity.

CHAPTER II

REVIEW OF LITERATURE

Response To Intervention

With the reauthorization of IDEA in 2004 schools are not required to take into account whether a child has a discrepancy between their intellectual and achievement abilities but rather can use a process that evaluates their response to a research-based intervention in determining if they have a learning disability (Merrell et al., 2006, p. 125). This process known as response to intervention (RTI) is a multi-tiered prevention system integrating increasingly intensive instruction at each tier. There are five core components of RTI service delivery: (a) multitier implementation, (b) student assessment and decision making, (c) evidence-based intervention provision, (d) maintenance of procedural integrity, and (e) development and sustainability of systems-level capacity (Glover & DiPerna, 2007). This study is primarily concerned with the maintenance of procedural integrity however, all five core components are essential to support and maintain integrity.

Multitier implementation. Multitier implementation is necessary to assess a student's failure to respond to increasingly intensive interventions. In order to be identified as learning disabled the school must demonstrate (a) severe educational need combined with (b) the lack of educational benefit from high-quality intervention (Shinn, 2007). Student Assistance Teams, composed of teachers, reading specialists, school psychologists, school administrators and other related service

personnel use assessment to identify students who are inadequately responsive to initial interventions and require more intensive intervention in the next tier (Fuchs, D. & Fuchs, L., 2006). Initially the student assistance teams identify a subgroup of at-risk students and their responsiveness to general education is monitored. At-risk children who are unresponsive to general education and interventions at the first tier are given more intensive interventions at the second tier. The nature of the academic intervention changes at each tier becoming increasingly more intense by (a) using more teacher-centered, systematic, and explicit instruction; (b) conducting it more frequently; (c) adding to it's duration; (d) creating smaller more homogenous subgroups; (e) relying on instructors with greater expertise (Fuchs, D. & Fuchs, L., 2006). When intensive intervention at each level of RTI does not result in sufficient progress entitlement for special education services may be examined (Heartland Area Education Agency, 2002, p 20).

Student assessment and decision making. Curriculum Based Measurement (CBM) is commonly used to identify and assess students. CBM is a set of standardized and validated tests typically 1-4 minutes long in reading, mathematics computation, mathematics applications, spelling, written expression, early literacy, and early numeracy (Shinn, 2007). CBM is able to (a) discriminate among categories of students, (b) assess risk status and predict future student behavior or performance, and (c) evaluate intervention effectiveness. This allows for student assistance teams to monitor student progress and discriminate between students with typical and atypical performance (Glover & DiPerna, 2007). Decision making is made utilizing student assistance teams, teams meet on a regular basis in order to monitor at risk students, analyze problems, assist the teacher, select, implement and monitor the effectiveness of an intervention (Fuchs, D. & Fuchs, L., 2006). The teachers maintain the primary responsibility for all aspects of instruction, monitoring of instruction at tiers 1, 2 and 3 while special educators assume primary responsibility at tier 4 (Mastropieri & Scruggs, 2005).

Evidence based intervention. To maximize the opportunity for students to benefit from services within the RTI framework, instruction and intervention should be supported by rigorous empirical evidence. Interventions are often developed and evaluated using data-driven problem solving. Within this model, the problem is identified using problem identification and validation, problem analysis investigates why the problem is occurring, intervention development and implementation determine what should be done about it, and evaluation and follow up determine if it worked (Merrell et al., 2006, p. 151).

In developing interventions there must be a match between the student's skills, curriculum and instruction (Barnes & Harlacher, 2008). The instructional hierarchy states that as a student is gaining a new skill he or she will first acquire the skill, become fluent in its use, learn to generalize it to novel contexts and finally adapt its use. The instructional hierarchy recommends that potential intervention targets proceed from accuracy to fluency to generalization to adaptation with each level of academic responding having different corresponding procedures that will lead most efficiently to mastery. Demonstration, modeling, prompting, drill, reinforcement, and generalization strategies are treatment components that make an intervention effective (Daly, Lentz, & Boyer, 1996).

Listed below are interventions that have been empirically supported and have been demonstrated to be effective in addressing common reading and math difficulties.

Evidence based reading interventions. The National Reading Panel established by Congressional request in 1997 completed a comprehensive, formal, evidence-based analysis of research literature central to teaching children to read. The panel studied the reading skills of alphabetics, fluency, comprehension, teacher education and reading instruction, and computer technology. As a result of their review they published their findings and determinations.

Interventions targeting alphabetics should focus on teaching children to manipulate phonemes in words and that teaching phonemic awareness to children significantly improved reading.

The panel defined fluency as readers who are able to read orally with speed, accuracy, and proper expression. They found that guided oral reading including guidance from teachers, peers, or parents had a significant positive effect on not only fluency, but also on word recognition and comprehension. Guided oral reading encourages students to read passages orally with systematic and explicit guidance and feedback from the teacher.

The panel stated that comprehension is critically important to the development of a child's reading skills and is best improved through vocabulary instruction and comprehension instruction. Vocabulary instruction should utilize a variety of methods both direct and indirect, with repetition and active engagement of the student are necessary. Comprehension instruction is most effective when a variety of techniques are utilized including comprehension monitoring, cooperative learning, use of graphic and semantic organizers, question answering, question generation, story structure and summarization (National Reading Panel, 2000).

The Savvy Teacher's Guide: Reading Interventions That Work, is a compilation of reading interventions designed for classroom instructors targeting students with diverse learning needs. The guide includes research based interventions cited as effective in the National Reading Panel report. Interventions include promoting error correction, promoting fluency, and building text comprehension (Wright, n.d.).

Repeated reading is an effective technique to increase reading fluency, however, first it must be determined if the student has the necessary prerequisite skills and the student's instructional level should be determined. Instruction should be provided at the acquisition stage of the learning hierarchy. Intervention sessions should be conducted between 3 to 5 times a week for

between 10 and 20 minutes per session. The intervention should implement essential components of oral reading, feedback on word errors, and performance feedback (Therrien & Kubina, 2006).

Evidence based math intervention. Basic operations in math are viewed as two topics, "basic facts" in addition, subtraction, multiplication, and division; and the representation of place value in computation. Accuracy and fluency are fundamental to proficiency in mathematics, different media such as worksheets, computer programs, and math activities where students are awarded points for accuracy and speed of response are useful techniques for increasing both fluency and accuracy. Students should also be challenged to record their improvement through graphs of accuracy or response time (Fleischner, & Manheimer, 2010).

Research indicates that Cover, Copy, Compare is a specific math intervention that is a simple, efficient, self-managed academic intervention useful for improving accuracy, fluency, and maintenance (Skinner, McLaughlin, & Logan, 1997). Cover, Copy, Compare and Taped Problems are effective interventions at increasing a student's math fact accuracy and fluency (Poncy, Skinner, Jaspers, 2007). Additionally, Cover, Copy, Compare with performance feedback was an effective technique for assisting students to reach and maintain mastery levels of performance (Codding, Eckert, Fanning, Shiyko, & Solomon, 2007). Finally, Cover, Copy, Compare when combined with goal setting produced significantly higher scores and greater growth, retention, and generalization than control or CCC without goal setting (Codding, Chan-Iannetta, Palmer & Lukito, 2009).

Maintenance of procedural integrity. With the emergence of RTI as an alternative to traditional methods for identification of learning disabilities (Fuchs, D. & Fuchs, L., 2006) it is imperative that interventions are implemented with high levels of integrity. Without these high levels of treatment integrity a failure to respond cannot be solely attributed to the intervention but rather low integrity allows for the failure of the intervention to be potentially attributed to

extemporaneous variables. Poor treatment integrity due to extemporaneous variables such as a failure to administer all components of the treatment, failure to administer the treatment with consistency, or failure to administer the treatment as often as prescribed are all are examples of threats to the internal validity in the intervention. Interventions that are not implemented with integrity effect the interpretation of the interventions outcomes (Mortenson & Witt, 1998). Noell et al. (2002) found that interventions that are implemented with higher levels of treatment integrity are more likely to be effective; stating as treatment integrity levels increase, student outcomes also increase. High levels of internal validity increase the ability of the school based decision making team to make decisions based on a failure to respond to an intervention rather than a lack of response due to poor levels of treatment integrity. Therefore the intervention is periodically evaluated to determine if it is effective and results in a change in the desired behavior.

Development and sustainability of systems-level capacity. Training and technical assistance in the form of pre-service are necessary for the implementation of the RTI process; teachers who receive training are more likely to implement the process, implement the process with fidelity, report more favorable student outcomes and are necessary for teachers to fully implement the process and continue to use the process (Kratochwill, Volpiansky, Clements, & Ball, 2007). Additionally, school stakeholders must continue to examine evidence supporting the effectiveness of RTI practices, underscoring the importance of attending to (a) fidelity in the implementation of RTI components, (b) reliability and validity of assessment and data-based decision-making criteria, and (c) the validity of protocols for administering and sequencing intervention (Glover & DiPerna, 2007).

Consultation

Consultation creates a way to vary service intensity in direct proportion to individual student needs. Level I problem solving involves parent-teacher collaboration for addressing the problem, at Level II other teachers and resources contribute expertise along with the primary teacher to solve the problem, at Level III related service personnel such as school psychologists and the Student Assistance Team guide the problem-solving process. Level IV continues problem solving at more intensive levels including special education entitlement (Tilly III, 2002, p. 24). Many interventions developed in the RTI process are derived from problem solving consultation through the Student Assistance Team at Level III. Problem-solving consultation is a five stage, indirect service delivery approach; initiating a consulting relationship, problem identification, problem analysis, intervention implementation and evaluation; to produce change in the child's behavior and empower the consultee to gain skills to enable future independent problem solving (Kratochwill et al., 2002, p. 584).

Initiating a consulting relationship. The consultant and consultee enter into a relationship with the shared goal to develop an intervention to be carried out by the consultee addressing an agreed upon problem (Kratochwill et al., 2002, p. 587). The interpersonal relationship between the consultant and consultee plays a major role in the use and effectiveness of consultation. Resistance is anything that impedes problem solving or plan implementation and ultimately problem resolution including system, consultee, consultant, family and client factors that interfere with the achievement of goals established during consultative interactions. (Wickstrom & Witt, 1993, p. 160, as cited in Kratochwill et al., 2002, p. 587). Therefore, effective consultants (a) overtly communicate awareness that the problem and solution are central to teachers' daily functioning and (b) act cooperatively to design interventions so that potential sources of resistance might be overcome (Kratochwill et al., 2002, p. 587).

Problem identification. The problem is the difference between expected levels of performance and actual student performance (Heartland Area Education Agency, 2002, p. 8). By defining the problem as the difference between expected levels of performance and actual performance it causes problem solvers to become objective about the nature of the problem. This promotes direct clear analysis of the problem, intervention development using clearly defined procedures, and promotes the use of tools that provide objective measurement (Heartland Area Education Agency, 2002, p. 8).

During problem identification an interview with the consultee is conducted. During the interview (a) the purpose of problem definition should be explained, (b) target behavior goals should be identified and selected, (c) frequency, duration and intensity of target behaviors should be identified, (d) conditions under which the target behavior occurs should be identified, (e) expected level of performance should be identified, (f) the student's strengths and social competence should be identified, (g) assessment procedures should be determined, (h) consultee effectiveness and strengths should be identified, and (i) a summary should be provided (Kratochwill et al, 2002, p. 590).

Assessment of the problem also takes place during problem identification, during assessment one of the first steps is to determine if the student can perform the skills or test or if the student can perform the skill but is unmotivated or chooses not to (Skinner, 1998). This is often referred to as a skill vs. performance deficit or can't do won't do. Baseline data is also collected to determine the student's current level of functioning on specific skill sets.

Assessment and interviews should also rule out issues with the student's vision, hearing, health and attendance as well as confirm the discrepant academic skills of behavior (Heartland Area Education Agency, 2002, p. 15).

Problem analysis. After baseline data are collected the consultant and consultee meet to determine the target skills that are necessary to achieve the goals of consultation (Kratochwill et al., 2002, p 592). The purpose of problem analysis is to identify interventions that are (a) directly and empirically linked to problem occurrence and (b) have a high likelihood of successful outcome. Effective problem analysis provides summary statements that link (a) observed performance to (b) hypothesized causes of the performance problems which in turn lead to (c) treatment recommendations with a high likelihood of success (Tilly III, 2002, p 29).

Following successful problem analysis a plan will be developed that will indicate the courses of action to be implemented and the plan tactics used to guide implementation (Kratochwilll et al., 2002, p 592). The action plan should clearly identify the procedures and instructional strategies to be used, should use methods of data collection congruent with baseline data and objective measurement of progress toward the goals, provide a decision-making plan utilizing data to guide the team in determining the need for instructional changes, and include a plan to measure integrity (Heartland Area Education Agency, 2002, p. 19).

Intervention implementation. The plan should be implemented as designed with modifications only made based on data analysis and collaboration with team members (Heartland Area Education Agency, 2002, p. 19). During plan implementation three tasks must be accomplished including, skill development of the consultee, implementation, progress monitoring, and plan revisions. Monitoring implementation includes monitoring the child's ongoing progress but it is essential for the integrity of the intervention to be monitored to ensure that the agreed upon plan is being carried out as designed (Kratochwill et al., 2002, p. 592).

Evaluation. Formal plan evaluation is completed for the purpose of determining whether the goals of consultation have been met. The first step in evaluation is to determine whether the actual goals have been obtained (Kratochwill et al., 2002, p. 593). When evaluating the goals

there are multiple possible outcomes, (a) the discrepancy between the expected and observed levels of performance no longer exists, (b) the student is progressing towards the established goal but continues to need the intervention, (c) the student is not making progress at the expected rate and the plan needs to be revised or modified, or (d) the intervention is successful but the resources needed to maintain the intervention are outside of what can be reasonably continued in general education and special education consideration may be warranted (Heartland Area Education Agency, 2002, p. 20).

The second step in evaluation is to determine the effectiveness of the plan by demonstrating that the intervention itself was responsible in achieving the goals not extraneous variables. This can be done through single case evaluation strategies (Kratochwill et al., 2002, p 593). The consultant must demonstrate that changes in behavior are related to observed, systematic, and measurable changes in the environment (i.e., the intervention procedures) (Witt et al., 1996). When behavior change occurs it is assumed that the changes were due to the intervention, however it may be the case that the change in behavior was due to low levels of treatment integrity such as unknown changes in the intervention. Similarly, if there is a lack of behavior change it could be assumed that the lack of response to the intervention could have been due to the effectiveness or intensity of the intervention; however a lack of change could also be the result of a lack of internal validity in poor levels of treatment integrity, due to not administering the intervention regularly or not administering all components of the intervention (Witt et al. 1996).

Finally, implementation planning occurs to prevent the problem from occurring again. This can be prevented through leaving the current plan in effect or implementing a modified plan that will facilitate maintenance of the behavior over time (Kratochwill et al., 2002, p. 594).

Treatment Integrity

The effectiveness of consultation depends in part on what is done during the plan implementation; even the best of plans will not produce the desired results if they are not implemented with integrity (Bergan & Kratochwill, 1990, as cited in Witt et al., 1996). While it is the consultee's responsibility to ensure implementation of the treatment, it is the consultant's responsibility to measure treatment integrity within the consultation framework and ensure that treatments are being carried out with sufficient levels of integrity.

Treatment integrity is defined as implementing treatments with accuracy and consistency (Gresham et al., 2000). When evaluating interventions it is important to take into account extraneous variables that can impact the outcome of the intervention and ensure that the necessary components of the intervention were implemented as designed.

In research extraneous variables are controlled in order to demonstrate that changes in the dependent variable, the identified problem, are related to manipulated changes in the independent variable, the planned intervention. Extraneous variables can serve as a threat to both internal and external validity. External validity refers to factors that would not allow the intervention to be generalized to others such as if an intervention is conducted with a population different than the identified population. Internal validity is threatened when factors other than the intervention influence the outcome. One extraneous variable that is a threat to internal validity is poor treatment integrity. Treatment integrity is concerned with implementing treatments with accuracy and consistency (Gresham et al., 2000). When interventions are modified in unknown ways it makes it difficult to assess the utility of the originally designed intervention. (Lane et al., 2004). As such an intervention administered inconsistently or not administering all components of an intervention threatens the outcome of the intervention and is a direct threat to internal validity.

Measurement of treatment integrity. Successful tests of treatment integrity include both assessment of adherence to the treatment protocol and a determination that the interventions are being performed competently (Waltz, Addis, Koerner, & Jacobson, 1993). Systematic observation is the most direct means of assessing treatment integrity however, it is vulnerable to reactivity effects and tends to be labor intensive and is not always feasible in 'real world' settings (Wilkinson, 2006). Lane et al., (2004) outlines five methods for assessing treatment integrity (a) direct observation, (b) feedback from consultants, (c) self-monitoring self-reporting, and behavioral interview techniques, (d) permanent products, and (e) manualized treatments and intervention scripts (Elliott & Busse, 1993 as cited in Lane et al., 2004). Much as contextual variables change, the method used for assessment of fidelity will change according to each individual case and the specifics of the treatment; however, as outlined by Lane et al. (2004) there are multiple ways in which a consultant or researcher can assess treatment integrity.

It cannot be merely assumed from teacher report that an intervention has been carried out. Witt (1997) states that it is a common fallacy to assume that simply asking individuals involved in delivering treatment, that they will provide accurate information about the child's performance, the progress of an intervention, or the outcomes of an intervention. It is the responsibility of the consultant to gather evidence other than verbal report hat the intervention is being implemented as prescribed and that the intervention itself is progressing as reported and outcomes are being achieved.

Some methods might be preferred over others such as performance feedback where opportunity is given to correct incorrect implementation, as well as assess current implementation integrity levels. Other methods such as direct observation and permanent products provide evidence other than verbal report to add confidence to assessment data. Regardless of the type of method used to assess treatment integrity it is imperative that the assessment be used to guide the consultant and consultee to increase fidelity levels during future implementation.

Treatment integrity can be measured by either direct or indirect observation of the intervention (Resnick et al., 2005). Observation is the primary, most direct and effective method of measuring treatment integrity. Indirect methods include, consultee self-reporting, permanent products, behavioral interviews, feedback from consultants, and manualized treatments (Lane et al., 2004 & Wilkinson, 2006). Each of these methods of measuring treatment integrity can serve to increase levels of integrity. Moncher & Prinz (1991) add that including clear treatment definitions, detailed manuals, intensive training, careful supervision, and corrective remediation to prevent repeated violations can further promote treatment integrity.

Teachers report higher levels of integrity with less direct measures of integrity such as self report or permanent products; however when direct observation measures were used, actual treatment integrity levels were much less than reported (Wickstrom et al., 1998). This supports Witt (1997) in his assertion of the fallacies of talk stating that there is a lack of correspondence between what individuals say and actually do, that talk cannot be assumed to be sufficient to change the behavior of other professionals and that verbal report is an acceptable method for obtaining accurate information. Therefore, research in the area of treatment fidelity needs to focus on increasing treatment adherence rather than assuming high levels of fidelity due to rigorous design plans (Resnick et al., 2005).

Levels of treatment integrity necessary for desired behavior change. When assessing treatment integrity researchers have looked to see what level of treatment integrity is necessary for the desired treatment effects. They have asked if treatments have to be implemented with 100% integrity or is 80% sufficient. Noell et al., (2002) examined the impact of varying degrees of implementation of instructional prompts for a different population and target response. The treatment included prompts, feedback, and praise delivered via computer aided instruction. Students received three conditions of prompt implementation 100% (PI-100) where feedback and prompts were proved for all problems and praise was provided on a VR-3 schedule; prompt

implementation 67% (PI-67) where prompts were delivered for two-thirds of problems, accuracy feedback was provided for all problems, and praise was provided on VR-3 schedule; or prompt implementation 33% (PI-33) where one prompt was present with each block of three problems, accuracy feedback was provided for all problems, and praise was provided on VR-3 schedule. Data suggest that reduced levels of treatment integrity can result in poorer outcomes. Data support research that indicate that as treatment integrity decreases students' responses to intervention becomes less predictable, and treatments with higher integrity are more likely to be effective; however, the present study does not identify consistent breaking points in treatment effectiveness.

Sterling-Turner, Watson, and Moore (2002), further expanded upon Sterling-Turner et al. (2001) looking at the effect of training and treatment integrity on behavior change in the students. They found that higher levels of treatment integrity lead to desired behavior change; however, as with other studies 100% treatment integrity has not necessarily been shown to promote the desired behavior change (Sterling-Turner, et al., 2002; Jones, Wickstrom, & Friman, 1997). It has been proposed that this could be due to independent client variables rather than treatment integrity; however, a full explanation is not available in the current literature.

The ultimate goal of increased treatment integrity is to increase student outcomes. As previously mentioned with RTI, a lack of response to an intervention can be used as part of the assessment for a specific learning disability or the need for special education services. This study shows the importance of increased implementation on improving treatment effectiveness and student outcomes, in order to provide accurate data based decision making on evaluating a student's eligibility for the need of special education services.

Several factors serve to decrease the likelihood that an intervention will be carried out with integrity including intervention complexity, implementation time required, materials

required, number of personnel involved, perceived and actual effectiveness, and motivation of the consultee (Lane et al., 2004). Additionally, interventions that do not fit into the routines and structures of the classroom, or are not provided adequate levels of support are less likely to be implemented (Glover & DiPerna 2007).

Methods to increase treatment integrity. In response to low levels of initial treatment integrity, a variety of methods have been examined to increase treatment integrity, methods that have consistently appeared in research include teacher training and performance feedback.

Teacher training. Teacher training has been shown to be an effective method for increasing treatment integrity, furthermore the more direct training teachers received, the higher the levels of treatment integrity. Direct training including performance feedback, rehearsal, and modeling were associated with the highest levels of integrity (Sterling-Turner et al., 2001; Abrami et al., 2004; Kealey et al., 2000; Bradshaw et al., 2008; Han & Weiss 2005).

Keeley et al. (2000) conceptualized training as a behavior change process and considered the science of behavior change in identifying teacher training components. Researchers proposed that training should be designed to include four objectives for implementing procedures. First, was motivation through building rapport and introducing teachers to the curriculum and partners; thus allowing teachers to become familiar with the material, ask questions and gain the skills necessary for implementation. Second, communicate responsibilities; teachers were given the actions that were expected of them as curriculum providers. Third, all implementation materials were furnished for the teachers. Fourth and finally, skills and confidence required were built by walking through each activity allowing teachers to see activities in action and practice any unfamiliar or new skills. Eighty – five percent of teachers who implemented the curriculum were observed teaching one lesson and during those observations 89% of interventions were implemented as intended.

This study and the resulting recommendations include training that provides the teachers with the necessary materials, clear expectations, practice, and feedback on implementation of activities. This allowed for the practice of skills so that incorrect implementation could be corrected and the likelihood of correct implementation was increased. As a result curriculum was implemented with 89% accuracy for those observed. This does not include a control group for individuals just given curriculum however, the training result produced acceptable levels of treatment integrity.

Bradshaw et al. (2008) examined the progression of school-wide PBIS implementation; they anticipated that training in PBIS would be associated with an increase in implementation scores. Using a School-Wide Evaluation Tool (SET), they found that trained schools outperformed non-trained schools in program fidelity on all but one subscale SET score. Specifically, 66.67% of the trained schools achieved 80% implementation by the end of year one and maintained high levels through year two. This data found that training and support were sufficient to promote high levels of implementation fidelity in a relatively short period of time. However, it still may take three to five years to see changes in student behavior.

While Keeley et al. (2000) did not have a control Bradshaw et al. (2008) implemented a control in their study indicating that those who were trained outperformed non-trained schools. Essentially the data indicates that while the curriculum itself may produce some change, the change produced by training is sufficient to increase implementation to high levels of fidelity in a short period of time. While some increases were made by schools implementing PBIS without training; the gains made by non- trained schools in implementing PBIS with fidelity were not comparable to those of the trained schools and did not meet acceptable levels of integrity (Bradshaw et al., 2008).

Sterling-Turner et al. (2001) investigated the effects of two different types of training methods on treatment integrity. Participants participated in one of three conditions didactic training (DT), modeling training (MT), or rehearsal/feedback training (RFT). During DT, treatment procedures were verbally explained, examples were provided, and an opportunity was given to ask questions. During MT participants watched a videotape for a 5-minute treatment session and following the videotape verbal explanations were given to the participant however, an opportunity for questions was not available. RFT condition received 5 minutes of training with the experimenter and a confederate, verbal prompts were delivered, mistakes were corrected and praise was delivered for correct implementation. Participants who received the most direct training, RFT, had a higher mean percentage of treatment integrity than those who received less direct training, MT, who in turn scored higher than participants who received indirect training, DT. Thus, participants who received opportunities for practice and feedback had a higher degree of treatment integrity. Indicating, if a consultee is poorly trained and therefore has a poor understanding of treatment procedures they are more likely to implement the treatment with low integrity.

As a result of these studies it can be concluded that training should include opportunities for practice and feedback. Consultees who have a better understanding of the treatment to be implemented and have had a chance for rehearsal and feedback from the consultant are more likely to implement a treatment with fidelity; which in turn will increase the probability of the desired behavior change.

This assertion for training supports recommendations stated by Smith, Daunic, and Taylor (2007) stating that consultants should address training when implementing treatments. However, Smith went one step further stating that implementation training should be standardized and provider competency should be evaluated. These studies do not address the standardized aspect of training; however, the recommendations for the evaluation of competency training can

be assessed through rehearsal and feedback provided during training procedures. More research is needed to investigate the effects of standardization in training procedures to increase the skills of the consultee to increase treatment fidelity. However, it is only logical that the training should be implemented as a standardized treatment protocol and should not be exempt from the guidelines given for treatment implementation regarding implementation fidelity.

Performance Feedback. Performance feedback is possibly the most extensively researched aspect of treatment integrity. With performance feedback the consultant observes the professional implement the intervention and then provides corrective feedback. Researchers have investigated varying levels of performance feedback ranging from daily feedback to every other week and their impact on levels of integrity and sustainability. Daily feedback has been shown to improve treatment integrity to acceptable levels (Noell et al., 1997; Witt et al., 1997; Noell et al., 2000; DiGennaro et al., 2005). However, daily feedback may not be feasible due to the high levels of direct contact on behalf of the consultant. Less direct methods in the form of weekly feedback have also been shown to be an effective means of increasing treatment integrity; but it still requires continued support on behalf of the consultant (Mortenson & Witt 1998; Noell et al., 2005). Every other week is the longest period of time demonstrated to be effective in increasing levels of treatment integrity (Codding et al., 2005).

Studies suggest that performance feedback by a consultant regarding teachers' implementation of behavioral plans can increase teachers' use of a treatment; improve fidelity and produce greater improvement in child outcomes, and feedback consistently produced the strongest training effect (Hann & Weiss, 2005).

DiGennaro et al., (2005) designed a study in which teachers were given information about the accuracy of plan implementation (performance feedback) which was used to arrange a negative reinforcement contingency. They found that performance feedback is an effective means

of enhancing consultee treatment integrity. During baseline measurements following training, implementation was between 0% and 25%; performance feedback and negative reinforcement in the means of repeated practice was added; with the addition of these steps implementation accuracy average increased to between 87% and 97%, for the remaining participants; for the final stage consultants began fading performance feedback, implementation remained between 91% and 100% for the remaining participants; suggesting that daily meetings are not necessary to maintain treatment fidelity. They state that written feedback provides the consultee with information regarding their performance that is understandable and efficient. Additionally, repeated practice of missed steps helped increase treatment fidelity to 100%.

This study demonstrates once again that training alone is not sufficient to increase treatment fidelity. Performance feedback is a necessary component of any recommended intervention by the consultant. This study also shows that not just written feedback is sufficient but also the addition of corrective feedback in the form of repeated practice for missed steps worked to increase treatment fidelity.

Jones et al. (1997) evaluated the effects of performance feedback in treatment integrity in school-based behavioral consultation, phase one began with a Problem Analysis Interview (PAI) where teachers were given a protocol to increase positive consequences for on task behavior. If low levels of integrity were observed following phase one, a Problem Evaluation Interview (PEI) was conducted and the consultant provided daily observational feedback. During the baseline phase the three teachers rarely used contingent praise or point awards for on-task behavior, exhibiting low levels of integrity failing to exceed 37% for all teachers. During the performance feedback the mean use increased to 60% to 83% suggesting that performance feedback may increase integrity when low levels are observed following traditional consultation.

In consultation, recommendations are given regarding a treatment and implementation of the treatment; the teacher is often expected to implement the treatment with fidelity without training or feedback regarding their performance. This study clearly demonstrates that simply making recommendations for treatment does not produce adequate levels of treatment fidelity; it was not until the addition of performance feedback that levels increased to 60% to 83%. These levels are still relatively low, it might be speculated that the results shown in previous studies that have combined both training and feedback that one or the other is not sufficient but rather a combination of both training and feedback that produces the highest levels of fidelity.

Noell et al. (2005) investigated the effects of weekly follow-up, social influence, and performance feedback on treatment integrity. This study continued to support the evidence that PFB increased the levels of implementation integrity; additionally performance feedback had a larger impact on treatment fidelity than social influence or weekly follow-up. Most importantly they found that implementation began to fade with weekly follow-up demonstrating that contact alone is not sufficient to maintain implementation.

These studies challenge the assumption that traditional consultation will result in adequate levels of treatment integrity, it is apparent that something other than recommendations and protocols is necessary for adequate levels of treatment integrity. In studies measuring integrity following initial consultation meetings, treatment integrity levels were consistently unacceptably low; however, the addition of performance feedback worked to increase treatment levels. It can be noted that performance feedback should be a necessary component of the behavioral consultation process as well as training programs for teachers; and that consultation or in-service training alone is not sufficient for adequate levels of treatment integrity or behavior change.

Additional Factors. Other methods have been demonstrated to increase treatment integrity; these methods have not been shown to be as effective and are often used to supplement performance feedback or training to further increase integrity. Follow-up meetings have demonstrated minimal success in increasing levels of treatment integrity; while they are better than nothing, they are not as effective as performance feedback or training (Noell et al., 2000; Noell et al., 2005).

Negative reinforcement when combined with written performance feedback can further increase levels of treatment integrity and may be a viable, time efficient technique for increasing treatment integrity (DiGennaro et al., 2005). Furthermore, permanent products when combined with performance feedback can serve to markedly increase the integrity of the treatment (Witt et al., 1997).

Detrich (1999) stated that there are three broad categories of contextual variables that effect treatment integrity: characteristics of the child, resources required by the intervention, and the similarity of the recommended intervention with the current classroom practices. He reviewed each variable and made recommendations for improving treatment integrity within each variable.

When addressing characteristics of the child it has been stated that if a child is engaging in a behavior judged as severe or if the level of skill of the child requires less intervention; then teachers are more likely to implement an intervention. Therefore, it has been recommended that behaviors should be rated and the most unacceptable behaviors are most likely to receive intervention and staff is more likely to respond (Detrich, 1999).

When reviewing resources required by the intervention, consultants should assess the strain the intervention would put on the classroom, the greater the strain on the classroom resources the less likely the intervention will be implemented. The extent that staff will have to

perform roles outside of their typical duties; and the extent to which teachers are required to acquire resources that may be difficult to obtain or because the resources are not considered important decrease the probability that the intervention will be implemented with integrity. Brown, Pryzwansky, & Schulte (2006) state that complex interventions often become aversive because of the time and energy required to maintain them and may be abandoned as a result; therefore it is the task of the consultant to find and select interventions that are least restrictive yet still effective (p. 68).

Additionally, interventions that are significantly different from current classroom practices are less likely to be implemented. When reviewing similarity between the intervention and classroom practices it is recommended that the consultant take into account the frequency of the interaction with the student, the timing of interactions, and the interaction between teaching practices and student characteristics.

While these recommendations are logical conclusions and were reached from logical analysis rather than empirical research they fall in line with the previous recommendations of Smith et al. (2007) that were derived from the BCC research; suggesting that research studies and design, as well as treatment recommendations should fit as seamlessly as possible into the contextual situation. However, further research to support these recommendations and considerations would be necessary.

Hann and Weiss (2005) looked at factors they felt were directly related to teachers program implementation including (a) support of the program by the school principal, (b) teachers self-efficacy beliefs; (c) professional burnout; (d) teachers beliefs about the acceptability of a program with their own beliefs about the student behavior; (f) the anticipated effectiveness of the program. These contextual variables address not the student but the system in which the intervention/treatment resides; the school system, as well as teacher variables. It is not sufficient

to just address contextual variables of the child, such as severity of the problem or skill of the student; but consultee factors, as well as system variables must also be addressed when looking at treatment implementation.

As previously stated acceptability of the program impacts the degree to which a program will be implemented. Cowan and Sheridan (2003) investigated factors affecting the acceptability of Conjoint Behavioral Consultation interventions. They found that for parents, interventions with a reductive component ("negative" component), were rated as more acceptable than interventions using both positive and negative components. This affect was not noted for teachers and it was hypothesized that it is potentially due to the acceptability of reductive components in the home setting. They also found that for teachers as intervention complexity increased, teacher ratings increased; additionally as problem severity increased teacher ratings increased. This finding is contradictory to beliefs that the simpler interventions will be more widely accepted and implemented. However, Cowan and Sheridan (2003) state that this finding could be that as teachers are becoming more familiar with complex interventions their acceptability is increasing; as well as their willingness to do whatever is necessary to minimize severe behavior problems.

Due to their own variability and unpredictability, contextual variables are less likely to be generalized and are more specific to the individual case, there is not as much empirical evidence looking at the effects of contextual variables; however, it is important when consulting and doing research to be cognizant of contextual variables that will affect treatment implementation and treatment integrity of interventions.

Student Recruiting of Teacher Attention

In other fields, such as the medical field, several studies have investigated the effects of social support on increasing treatment integrity; these studies tend to demonstrate a positive

relationship between social support and patient compliance (Levy, 1983). While the concept of using social support and natural cues has been researched in the medical field it has not been extensively researched to increase integrity in the educational setting. There has been considerable research conducted teaching students with developmental delays to recruit positive teacher attention. These studies have investigated the ability to teach students with low rates of academic responding to increase instances of reinforcement in the regular education setting. The goal of these studies is to increase rates and quality of reinforcement for academic responding. By teaching students to recruit positive teacher attention they are able to activate dormant contingencies of reinforcement and take a more proactive role in their learning (Alber & Heward, 2001; Wallace et al., 2003; Alber et al., 1999). Additionally, these studies have taken the concept farther and demonstrated once students are given the skills to contact natural opportunities of reinforcement they are able to generalize those skills to novel settings (Connell et al., 1993; Harchik et al., 1990; Stokes et al., 1978). Not only have students been taught to identify and recruit natural communities of praise but the effects of recruiting praise and teacher attention have been shown to increase student work completion and accuracy (Craft et al., 1998).

Students with both academic and behavioral difficulties can be successfully taught to recruit teacher attention. The increased positive attention by teachers has served to expose students to natural reinforcement in the environment and in turn increase desired behavior and academic productivity. Additionally, researchers have demonstrated that student recruiting is able to generalize to novel settings.

Early studies demonstrated that students can be taught to cue for positive feedback on academic assignments and that as a result students were able to increase responding in the classroom setting. As a result of increased responding and positive feedback the percentage of correct work items increased. Furthermore, they demonstrated that children can control the

behavior of adults during social and academic interactions by actively recruiting reinforcement (Stokes et al., 1978; Hrydowy et al., 1984).

In recent years these studies have been expanded upon looking at diverse populations including developmentally delayed, autistic children, and diverse ages ranging from preschool to adolescents. These studies have demonstrated that students are able to modify the amount of teacher help received through prompting for approval on academic and social performance (Morgan, Young, & Goldstein, 1983). Additionally students can be trained to self assess their work, before recruiting praise and request feedback regarding their assignment. Research demonstrates that students are not only successful in recruiting praise and feedback; but student recruiting generalizes to novel settings both with and without explicit generalization, discriminate between appropriate and inappropriate times for recruiting teacher attention, engage in discriminative recruiting when given rules and maintain recruiting above baseline levels after support has been removed (Harchik et al., 1990; Connell et al., 1993; Alber & Heward, 1997; Craft et al., 1998; Tiger & Hanley, 2004). As a result of increased feedback, praise and generalization students' academic productivity and levels of independent seatwork increased (Wallace et al., 2001; Craft et al., 1998; Alber et al., 1999). As a result of increased student recruiting teacher behavior is modified resulting in increased teacher praise and increased levels of corrective feedback demonstrating that students with disabilities are able to actively influence the amount of instruction they receive in the regular education classroom and proactively take a role in their learning to enhance independent functioning and academic productivity (Wallace et al., 2001; Alber et al., 1999; Alber & Heward, 2001).

This research has been effective in demonstrating that student recruiting is an effective intervention for increasing student productivity, increasing positive student-teacher interactions, and increasing teacher feedback. It has demonstrated that students can be trained to modify their

environment to increase student-teacher interactions. However, research has not yet demonstrated if student can be trained to recruit specific interventions.

Study Design Rationale

Single-subject designs are experiments in which each subject serves as his or her own control, the measurement of the subject's behavior during each phase of the study provides the basis for comparing the effects of experimental variables as they are presented or withdrawn in subsequent conditions (Cooper, Heron, & Heward, 2007, p. 163).

One form of the single subject design is the multiple baseline design; multiple baseline design is the most widely used design for evaluating treatment effects in applied behavior analysis. It is a research tactic that allows researchers to analyze the effects of an independent variable across multiple behaviors, settings, and/or subjects without having to withdraw the treatment to demonstrate that the change in behavior was the result of the application of the treatment. This approach is a widely used when the target behavior is likely to be irreversible or when it is undesirable, impractical or unethical to reverse conditions.

In a multiple baseline design, after initial baseline data has been collected the researcher applies the treatment sequentially across behaviors, settings, or people using time-lagged application of the treatment variable across independent behaviors to analyze improvements in behavior as a function of the stepwise application of the treatment. Experimental control and a functional relation is demonstrated when behaviors change from a steady state at baseline to a new steady state after the introduction of the independent variable (Cooper et al., 2007, p. 201).

Due to the irreversible nature of teaching a new skill to students and the undesirable conditions of reversing an effective treatment along with the applied nature of the study a multiple baseline design has been selected.

Conclusion and Research Questions

Although previous studies have demonstrated that students can be taught to recruit praise from teachers, they have not been applied to recruiting academic assistance and increasing treatment integrity. The purpose of this study was to be to investigate if students can recruit academic assistance in the form of intervention delivery. Additionally, this study investigated the effects of teaching students will allow consultant to fade to levels that are able to be maintained to natural and manageable levels. Additionally, this study investigated if the effects of teaching students to recruit their intervention would allow the consultant to fade support to natural and manageable levels. Therefore, this study sought to expand the current research base by expanding upon treatment integrity research and student recruitment of teacher praise by addressing two main research questions: (a) Can students provide a cue for intervention delivery which results in increased treatment integrity? (b) Can student cueing be effectively maintained with weekly consultation? It was hypothesized that teaching students to serve as a cue by recruiting academic interventions would result in an increase in treatment integrity.

CHAPTER III

METHODS

Participants

Student participants were six student teacher dyads as identified through teacher referral. Students were all placed on Tier II intervention through the school based multi-tiered intervention team at the time of student referral. Ivan was a 7 year old, male, first grade student, Mike was an 8 year old, male, 3rd grader, Heidi was a 9 year old, female 3rd grader, Hillary, Jessica, and Jamie were all 11 year old, female, 5th graders. At the time of the study none of the students were classified as learning disabled; however, during the course of the study, Heidi was tested for special education and placed on an individualized educational plan. The teachers were all regular education classroom teachers. Five teachers participated in the study, Ms. Robertson had been teaching for 16 years and was currently teaching first grade; Ms. Hines was a 6th year 3rd grade teacher; Ms. Stone had 22 years of teaching experience and was currently teaching 5th grade; Ms. Peyton was a 1st year 5th grade teacher. Teachers were offered support in increasing intervention delivery through the use of student responsibility training.

Setting

The study was conducted in the general education classrooms of a Midwestern school district. Total enrollment for the school was 750 students. Training activities for the student and teacher occurred at hallway tables outside of the general education classroom. Student recruiting

and intervention implementation took place within the general education classroom during the school day.

Dependent variable

Treatment integrity. The primary variable of treatment integrity was defined as the completion of a computer delivered intervention called SuccessMaker®. If the students were provided access to and completed a daily session on SuccessMaker® utilizing the classroom computer treatment integrity was defined as 100 percent if the students were denied access to the classroom computer, daily treatment integrity was defined as zero percent. Treatment integrity was measured through the use of a log of daily SuccessMaker® scores recorded by both the teacher and the student resulting from the successful completion of the SuccessMaker® session.

Independent variable

Student Intervention Recruiting. Student intervention recruiting was defined as the occurrence of the following steps: (a) the student solicited the teachers attention, (b) the student appropriately asks for the intervention, and (c) the student accurately completes the recording sheet. Student intervention recruiting was designed to provide the teacher with a natural cue for intervention delivery and was measured through the use of a daily log placed on or in the student's desk and a daily log kept by the classroom teacher indicating the student respectfully requested their intervention.

Intervention development

SuccessMaker® is an instructional software program providing adaptive, personalized reading and/or math intervention and is aligned with common core standards. SuccessMaker® Reading addresses student outcomes in four domains: alphabetics, reading fluency, comprehension, and general literacy achievement. SuccessMaker® Math addresses the areas of

math concepts; communication, operations, and computation; and processes and applications. The completion of a single SuccessMaker® session takes approximately 15 minutes to complete. Additional information is available at _____.

SuccessMaker® software was available on classroom computers and students were provided with login identification and accounts prior to the study. All students and teachers were trained in SuccessMaker® log in and program completion prior to the initiation of the study.

Materials

Materials developed for the intervention included intervention documents such as daily SuccessMaker® scores, daily recruiting forms and daily teacher logs. Daily recruiting permanent products consisted of a recruiting sheet taped on the corner of the student's desk for Mark, Hillary, Heidi and Jessica and a recruiting sheet placed in a 2-pocket folder placed inside the student's desk for Ivan and Jamie. The recruiting sheet included the steps for respectfully requesting their intervention; (1) Remember, when (*either free time or a designated time of the day depending on classroom procedures),* (2) Raise your hand or go up to your teacher and wait for her to call on you, (3) Ask your teacher, "May I please get on the computer and play SuccessMaker?", (4) If she says, "Not right now." Wait until *(the next free time during the day or wait 5 minutes, depending on classroom procedures),* (5) Raise your hand or go up to your teachers desk and wait for her to call on you, (6) Ask, "May I please get on the computer and play SuccessMaker®?", (7) If she says not right now then try again tomorrow, (8) Fill out your form, have your teacher fill in your scores and sign her form. Below the form was a table with a row for each day of the week and a column for the time of day requested, if they requested once, if they requested twice, if they got on Success Maker and their SuccessMaker® score. Ivan's form was modified slightly due to limited reading ability. The steps were abbreviated for Ivan and he did not have a column for time on his form. See attachment_____

The teacher log was placed inside the front pocket of a white 3 ring binder. The teacher form included three columns including a column for date, did the student respectfully request to play SuccessMaker®, and their SuccessMaker® score. See attachment _____.

Reinforcement consisted of tangible items such as lotion, pencils, small toys, erasers, pens and food items such as fruit snacks, trail mix, and granola bars. Reinforcers were placed in a small bag for each student and placed inside the white teacher binder.

Experimental design

A nonconcurrent multiple baseline across teachers design was used to analyze the effects of recruitment on treatment integrity and student performance in the general education setting. The study was conducted for all students from January to April.

Teacher Training. A meeting was held with each teacher prior to the onset of the study to obtain teacher agreement and review the procedures of the study, utilizing student recruiting to increase treatment integrity and increase student responsibility. During the teacher meeting the teachers indicated the best time of day for the students to request their intervention and they indicated their preference for how they wanted the students to get their attention, either walking up to their desk or raising their hand. Teachers were given the log to keep track of the date, if the student requested their intervention, and the intervention scores. Final steps of the teacher meeting verified that the teachers were familiar with the log in procedures for SuccessMaker® and were familiar with how to create student log in. All student's already had SuccessMaker® log in identification and had logged onto SuccessMaker® at least once prior to the onset of the study with the exception of Mark. Mark's teacher indicated that he did not yet have a log on identification for the year and indicated that she was familiar with creating a log on and would have it created prior to Mark requesting. The teacher did not have the log in prior to the onset of teacher training, therefore the consultant facilitated the acquisition of the student log in.

Baseline. Intervention integrity was measured using teacher logs. Each day the primary researcher or a research assistant entered the classroom prior to the start of the day, collected the white teacher binder and the log containing student SuccessMaker® scores, the absence of a score was verified utilizing SuccessMaker® log in information provided by the school psychologist. If intervention integrity was not implemented for three consecutive days integrity was considered deficient and students were then provided recruitment training prior to the next phase change.

Recruitment Training. Recruitment training for each student was conducted at a table with chairs in the hallway outside the general education classroom. Training consisted of modeling, role playing, repeated practice, and performance feedback. Utilizing the procedures on the student recruiting form students were taught to: (1) identify either free time or the designated time for them to ask such as center time, (2) raise their hand or approach the teacher, (3) wait for the teacher to call on them, (4) respectfully request their intervention by saying, "May I please get on the computer and play SuccessMaker?", (5) either get on the computer and complete their intervention or wait until the next appropriate recruiting opportunity such as the next free time or five minutes later, (6) appropriately fill out their recruiting form. Once students could appropriately request their intervention and correctly fill out the recruiting form three consecutive times intervention recruitment began.

Student intervention recruiting. An appropriate time for student recruiting was determined between the primary researcher and teacher as defined as a time in which the student was most likely to have time during the day to complete a 15 minute SuccessMaker® session. The students were then trained during recruitment training that each day during the designated time they were to recruit their intervention until it was delivered for a maximum of two times. At the beginning of each day the primary researcher or a research assistant collected the teacher's white binder which included the teacher log and recorded the student's intervention data on a research assistant log utilizing the teacher's log and the students recruiting form located on the corner of

their desk or in a folder inside their desk. The research log recorded if the student requested their intervention, how many times they requested their intervention, if the teacher delivered the intervention, if they earned a prize for recruiting, their intervention score, and daily intervention integrity. If there was a discrepancy between the student's recruitment form and the teachers log the research assistant or primary researcher would briefly meet with the teacher to clarify the discrepancy.

Following the recording of intervention data the research assistant or primary researcher would locate the student in the cafeteria, gym, or playground prior to the beginning of the school day. If the student appropriately requested their intervention they were provided tangible reinforcement and verbal praise for appropriately requesting their intervention and provide a prompt to ask again today during their designated time.

During daily reinforcement the researcher met with the student each morning and prompted the student to recruit their intervention that day and provided reinforcement for the previous day. Students were allowed to pick a prize from a prize bag if they indicated on their student event recruiting sheet that they recruited for the intervention until the intervention was delivered or maximum of two appropriate recruits; and the teacher indicates on the intervention protocol that the student was recruiting their intervention. Students were reinforced for appropriately requesting their intervention regardless of intervention delivery if they appropriately recruited their intervention for a maximum of 2 times.

If the student failed to appropriately request their intervention they were reminded to try again today and reminded when and how to appropriately request their intervention. Intervention integrity was recorded utilizing the correspondence of the student recruiting form and the teacher log which both indicated the student requested their intervention and provided a daily SuccessMaker® score. Intervention integrity was monitored utilizing the student recruiting form

and the teacher log both indicating student recruitment and daily scores. After treatment integrity was above 100% for 3 consecutive sessions, consultant involvement was faded to weekly reinforcement.

Consultant fading

For practical purposes once the student was able to demonstrate recruiting and student recruiting events were effective in increasing intervention integrity the consultant faded out to more natural and practical levels of involvement. During weekly reinforcement the primary researcher entered the classroom on Monday morning and recorded integrity and SuccessMaker® scores from the student's recruiting form and the teacher log. The researcher then met with the student and allowed the student to draw one of five cards from a bag, each card had one day of the week written on the card. If the student recruited for their intervention on the day of the card drawn from the bag, and the teacher indicated on the treatment protocol that the intervention was recruited for that day then the student was allowed to pick a prize from a bag. The student was then provided with verbal praise for appropriately recruiting and was prompted to continue requesting their intervention at the appropriate time each day. Intervention integrity continued to be recorded using permanent products throughout the weekly reinforcement phase.

Procedural Integrity

Procedural integrity was monitored 39% of the daily consultation sessions and 90% of the weekly consultation sessions. Procedural integrity was measured utilizing a checklist indicating, if the researcher recorded the correct information from the student recruiting form and the teacher log onto a data collection log. If the researcher located the student, provided reinforcement if necessary, verbal feedback and praise, and provided a prompt to the student for the next day. Procedural integrity was calculated as the total number of steps divided by the total number of steps multiplied by 100.

Interrater Reliability

Following the completion of the study, 25% of the data points were verified utilizing the research log to verify accurate data entry into the graphing database. Interrater reliability was verified on if the student recruited their intervention and intervention integrity. Integrity was calculated as the total number of accurate data points divided by the total number of data points multiplied by 100.

CHAPTER VI

RESULTS

Six students were trained to recruit their intervention due to a lack of treatment integrity. Of those six students, three of the students recruited their intervention during 80% or more of their sessions. Figure 1 shows treatment integrity and student recruitment data for those teachers who received the treatment of student recruiting more than 80% of the sessions. Figure 2 shows the treatment integrity and student recruitment data for those teachers who received the treatment of student recruiting for less than 80% of the sessions.

Baseline

Baseline was collected regarding SuccessMaker® implementation beginning during the second semester of school for all participating subjects. Baseline data for all subjects is presented in Figures 1 and 2. Baseline data for Ms. Peyton(Jessica), Ms. Peyton(Hadley), Ms. Hines(Heidi), and Ms. Hines(Mike) indicated that the treatment of Success Maker was not delivered during the second semester of school. Baseline data for Ms. Stone (Jamie) indicated that the treatment of Success Maker was initially implemented once but was then not delivered again. Baseline data for Ms. Robertson(Isaiah) was variable with the treatment of SuccessMaker® being delivered three

of the 13 possible sessions. Once the teachers failed to implement the intervention for three consecutive sessions they were eligible to receive student recruiting treatment.

Student Intervention Recruitment

Ms. Peyton, Jessica. Following the lack of treatment implementation for a 3 consecutive days Jessica received student intervention recruitment training. Immediately following intervention recruitment training, Jessica began implementing the treatment of intervention recruitment. Jessica recruited her intervention 100% percent of the time during daily reinforcement and student recruitment led to increased treatment delivery. Following three consecutive days of adequate treatment delivery, reinforcement and prompts were faded from daily to weekly delivery. During phase two, Jessica implemented the treatment of student recruitment 95% of the possible sessions. Of the sessions that Jessica recruited her intervention, the intervention was delivered 85% of the sessions. See figure 1.

Ms. Peyton, Hadley. Hadley was trained in the treatment of student intervention recruitment following a minimum of 3 consecutive days in which the treatment of SuccessMaker® was not delivered. Following student intervention recruitment training, Hadley began implementing the treatment of intervention recruitment. Hadley recruited her intervention 100% of the possible sessions during phase one, implementation of student recruitment led to intervention delivery in 100% of the possible sessions. Following 3 consecutive days of intervention delivery, prompts and reinforcement were faded from daily to weekly. During phase two Hadley implemented the treatment of student recruitment 92% of the possible sessions. Of the sessions that Hadley recruited her intervention, the intervention was delivered 82% of the sessions. See figure 1.

Mrs. Hines, Hanna. Hanna was trained in the treatment of intervention recruitment following baseline data collection. Following student intervention recruitment training, Hanna implemented the treatment of student recruitment 100% of the possible sessions. Student recruitment led to an increase in intervention delivery from 0% of possible sessions to 100% of possible sessions. Following 3 consecutive recruitment sessions Hanna was faded from daily prompts to weekly prompts and weekly reinforcement. During Phase 2, Hanna implemented the treatment of student recruitment 85% of the possible sessions. Out of the possible sessions, the intervention of SuccessMaker® was delivered 92% of the possible sessions. On one occasion during Phase 2 in which Hanna failed to recruit her intervention, the teacher prompted her to complete SuccessMaker® without student recruitment.

Ms. Robertson, Isaiah. Following student recruitment training Isaiah recruited for his intervention 83% of the possible recruitment sessions. When Isaiah recruited his intervention it resulted in intervention delivery. Following intervention delivery for 3 consecutive days daily prompts and reinforcement were faded. Isaiah's implementation dropped to only 40% of the possible sessions during Phase II. Due to the drop in student recruitment and the corresponding drop in treatment integrity Isaiah was returned to Phase 1, daily reinforcement. Upon return to daily reinforcement Isaiah did not return to pre-fading levels of student recruitment, recruiting on only 28% of the possible sessions. During this time, each instance of student recruitment led to intervention delivery with the exception of one recruitment session in which Mike recruited at an inappropriate time.

Ms. Hines, Mike. Following student recruitment training, Mike recruited his intervention 28% of the time. The first two times Mike requested his intervention SuccessMaker® was not delivered because the teacher had not yet obtained log-on information. Therefore, the primary researcher facilitated the acquisition of log-on information. Upon the acquisition of log-on information when Mike requested his intervention the third time, the intervention was delivered indicating that student recruitment was successful in increasing treatment integrity. On two occasions, Ms. Hines implemented the treatment of SuccessMaker® without student recruitment. Although Mike only recruited his intervention 28% of the possible sessions treatment integrity increased from the treatment being delivered in 0% of the sessions during baseline to 28% of the possible sessions during Phase 2. Although student recruitment led to an increase in intervention delivery, student recruitment was variable and occurred in less than 80% of the possible sessions therefore prompts and reinforcement were not faded.

Mrs. Stone, Jamie. Following student recruitment training Jamie only requested her intervention 37% of the time. However, when Jamie requested her intervention it resulted in an increase in treatment integrity and intervention delivery. Although student recruitment led to an increase in treatment integrity, student recruitment was variable and occurred on less than 80% of the sessions, therefore recruitment was not sufficient to warrant fading to phase two.

Procedural Integrity

Procedural integrity checks indicated that for daily consultation, procedural integrity was 98% (range = 67 – 100). Procedural integrity checks indicated for weekly consultation procedural integrity was 100%.

Interrater Reliability

Will Finish… Waiting on data file.

CHAPTER V

DISCUSSION

Teaching students to recruit their intervention increased treatment integrity in all six cases. Except two sessions in which Mike did not have log-on information and one occasion in which Isaiah recruited at an inappropriate time, student recruiting resulted in intervention delivery. These results indicate that student recruitment is a successful intervention to increase treatment integrity. In the case of students who were implementing the treatment of student recruiting 80% or more of the possible sessions consultant fading was implemented.

. Hanna, Hadley, and Jessica recruited for their intervention more than 80% of the possible sessions and maintained high levels of student recruitment during weekly consultation. Therefore, weekly consultant involvement indicated for Mrs. Hines (Hanna), Mrs. Peyton (Hadley), and Mrs. Peyton (Jessica) the treatment of student recruitment can be maintained with weekly consultant involvement. Additionally, the treatment of student recruitment resulted in the maintenance of high levels of treatment integrity consistent with daily consultant involvement and above that of baseline.

In the case of Mike, Jamie, and Isaiah student recruitment was variable. While student recruitment led to intervention delivery, without consistent recruitment, treatment integrity did not consistently increase due to the lack of treatment delivery(student

recruitment). It is hypothesized that the tangible reinforcement utilized was not sufficient for the response effort required or not motivating for the particular student. With greater manipulation of reinforcement, including negative reinforcement such as escape from task demand or with more powerful reinforcers it is hypothesized that an appropriate reinforcer could be identified that would result in higher levels of student recruitment. Additionally, it is hypothesized that more salient cues could assist students in remembering to cue at the appropriate time for example using an alarm clock at the students desk set for the designated intervention recruitment time.

Implications for practice indicate that student recruitment of intervention delivery can lead to an increase in treatment integrity while requiring minimal consultant effort. In addition to minimal consultant involvement it adds active student involvement in interventions and can teach students skills to access teacher assistance. Furthermore, student recruitment of intervention delivery is a positive approach to increasing treatment integrity focusing less on punitive approaches such as performance feedback and teacher training and relying on student responsibility and social support cues.

In practice the implementation of student recruitment of intervention delivery is easy, with most students implementing the treatment following an initial 5 minute training. Furthermore, student recruitment can be maintained with weekly consultant involvement. Reinforcers utilized for student recruitment can be low cost items or can include access to preferred tasks or removal of tasks which do not require additional materials. Therefore, student recruitment of intervention delivery should be considered as a treatment for low levels of treatment integrity and can easily be done in the field at minimal cost and with low levels of consultant involvement.

Limitations of the present study include the type of reinforcement utilized, reinforcement consisted of small tangible reinforcement, as a result the amount of reinforcement manipulation available in cases in which students did not respond to initial training was limited. Furthermore, the present study utilized a computer delivered intervention which required low levels of response effort on behalf of the teacher. Interventions that require higher levels of response effort might result in less of a one to one correspondence between student recruitment and intervention delivery. Finally, the present study is a non concurrent multiple baseline study, resulting in a decrease in internal validity.

Future research should investigate group contingencies of reinforcement, such as class wide reinforcement where students are entered into a drawing for each time they request their intervention. Additionally, future research should investigate the possibilities of teacher delivered reinforcement. In the present study both restricted and free operants were utilized, where some students were allowed to request during free time and some students were only allowed to ask during specific times of the day. Future research should investigate if both free and restricted operants are equally effective or if one approach is more effective in increasing treatment integrity. Finally, the present study required low levels of teacher response effort. This was designed to hold response effort constant across teachers however, future studies should investigate the effectiveness of student recruitment of interventions in both a low response effort intervention such as a computer delivered intervention, as well as in a higher response effort intervention such as a teacher delivered interventions such as repeated readings or cover copy compare interventions.

Treatment integrity is a challenge to practitioners across fields, this research contributes to existing literature indicating that utilizing social supports as a cue can lead to an increase in treatment delivery. Therefore, it is recommended that practitioners continue to replicate and expand upon the use of social support and student cuing to increase treatment integrity in the field.

REFERENCES

Abrami, P.C., Poulsen, C., & Chambers, B. (2004). Teacher motivation to implement an educational innovation: Factors differentiating users and non-users of cooperative learning. *Educational Psychology, 24*(2), 201-216.

Alber, S.R. & Heward, W.L. (2001). Teaching students to recruit positive attention: A review and recommendations. *Journal of Behavioral Education, 10*(4), 177-204.

Alber, S.R., Heward, W.L., & Hippler, B.J. (1999). Teaching middle school students with learning disabilities to recruit positive teacher attention. *Exceptional Children, 65*(2), 253-270.

Barnes, A.C. & Harlacher, J.E. (2008). Clearing the confusion: Response-to-intervention as a set of principles. *Education and Treatment of Children, 31*(3), 417-431.

Bradshaw, C.P., Reinke, W.M., Brown, L.D., Bevans, K.B., Leaf, P.J. (2008). Implementation of school-wide positive behavioral interventions and supports (PBIS) in elementary schools: Observations from a randomized trial. *Education and treatment of children, 31*(1), 1-26.

Brown D., Pryzwansky W.B., & Schulte, A.C., (2006). *Psychological consultation and collaboration: Introduction to theory and practice*. Boston : Pearson Education, Inc.

Codding, R.S., Chan-Iannetta, L., Palmer, M., & Lukito, G. (2009). Examining a classwide application of cover-copy-compare with and without goal setting to enhance mathematics fluency. *School Psychology Quarterly, 24*(3), 173-185.

Codding, R.S., Eckert, T.L., Fanning, E., Shiyko, M., & Solomon, E. (2007). Comparing mathematics interventions: The effects of cover-copy-compare alone and combined with performance feedback on digits correct and incorrect. *Journal of Behavioral Education, 16*(2), 125-141.

Codding, R.S., Feinberg, A.B., Dunn, E.K., & Pace, G.M. (2005). Effects of immediate performance feedback on implementation of behavior support plans. *Journal of Applied Behavior Analysis, 38*(2), 205-219.

Connell, M.C., Carta, J.J., & Baer, D.M. (1983). Programming generalization of in-class transition skills: Teaching preschoolers with developmental delays to self-assess and recruit contingent teacher praise. *Journal of Applied Behavior Analysis, 26*(3), 345-352.

Cooper, J.O., Heron, T.E., & Heward, W.L. (2007). *Applied Behavior Analysis* (2nd ed.). Columbus, OH: Pearson.

Cowan, R.J. & Sheridan, S.M. (2003). Investigating the acceptability of behavioral interventions in applied conjoint behavioral consultation: Moving from analog conditions to naturalistic settings. *School Psychology Quarterly, 18*(1), 1-21.

Craft, M.A., Alber, S.R., & Heward, W.L. (1998). Teaching elementary students with developmental disabilities to recruit teacher attention in a general education

classroom: Effects on teacher praise and academic productivity. *Journal of Applied Behavior Analysis, 31*(3), 399-415.

Daly, E.J., Lentz, F.E., & Boyer, J. (1996). The instructional hierarchy: A conceptual model for understanding the effective components of reading interventions. *School Psychology Quarterly, 11*(4), 369-386.

Detrich, R. (1999). Increasing treatment fidelity by matching interventions to contextual variables within the educational setting. *School Psychology Review, 28*(4), 608-620.

DiGennaro, F.D., Martens, B.K., & McIntyre, L.L. (2005). Increasing treatment integrity through negative reinforcement: Effects on teacher and student behavior. *School Psychology Review, 34*(2), 220-231.

Elliott, S.N., Malecki, C.K., & Demaray, M.K. (2001). New directions in social skills assessment and intervention for elementary and middle school students. *Exceptionality, 9*(1&2), 19-32.

Fleischner, J.E. & Manheimer, M.A. (2010). Math interventions for students with learning disabilities: Myths and realities. *School Psychology Review, 26*(3), 397-422.

Fuchs, D. & Fuchs, L.S. (2006). Introduction to response to intervention: What, why, and how valid is it. *Reading Research Quarterly, 41*(1), 93-99.

Glover, T.A. & DiPerna, J.C. (2007). Service delivery for response to intervention: Core components and directions for future research. *School Psychology Review, 36*(4), 526-540.

Gresham, F.M., MacMillan, D.L., Beebe-Frankenberger, M.E., & Bocian, K.M. (2000). Treatment integrity in learning disabilities intervention research: Do we really know how treatments are implemented?. *Learning Disabilities Research & Practice, 15*(4), 198-205.

Han, S.S. & Weiss, B. (2005). Sustainability of teacher implementation of school-based mental health programs. *Journal of Abnormal Child Psychology, 33*(6), 665-679.

Harchik, A.E., Harchik, A.J., Luce, S.C., & Sherman, J.A. (1990). Teaching autistic and severely handicapped children to recruit praise: Acquisition and generalization. *Research in Developmental Disabilities, 11*, 77-95.

Heartland Area Education Agency. (2002). *Program manual for special education.* Johnston, IA: Author.

Hrydowy, E.R., Stokes, T.F., & Martin, G.L. (1984). Training elementary students to prompt teacher praise. *Education and Treatment of Children, 7*(2) 99-108.

Jones K.M., Wickstrom, K.F., & Friman, P.C. (1997). The effects of observational feedback on treatment integrity in school-based behavioral consultation. *School Psychology Quarterly, 12*(4), 316-326.

Kealey, K.A., Peterson, Jr., A.V., Gaul, M.A., & Dinh, K.T. (2000). Teacher training as a behavior change process: Principles and results from a longitudinal study. *Health Education & Behavior, 27,* 64-81.

Kratochwill, T.R., Elliott, S.N., & Callan-Stoiber, K., (2002). Best practices in school-based problem-solving consultation. In A. Thomas & J. Grimes (Eds.), *Best Practices in School Psychology IV* (Vols. 1) (583-608). Bethesda, Maryland : National Association of School Psychologists.

Kratochwill, T.R. Volpiansky, P., Clements, M., & Ball, C. (2007). Professional development in the implementing and sustaining multitier prevention models: Implications for response to intervention. *School Psychology Review, 36*(4), 618-631.

Lane, K.L., Bocian, K.M., MacMillan, D.L., & Gresham, F.M. (2004). Treatment integrity: An essential – but often forgotten – component of school-based interventions. *Preventing School Failure, 48*(3), 36-43.

Levy, R.L. (1983). Social support and compliance: A selective review and critique of treatment integrity and outcome measurement. *Social Science Medicine, 17*(18), 1329-1338.

Mastropieri, M.A. & Scruggs, T.E. (2005). Feasibility and consequences of response to intervention: Examination of the issues and scientific evidence as a model for the identification of individuals with learning disabilities. *Journal of Learning Disabilities, 38*(6), 525-531.

Merrell, K.W., Ervin, R.A., & Gimpel, G.A. (2006). *School psychology for the 21st century: Foundations and practices.* New York : The Guilford Press.

Moncher, F.J. & Prinz, R.J. (1991). Treatment fidelity in outcome studies. *Clinical Psychology Review, 11,* 247-266.

Morgan, D., Young, R., & Goldstein, S. (1983). Teaching behaviorally disordered students to increase teacher attention and praise in mainstreamed classrooms. *Behavioral Disorders, 8*(4), 265-273.

Mortenson, B.P. & Witt, J.C. (1998). The use of weekly performance feedback to increase teacher implementation of a prereferral academic intervention. *School Psychology Review, 27*(4), 613-635.

National Reading Panel. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4754). Washington, DC: National Institute of Child Health and Human Development.

Noell, G.H., Gresham, F.M. & Gansle, K.A. (2002). Does treatment integrity matter? A preliminary investigation of instructional implementation and mathematics performance. *Journal of Behavioral Education, 11*(1), 51-67.

Noell, G.H., Witt, J.C., Gilbertson, D.N., Ranier, D.D., & Freeland, J.T. (1997). Increasing teacher implementation in general education settings through consultation and performance feedback. *School Psychology Quarterly, 12*(1), p 77-88.

Noell, G.H., Witt, J.C., LaFluer, L.H., Mortenson, B.P., Ranier, D.D., & LaVelle, J. (2000). Increasing intervention implementation in general education following consultation: A comparison of two follow-up strategies. *Journal of Applied Behavior Analysis, 33*(3), 271-284.

Noell, G.H., Witt, J.C., Slider, N.J., Connell, J.E., Gatti, S.L., Williams, … Duhon, G.J. (2005). Treatment implementation following behavioral consultation in schools: A comparison of three follow-up strategies. *School Psychology Review, 34*(1), 87-106.

Poncy, B.C. Skinner, C.H., & Jaspers, K.E. (2007). Evaluating and comparing interventions designed to enhance math fact accuracy and fluency: Cover, copy, and compare versus taped problems. *Journal of Behavioral Education, 16*, 27-37.

Resnick, B. Bellg, A.J., Borrelli, B., DeFrancesco, C., Breger, R., Hecht, J., … Czajkowski, S. (2005). Examples of implementation and evaluation of treatment fidelity in the BBC studies: Where we are and where we need to go. *Annals of behavioral medicine. 29,* 46-54.

Shinn, M.R. (2007). Identifying students at risk, monitoring performance, and determining eligibility within response to intervention: Research on educational need and benefit from academic intervention. *School Psychology Review, 36*(4), 601-617.

Skinner, C.H., McLaughlin, T.E., Logan, P. (1997). Cover, Copy, Compare: A self-managed academic intervention effective across skills, students, and settings. *Journal of Behavioral Education, 7*(3), 295-306.

Skinner, C.H. (1998). Preventing Academic Skills Deficits. In ?. Watson & F.M. Gresham (Eds.), *Handbook of Child Behavior Therapy* (61 – 82). New York: Plenum Press.

Smith, S.W., Daunic, A.P., & Taylor, G.G. (2007). Treatment fidelity in applied educational research: Expanding the adoption and application of measures to ensure evidence-based practice. *Education and Treatment of Children, 30*(4), 121-134.

Sterling-Turner, H.E., Watson, T.S. & Moore, J.W. (2002). The effects of direct training and treatment integrity on treatment outcomes in school consultation. *School Psychology Quarterly, 17*(1), 47-77.

Sterling-Turner, H.E., Watson, T.S., Wildmon, M., Watkins, C. & Little, E. (2001). Investigating the relationship between training type and treatment integrity. *School Psychology Quarterly, 16*(1), 56-67.

Stokes, T.F., Fowler, S.A., & Baer, D.M. (1978). Training preschool children to recruit natural communities of reinforcement. *Journal of Applied Behavior Analysis, 11*(2), 285-303.

Therrien, W.J., & Kubina, R.M. (2006). Developing reading fluency with repeated reading. *Interventions in School and Clinic, 41*(3), 156-160.

Tiger, J.H. & Hanley, G.P. (2004). Developing stimulus control of preschooler mands: An analysis of schedule-correlated and contingency-specifying stimuli. *Journal of Applied Behavior Analysis, 37*(4), 517-521.

Tilly III, W.D. (2002). Best Practices in School Psychology as a Problem-Solving Enterprise. In A. Thomas & J. Grimes (Eds.), *Best Practices in School Psychology IV* (Vols. 1) (21 – 36). Bethesda, Maryland : National Association of School Psychologists.

Wallace, M.A., Cox, E.A., & Skinner, C.H. (2003). Increasing independent seatwork: Breaking large assignments into smaller assignments and teaching a student with retardation to recruit reinforcement. *School Psychology Review, 32*(1), 132-142.

Waltz, J., Addis, M.E., Koerner, K., & Jacobson, N.S. (1993). Testing the integrity of a psychotherapy protocol: Assessment of adherence and competence. *Journal of Consulting and Clinical Psychology, 61*(4), 620-630.

Wickstrom, K.F., Jones, K.M., LaFleur, L.H. & Witt, J.C. (1998). An analysis of treatment integrity in school-based behavioral consultation. *School Psychology Quarterly, 13*(2), 141-154.

Wilkinson, L.A. (2006). Monitoring treatment integrity: An alternative to the 'consult and hope' strategy in school-based behavioral consultation. *School Psychology International, 27*(4), 426-438.

Witt, J.C. (1997). Talk is not cheap. *School Psychology Quarterly, 12*(4), 281-292.

Witt, J.C., Gresham, F.M., & Noell, G.H. (1996). The effectiveness and efficiency of behavioral consultation: Differing Perspectives about epistemology and what we know. *Journal of Educational and Psychological Consultation, 7*(4), 355-360.

Witt, J.C., Noell, G.H., LaFluer, L.H., & Mortenson, B.P. (1997). Teacher use of interventions in general educationsettings measurement and analysis of the independent variable. *Journal of Applied Behavior Analysis, 30*(4), 693-696.

Wright, J. (n.d.) *The Savvy Teacher's Guide: Reading Interventions that Work.* Retrieved from http://www.jimwrightonline.com/pdfdocs/brouge/rdngManual.PDF.

LIST OF APPENDICIES

APPENDIX Page

Teacher Agreement Form

We are currently conducting research to determine if students requesting academic assistance can increase the delivery of an academic intervention. A student in your classroom has been identified by the Student Assistance Team as a potential student who might benefit from participating in this research project. As part of the RTI process, your student's current reading or math level will be assessed and a classroom based program will be developed. The assessment may include individualized activities outside of the classroom; outside activities will be coordinated around the class schedule and will not take place during core instruction times. As part of the research, your student will receive training to request academic assistance in the form of the delivery of the classroom based program developed during the RTI process. Your student may receive stickers and other small tangible incentives for requesting academic assistance and for their daily performance on the classroom based program.

As part of your participation in this project, we will meet to work collaboratively on identifying educational activities that will increase your student's educational success on basic math and/or reading skills, and we will identify an appropriate time to deliver the educational activities. After this has been established, a designated researcher will come to your classroom on a regular basis to monitor progress and assist you and your student in ensuring the activities are done on a daily basis.

I am requesting your permission for you and your student to participate in this research project. If you choose to participate, information may also be included in research reports regarding ways to increase the delivery of individualized interventions. Information will be collected about the number of times your student requested academic assistance and their daily performance on the classroom based program. If you or your student's information is included in any research reports, his or her name or other identifying information will not be included in the reports. All records will be stored securely and only researchers and research supervisors will have access to the records. If you choose not to be included it will not change the current services required. Your participation in this project is voluntary and you may choose to stop participation at any time.

If you have any questions about your child's involvement in this study, please contact me or my supervisor at your earliest convenience. For any information regarding the protection of human subjects you can also contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-774-3377 or irb@okstate.edu.

Sincerely,

Mary Ann Giblet, M.S.
School Psychology Graduate Student
Oklahoma State University
405-744-5474
mary.giblet@okstate.edu

Dr. Gary Duhon
Associate Professor
Oklahoma State University
405-744-9436
gary.duhon@okstate.edu

____ I give my permission to be participate in the research project.

____ No, I prefer not to participate in the research project.

Teacher Signature: _____ Date: _____

Permission Form

Dear Parent,

We are currently carrying out research to determine if students requesting academic assistance can increase the delivery of academic assistance. Your child has been selected by the teacher as a potential student who might benefit from participating in this research project. As part of the current Response to Intervention (RTI) process your child's current reading and/or math level will be identified and an individualized reading or math program will be developed to increase his or her success in reading and/or math. As part of this process your child may take part in some individualized activities outside of the classroom. Outside classroom activities will be coordinated with the classroom teacher and will not take place during core instruction times. The RTI activities are part of the current educational practices at Edmond Public Schools; however, as part of the research project your student will receive training to request academic assistance in the form of the delivery of the individualized reading and/or math program developed through the RTI process. Your child may receive stickers and other small, tangible incentives for requesting academic assistance and for their daily performance on the classroom based program. There are no known risks associated with this project which are greater than those ordinarily encountered in a regular school day.

I am writing to request your permission for your child to participate in this research project. If you choose to allow your child to participate he or she may also be included in research reports regarding ways to increase the delivery of individualized interventions. Information will be collected about the number of times your child requested academic assistance and his or her daily performance on the classroom based program. If your child is included in any research reports, his or her name or other identifying information will not be included in the reports. All records will be stored securely and only researchers and research supervisors will have access to the records. If you do not choose for your student to be included it will not change the services your child is already receiving. Your student's participation in this project is voluntary and you may choose to remove your student from the intervention at any time.

If you have any questions about your child's involvement in this study please contact me or my supervisor at your earliest convenience. For any information regarding the protection of human subjects you can also contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-774-3377 or irb@okstate.edu

Sincerely,

Mary Ann Giblet, M.S.
School Psychology Graduate Student
State University
405-744-5474
mary.giblet@okstate.edu

Dr. Gary Duhon
Associate Professor Oklahoma
Oklahoma State University
405-744-9436
gary.duhon@okstate.edu

____ I give my permission for my child to be included in the research project.

____ No, I prefer that my child not be included in the research project.

Parent/Guardian Signature: _____Date:_____

Student Signature: _____ Student's Name:_____

Student Permission Form

I am working on a project to see if students can learn to request assistance to help them in reading and math. Your teacher feels like you would be a good student to request assistance in the classroom.

As part of participating in this project, we will meet and find out what activities will help you in reading and math, and then I will teach you to ask your teacher to help you with those activities. This meeting might take place during music, PE, or another free time activity; you will not miss assignments or classroom instruction. I will come to your classroom each morning and we will discuss if you asked the teacher to help you with your activities, and if you did then you will have the opportunity to receive stickers, pencils, erasers and other small prizes.

Are you willing to work with me and your teacher to improve your reading and math and to ask your teacher for help in the classroom?

____ I am willing to be included in the research project.

____ No, I choose not be included in the research project.

Student Signature: _____ Date: _____

Student ID:_____
RA Name:_____
Date:_____

Daily Research Assistant Protocol

_____ 1. Prior to core instruction time enter the classroom and record the information off of the students recruiting sheet.

_____ 2. Collect the intervention folder and record if the teacher reports the student recruited the intervention (Success Maker).

*If the intervention (Success Maker) was not completed but the student indicated they requested to play success maker, briefly meet with the teacher and verify the student did in fact ask to get on the computer for Success Maker.

*If there is a discrepancy between the students recruiting form and the teachers form, briefly meet with the teacher to verify the cause of the discrepancy.

_____ 3. Log intervention (Success Maker) results from the previous day.

_____ 4. Calculate the intervention integrity for the previous day.

Number of completed steps/number of possible steps x 100 =

_____ 5. Briefly pull the student aside,

If the student appropriately recruited

Thank you for respectfully asking to get on the computer and play Success Maker yesterday. You can now pick a prize out of the prize bag. (Provide additional verbal praise).

After the student picks their prize

Remember to keep up the good work and follow the steps on your form and don't forget to respectfully ask your teacher play Success Maker again today.

Give the student a high five and return them to their seat or activity

If the student failed to appropriately recruit

I am sorry you did not respectfully ask to get on the computer for Success Maker yesterday. You can try again today.

Remember to follow the steps on your form and respectfully ask your teacher to get on the computer for Success Maker during _____.

Return the student to their seat or previous activity

_____ 6. Return the students folder to the designated location and quietly exit the room.

Student ID:_____
RA Name:_____
Date:_____

Weekly Research Assistant Protocol

_____ 1. On Monday morning, prior to core instruction time, enter the classroom and record the information off of the students recruiting sheet.

_____ 2. Collect the intervention folder and record if the teacher reports the student recruited the intervention (Success Maker) the previous week.

*If the intervention (Success Maker) was not completed but the student indicated they requested to play success maker, briefly meet with the teacher and verify the student did in fact ask to get on the computer for Success Maker.

*If there is a discrepancy between the students recruiting form and the teachers form, briefly meet with the teacher to verify the cause of the discrepancy.

_____ 3. Log intervention (Success Maker) results from the previous week.

_____ 4. Calculate the intervention integrity for the previous week.
Number of completed steps/number of possible steps x 100 =

_____ 5. Briefly pull the student aside,

If the student appropriately recruited for at least one day

Thank you for respectfully asking to get on the computer and play Success Maker last week. You can now earn an opportunity to pick a prize out of the prize bag. You can draw one card from the stack, if you asked to play Success Maker on the day that is on the card then you will be allowed to pick a prize.

If the student failed to appropriately recruit all days the previous week then state:

I am sorry you did not respectfully ask to get on the computer for Success Maker last week you can try again this week.

Remember to follow the steps on your form and respectfully ask your teacher to get on the computer for Success Maker during _____.

_____ 6. Allow the student to draw one card.

If the intervention log indicated the student recruited for the intervention on the day of the card drawn state:

Thank you for respectfully asking to play your game on __(Day of the Week)_ you may now pick a prize out of the prize bag (provide additional verbal praise).

If the intervention log indicated the student failed to recruit the intervention on the day of the card drawn state:

I am sorry you did not respectfully ask to get on the computer for Success Maker on ___(Day of the Week)_ you may tray again this week. Remember to follow the steps on your form and respectfully ask your teacher to get on the computer for Success Maker during _____.

After the student picks their prize

Remember to keep up the good work and follow the steps on your form and don't forget to respectfully ask your teacher play Success Maker again this week during_____.

Give the student a high five and return them to their seat or activity

_____ 7. Return the student to their seat or previous activity

_____ 8. Return the students folder to the designated location, erase any markings on the students laminated recording sheet and quietly exit the room.

Student ID:_____
RA Name:_____
Date:_____

Daily Integrity Protocol

_____ 1. The RA entered the classroom prior to core instruction time.

_____ 2. The RA recorded the correct information off of the students laminated recording sheet.

_____ 3. The RA collected the intervention folder and recorded the correct scores and information on the RA log.
_____*If the intervention (Success Maker) was not completed but the student indicated they requested to play success maker, the researcher briefly met with the teacher to verify the student did in fact ask to get on the computer for Success Maker.
_____*If there is a discrepancy between the students recruiting form and the teachers form, briefly meet with the teacher to verify the cause of the discrepancy.

_____ 4. The RA recorded the correct Success Maker Score.

_____ 5. The RA calculated the correct intervention integrity for the previous day.
Number of completed steps/number of possible steps x 100 =

_____ 6. The RA pulled the student aside and followed the exact verbal protocol.
If the student appropriately recruited
Thank you for respectfully asking to get on the computer and play Success Maker yesterday. You can now pick a prize out of the prize bag. (Provide additional verbal praise).
If the student failed to appropriately recruit the RA stated the exact phrase and then proceeded to Step 9.
I am sorry you did not respectfully ask to get on the computer for Success Maker yesterday. You can try again today.
Remember to follow the steps on your form and respectfully ask your teacher to get on the computer for Success Maker during _____.

_____ 7. The RA allowed the student to pick a prize and stated the exact verbal phrase.
Thank you for respectfully asking to get on the computer and play Success Maker yesterday. You can now pick a prize out of the prize bag. (Provide additional verbal praise).

_____ 8. The RA then gave the student a high five and returned them to their seat or activity

_____ 9. The RA returned the students folder and exited the room quietly.

Student ID:_____
RA Name:_____
Date:_____

Weekly Integrity Protocol

_____ 1. On Monday, the RA entered the classroom prior to core instruction time.

_____ 2. The RA recorded the correct information off of the students laminated recording sheet.

_____ 3. The RA collected the intervention folder and recorded the correct scores and information on the RA log.

_____*If the intervention (Success Maker) was not completed but the student indicated they requested to play success maker, briefly meet with the teacher and verify the student did in fact ask to get on the computer for Success Maker.

_____*If there is a discrepancy between the students recruiting form and the teachers form, briefly meet with the teacher to verify the cause of the discrepancy.

_____ 4. The RA recorded the correct Success Maker Scores

_____ 5. The RA calculated the correct intervention integrity for the previous week
Number of completed steps/number of possible steps x 100 =

_____ 6. The RA pulled the student aside and followed the exact verbal protocol.
If the student appropriately recruited at least one day the prior week

Thank you for respectfully asking to get on the computer and play Success Maker last week. You can now earn an opportunity to pick a prize out of the prize bag. You can draw one card from the stack, if you asked to play Success Maker on the day that is on the card then you will be allowed to pick a prize.

If the student failed to appropriately recruit the RA stated the exact phrase and then proceeded to Step 9.

I am sorry you did not respectfully ask to get on the computer for Success Maker last week you can try again this week.
Remember to follow the steps on your form and respectfully ask your teacher to get on the computer for Success Maker during _____.

_____ 7. The RA allowed the student to pick one card from the stack.
If the intervention log indicated the student recruited for the intervention on the day of the card drawn the RA stated:

Thank you for respectfully asking to play your game on __(Day of the Week)_ you may now pick a prize out of the prize bag (provide additional verbal praise).

After the student picks their prize

Remember to keep up the good work and follow the steps on your form and don't forget to respectfully ask your teacher play Success Maker again this week during _____.

If the intervention log indicated the student failed to recruit the intervention on the day of the card drawn the RA stated:

I am sorry you did not respectfully ask to get on the computer for Success Maker on ___(Day of the Week)_ you may tray again this week. Remember to follow the steps on your form and respectfully ask your teacher to get on the computer for Success Maker during _____.

_____ 8. The RA then gave the student a high five and returned them to their seat or activity

_____ 9. The RA erased the students laminated recording sheet returned the students folder and exited the room quietly.

Research Assistant Log

Date	Did the student request their intervention?	How many times did they request their intervention?	Did the teacher deliver the intervention?	Did the student earn a prize for recruiting?	Intervention Scores	Interventio Integrity

Respectful Learning Game Request Form

Remember when _____ starts

2. Raise your hand and wait for the teacher to call on you.

3. Ask your teacher, "May I please get on the computer and play Success Maker?"

4. If she says not right now wait 5 minutes

5. Raise your hand and wait for the teacher to call on you.

6. Ask your teacher, "May I please get on the computer and play Success Maker?"

7. If she says not right now then try again tomorrow.

8. Fill out your form.

Day	Time	Did I ask once?	Did I as twice?	Did my teacher practice my game with me?
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				

Teacher Intervention Log

Date	Did the student Respectfully ask to play Success Maker?	Success Maker Score	Did they meet their goal?

VITA

Mary Ann Hubbard

Candidate for the Degree of

Doctor of Philosophy

Thesis: STUDENTS SERVING AS A CUE TO INCREASE TREATMENT INTEGRITY OF TEACHER DELIVERED INTERVENTIONS

Major Field: School Psychology

Biographical:

Education:

Completed the requirements for the Doctor of Philosophy/Education in School Psychology at Oklahoma State University, Stillwater, Oklahoma in May, 2012.

Completed the requirements for the Master of Science in Psychometry at Oklahoma State University, Stillwater, OK in 2009.

Completed the requirements for the Master of Science in School Psychology at Southwestern Oklahoma State University, Weatherford, OK in 2008.

Completed the requirements for the Bachelor of Science in Psychology at Southwestern Oklahoma State University, Weatherford, OK in 2006.

Experience:

120 Hour Education Field Experiences Practicum at Sanger Ridge Elementary, Fall 2008

240 Hour Shadow Practicum at Skyline Elementary, Fall 2009-Spring2010

600 Hour School Based Practicum at Skyline Elementary, Fall 2010- Spring 2011

400 Hour Clinic Based Practicum at the School Psychology Clinic, Fall 2011-Spring 2012

Professional Memberships:

School Psychology Graduate Organization (Fall 2008 – current)
- First Year Representative – 2008-2009
- Internal Events Coordinator – 2009-2010
- President – 2010-2011

National Association of School Psychologists (Fall 2008 – current)
Oklahoma School Psychologist Association (Fall 2008 – current)
American Psychological Association (Spring 2009 – current)

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: STUDENTS SERVING AS A CUE TO INCREASE TREATMENT INTEGRITY OF TEACHER DELIVERED INTERVENTIONS

Pages in Study: 73 Candidate for the Degree of Doctor of Philosophy

Major Field: School Psychology

Scope and Method of Study: Small N Study – Non Concurrent Multiple Baseline

Findings and Conclusions:

Within the consultative framework, it is the consultant's responsibility to measure treatment integrity and ensure that treatments are being carried out with sufficient levels of integrity. Without high levels of treatment integrity a failure to respond cannot be solely attributed to the intervention but rather low integrity allows for the failure of the intervention to be potentially attributed to extemporaneous variables. The primary purpose of this study was to investigate if students can recruit academic assistance in the form of intervention delivery. Additionally, this study investigated if the effects of teaching students to recruit their intervention would allow the consultant to fade support to natural and manageable levels. Utilizing a small N, nonconcurrent multiple baseline procedure, the present study sought to expand the current treatment integrity research. Two main research questions were addressed within this study: (a) Can students provide a cue for intervention delivery which results in increased treatment integrity? (b) Can student cueing be effectively maintained with weekly consultation? Results indicated teaching students to recruit their intervention increased teacher intervention delivery in all six cases. Three of the students were able to recruit for their intervention more than 80% of the possible sessions following initial training and maintain high levels of student recruitment during weekly reinforcement. As a result, it was concluded that student recruitment can lead to increases in treatment integrity and be maintained by weekly consultant involvement.

ADVISER'S APPROVAL: Dr. Gary Duhon