

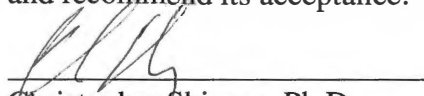
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I am submitting herewith a dissertation written by Jamie Leigh Yarbrough entitled "Efficacy of Solution-focused Brief Counseling on Math Assignment Completion and Accuracy in an Elementary School." I have examined the final paper copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.

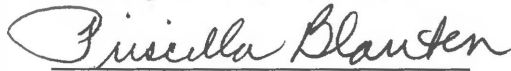


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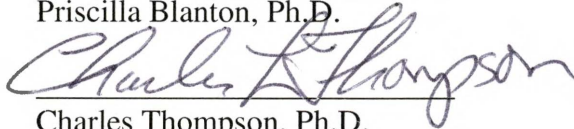
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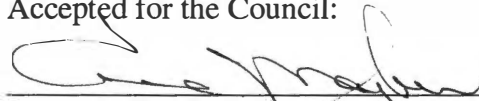


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EFFICACY OF SOLUTION-FOCUSED BRIEF COUNSELING ON MATH
ASSIGNMENT COMPLETION AND ACCURACY IN AN ELEMENTARY SCHOOL

A Dissertation

Presented for the

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Degree

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Jamie Leigh Yarbrough

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DEDICATION

This dissertation is dedicated to Matt Fearington, who always believed in me and was there when I needed him most. Thanks for your ongoing companionship, support, and comic relief. You've helped me realize that no obstacle is too difficult to overcome, and I feel blessed to be able to share my life with you.

This dissertation is also dedicated to my family. To my parents, Jim and Elaine Yarbrough, thank you for raising me to set and achieve seemingly impossible goals. Together, you have helped me to make the most out of my life. This would not have been possible without your much-needed advice and encouragement. As my older brother, Robb Yarbrough has played an influential role in my life. Thank you for always seeing me for who I really am. To my little sister, Katie Yarbrough, you've been both a role follower and, more importantly, a role model of mine. You've always balanced my personality, and I value the unique relationship we share as sisters. You will always be the one person whom I can scream at one minute and laugh with the next.

To my grandparents, aunts, uncles, and cousins, thank you all for enriching my life. I know that I am lucky to have such a wonderful family, and I am thankful for everyone.

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ABSTRACT

A multiple-baseline-across-participants design was used to evaluate the efficacy of Solution-focused Brief Counseling (SFBC) for six fifth grade students with math assignment completion problems. Weekly 30-minute sessions of SFBC for 5 weeks were sufficient to produce increases in both completion rates (from 29% completion during baseline to 79.63% during treatment) and accuracy rates (from 23.50% during baseline to 50.01% during treatment). Most increases were maintained during a 1 to 3 week follow up period. In addition, the criterion-related validity of Goal Attainment Scaling (GAS) was evaluated by comparing predicted completion and accuracy rates to actual achievement. Independent t tests between predicted and achieved scores revealed significant differences for five out of six participants (α set to .05). Thus, the validity of GAS in educational settings is questionable when predicted scores can be compared to objective measures of performance in academic settings.

TABLE OF CONTENTS

I. INTRODUCTION.....	1
Purpose.....	1
Background.....	1
Solution-Focused Theory.....	3
Solution-Focused Methods.....	5
Effectiveness of SFBC.....	7
Goal Attainment Scaling.....	11
Statement of the Problem.....	22
Rationale.....	23
Research Questions.....	24
II. METHODOLOGY.....	25
Participants.....	25
Setting.....	25
Counseling Intervention.....	26
Procedures.....	27
Design.....	28
Dependent Variables.....	29
Completion.....	29
Accuracy.....	30
Goal Attainment Scaling.....	31
Data Analysis.....	32

III. RESULTS.....	35
Assignment Completion.....	35
Assignment Accuracy.....	38
Assignment Accuracy Across Students.....	39
Goal Attainment Scaling.....	41
IV. DISCUSSION.....	47
Assignment Completion.....	47
Assignment Accuracy.....	51
Solution-Focused Counseling as an Academic Intervention.....	55
Goal Attainment Scaling.....	58
Strengths and Weaknesses.....	63
Implications for Future Research.....	65
REFERENCES.....	67
APPENDICES.....	75
Appendix A: Participant Descriptions.....	76
Appendix B: Treatment Fidelity Sheet.....	79
Appendix C: Sample Goal Attainment Scale.....	81
Appendix D: Tables and Figures.....	83
Appendix E: Form B Application.....	112
Appendix F: Parental Consent Form.....	119
Appendix G: Student Assent Form.....	122
Appendix H: Teacher Consent Form.....	124
VITA.....	126

LIST OF TABLES

Table 1. Means and Ranges of Interobserver Agreement on Accuracy Per Student....	84
Table 2. Assignment Completion Condition Means, Standard Deviations, and Effect Sizes for All Students.....	85
Table 3. Overall Assignment Completion Condition Means, Standard Deviations, and Effect Sizes.....	85
Table 4. Immediacy of Change and Level Stability for Assignment Completion Across all 6 Students.....	86
Table 5. Assignment Accuracy Condition Means, Standard Deviations, and Effect Sizes for All Students.....	87
Table 6. Overall Condition Means, Standard Deviations, and Effect Sizes for Assignment Accuracy.....	87
Table 7. Immediacy of Change and Level Stability for Assignment Accuracy Across all Six Students.....	88
Table 8. Predicted and Achieved T Scores for All Students.....	89
Table 9. Values of Rho and k for Each Week of Treatment for Predicted T Scores...	90
Table 10. Values of Rho and k for Each Week of Treatment for Achieved T Scores...	91
Table 11. Subjects by Scales Analysis of Variance for Week 1 of Treatment for Predicted T Scores.....	92
Table 12. Subjects by Scales Analysis of Variance for Week 2 of Treatment for Predicted T Scores.....	92
Table 13. Subjects by Scales Analysis of Variance for Week 3 of Treatment for Predicted T Scores.....	93

Table 14. Subjects by Scales Analysis of Variance for Week 4 of Treatment for Predicted T Scores.....	93
Table 15. Subjects by Scales Analysis of Variance for Week 5 of Treatment for Predicted T Scores.....	94
Table 16. Subjects by Scales Analysis of Variance for Week 6 of Treatment for Predicted T Scores.....	94
Table 17. Subjects by Scales Analysis of Variance for Week 7 of Treatment for Predicted T Scores.....	95
Table 18. Subjects by Scales Analysis of Variance for Week 2 of Treatment for Achieved T Scores.....	95
Table 19. Subjects by Scales Analysis of Variance for Week 3 of Treatment for Achieved T Scores.....	96
Table 20. Subjects by Scales Analysis of Variance for Week 4 of Treatment for Achieved T Scores.....	96
Table 21. Subjects by Scales Analysis of Variance for Week 5 of Treatment for Achieved T Scores.....	97
Table 22. Subjects by Scales Analysis of Variance for Week 6 of Treatment for Achieved T Scores.....	97
Table 23. Subjects by Scales Analysis of Variance for Week 7 of Treatment for Achieved T Scores.....	98

LIST OF FIGURES

Figure 1. Assignment Completion Rates Per Week Across All Students and Phases...	99
Figure 2. Assignment Accuracy Rates Per Day Across All Students and Phases.....	101
Figure 3. Enlarged Completion Graphs for Students 1, 2, and 3.....	102
Figure 4. Enlarged Completion Graphs for Students 4, 5, and 6.....	103
Figure 5. Enlarged Accuracy Graphs for Students 1, 2, and 3.....	104
Figure 6. Enlarged Accuracy Graphs for Students 4, 5, and 6.....	105
Figure 7. Predicted and Achieved Scale Scores for Completion and Accuracy for Student 1.....	106
Figure 8. Predicted and Achieved Scale Scores for Completion and Accuracy for Student 2.....	107
Figure 9. Predicted and Achieved Scale Scores for Completion and Accuracy for Student 3.....	108
Figure 10. Predicted and Achieved Scale Scores for Completion and Accuracy for Student 4.....	109
Figure 11. Predicted and Achieved Scale Scores for Completion and Accuracy for Student 5.....	110
Figure 12. Predicted and Achieved Scale Scores for Completion and Accuracy for Student 6.....	111

CHAPTER I

Introduction

Purpose

The primary purpose of this research was to investigate the effectiveness of a solution-focused brief counseling intervention in a school setting. More specifically, the intervention was evaluated in an elementary school with students who were considered capable but were not completing assignments. A secondary purpose was to evaluate the validity of goal attainment scaling, which is typically used by clients to gauge their success in meeting specific goals. Particularly, the objective was to determine the concurrent validity of the scale in an educational setting.

Background

Brief therapy interventions have become increasingly popular in recent years. A number of factors have contributed to the growing interest in brief interventions, including the recent growth in time-limited managed care, increased caseloads, and the perceived efficiency of timely interventions. Several different models of brief therapy have been developed over the past fifty years, and these differ from one another. However, there are many shared elements. Murphy (1994) identified eight conceptual guidelines of brief therapy. Specifically, most brief therapies focus on changing presenting problems rather than underlying issues. There is a time-sensitive emphasis on blending intervention and rapid change. In addition, both theories and techniques used in most brief therapies are flexible and based on the client's frame of reference. Brief therapists prefer to work primarily with those clients who are motivated to do something about their problems. They view most problems from an ecological standpoint and

believe that they are part of ineffective social patterns. Goals that brief therapists set emphasize small, measurable changes in the problems that clients face. Brief therapists accept and work with their client's perceptions and decisions. They allow clients to choose to reject certain suggestions and consider this useful communication. Lastly, most brief therapies share a present-future focus on client strengths, resources, and possibilities.

Perhaps the most effective of the brief therapies are those characterized as "behavioral," which include reality therapy, paradoxical counseling, and solution-focused brief therapy. These models have become popular because of their straightforward application to problems. They are not designed to delve into the psychodynamic underpinnings of behavior, but rather, to make effective changes in the client's overt behavior. Reality therapy, developed by William Glasser, teaches clients to take responsibility, thereby controlling their behavior, which presumably helps them get what they want in life. Paradoxical counseling strategies have elicited a large amount of interest recently. Interventions of a paradoxical nature focus on problem formation and elimination (Thompson & Rudolph, 2000). A counselor using this strategy will often prescribe the symptom with hopes that the problem will dissipate once it is brought to the client's attention. An additional brief strategy receiving significant attention for school interventions is solution-focused brief counseling (SFBC). Of all the approaches, SFBC may be best suited for school settings because of its positive focus on solutions rather than the problem, success in helping clients accomplish stated goals, reliance on rapid solutions, and use of a "built in" measure of success along the way. In addition, interventions based on the model seem appropriate for children, teachers, and parents

(Franklin, Biever, Moore, Clemons, & Scamardo, 2001). With increasing caseloads, SFBC may be one of the best solutions for delivering effective treatment in a relatively short time period.

Solution-focused brief counseling, as described by de Shazer and Molnar (1964), was developed in the mid-1960's. SFBC is an attractive intervention for school counselors and school psychologists because of its utility, focus on current behavior, and relative short-term duration (Mostert, Johnson, & Mostert, 1997; Sklare, 1997). Downing and Harrison (1992) advocated incorporating SFBC into the elementary school because the model fits the "time-conscious atmosphere" that is beginning to define modern school counseling. LaFountain, Garner, and Boldosser (1995) advised school counselors to create solution-focused groups from their current caseloads in order to free time for parent education and other necessities of the job. Mostert et al. (1997) and Sklare (1997) reported that the SFBC methods provide students with the confidence they often lack, and that counselors, themselves, reported feeling more effective when using SFBC.

Solution-Focused Theory

The theory of solution-focused brief counseling has its origins in the field of family therapy (Murphy, 1994). SFBC differs from more traditional therapy models in a number of ways. In SFBC, the therapist takes on a very directive role and shifts the focus to present/future (Thompson & Rudolph, 2000). Other conceptual themes vary from traditional therapies as well. Rhodes (1993) outlines the central tenets of SFBC in a paper that applies solution-focused ideas to school settings. He notes that several points are key to the practice of SFBC. Primarily, solution-focused therapists place an emphasis on successful exceptions to problem-focused behaviors. Presumably, problems are

always coupled with exceptions, or times when the problem occurs less frequently.

SFBC therapists explore these exceptions, with the hope that permanent solutions to the problem will be found. By highlighting the successful outcomes that the client has already achieved, the therapist helps the client learn to rely on their personal strengths rather than their misgivings. This focus significantly reduces the amount of time involved in therapy because clients can use positive behaviors that they already possess rather than engaging in the lengthy process of developing new behaviors (Downing & Harrison, 1992).

Another tenet of SFBC is that clients have not developed a vision of life without the problem. Therapists often ask clients for detailed descriptions of how life would be different if there were no problems. When describing what life would be like without the dilemma, therapists hope that the client will discover what they can do immediately to fix the problem. The underlying philosophy presumes that the therapists strive to focus on client strengths and maintain a positive emphasis during counseling, just as they do when they help clients explore successful exceptions to problem behaviors (Rhodes, 1993).

Lastly, solution- focused therapists help clients negotiate their own goals. These goals begin with very small steps and then gradually increase in complexity. Small gains in goal attainment presumably create a domino effect and serve as prototypes for more ambitious changes. Because SFBC is guided by outcomes, establishing very specific goals is central to the process and theory (Rhodes, 1993). Williams (2000) notes that the process of SFBC removes the therapist from the expert role and focuses on “empowering clients to discover their own strengths (p. 76).”

Solution-Focused Methods

SFBC therapists take on a very directive role during therapy and use very specific methods to highlight client strengths. Thompson and Rudolph (2000) have defined five basic steps to solution-focused therapy. Initially, the therapist clarifies the problem and assesses the client's motivation to change. Then the client is asked to identify unsuccessful attempts to solve the problem and the relative effectiveness of these attempted solutions. Once this has been accomplished, the therapist asks the client to identify exceptions to the problem, or times when the problem was not apparent. When the client is able to identify several exceptions, the therapist begins to use the specific methods of SFBC to encourage the client to create more exceptions to the rule.

Sklare (1997) and Thompson and Rudolph (2000), describe specific methods that solution-focused counselors utilize when working with clients. One popular method is the "miracle question." Clients are asked to pretend that a miracle has occurred and that everything in their life is the way they would like it to be. The therapist then uses this metaphor to identify specific behaviors and concrete outcomes that will be useful to help the client actually achieve the miracle. Nickerson (1995) states that the miracle question "puts into action the Ericksonian principle that clients are better able to change (p. 132)" when they are able to envision what life will be like after the change has occurred.

Another SFBC technique is often referred to as "cheerleading." Simply stated, the therapist acts as the client's cheerleader by complimenting and encouraging them to continue to do what is working in their lives. Similar to cheerleading is the concept of positive blame. When clients are able to identify something positive that they accomplished, therapists ask "Now how in the world did you manage to do that?" Using

positive blame motivates the resistant client to continue to “amuse” the counselor with the progress they are making. It also creates a sense of accomplishment and efficiency in clients who are often lacking in self-esteem. In addition, Sklare (1997) notes that positive blame gives clients the sense of ownership that they need to increase their prosocial behaviors.

Solution-focused counselors use scaling to determine the extent to which clients meet their goals. Clients are asked to identify the current status of the problem solution on a scale of one to ten, with one being low and ten being high. Counselors aim for a 10% improvement each week, and ask clients to identify specific ways that they can move up one point on the scale. Sklare (1997) mentions that scaling is an excellent way to set a baseline with which to measure progress. Once clients recognize what they need to do to achieve a 10% improvement, counselors then question them to identify possible barriers to achieving their goals. This method has been termed “flagging the minefield.” It is helpful because it encourages clients to be realistic about what they need to accomplish and it often prevents clients from becoming discouraged. Finally, SFBC counselors provide a written message to the client that they may take home from each session. This process is critical to the practice of SFBC because it serves to positively reinforce the goals and changes that the counselor and client have identified. Typically, these messages contain at least three compliments to the client and a bridging statement to the tasks the client needs to accomplish to raise their scaled score by 10% (Thompson & Rudolph, 2000).

As with all counseling methods, a clear understanding of both theory and process is critical to successful practice. Solution-focused theory is relatively easy to understand.

Because SFBC methods are directive and specific, it seems that research involving SFBC could be rigorous and easy to design. Although SFBC has been practiced for nearly 40 years, there is still a lack of strong empirical support for the method. Many studies have investigated the effectiveness of SFBC in various settings, but they are characterized by methodological flaws. For example, some studies used only client self-report as a dependent variable (Franklin et al, 2001; Littrell, Malia, & Vanderwood, 1995), and do not specify a specific area of treatment concern, but use broad outcome measures (Franklin et. al, 2001; Corcoran & Stephenson, 2000). The following section is presented in review of the existing literature describing the use of SFBC in school settings.

Effectiveness of SFBC

Although there is not a large amount of existing literature describing the effectiveness of SFBC applied to school settings, the studies that exist cover a wide range of settings and methods. Both individual sessions and groups have been conducted, and the settings vary from elementary school to high school. The following section focuses on studies investigating the use of SFBC with individuals in school settings.

Franklin et al. (2001) used AB single case designs to examine the effectiveness of SFBC within a school setting. Children who participated in this study were referred because of both classroom behavior problems and learning disabilities. Results of seven case studies are presented. Each child received between five and ten sessions of solution-focused therapy. Conners' Teacher Rating Scales (Conners, 1990) were used to evaluate changes in the children's behavior. The authors indicated that five out of the seven children experienced significant improvements in classroom behavior. The authors indicate that SFBC shows promise as a helpful method, yet discuss a number of flaws in

their research. Specifically, they note that in several of the cases, the students showed a positive trend towards improvement during the baseline period. This makes interpretation of data challenging and threatens the internal validity of the study, because positive changes did not coexist with the introduction of the intervention. Although two different teachers rated each student on problem behaviors, the authors failed to report inter-rater reliability. According to the results, different teachers rated the same children very differently. Lastly, the authors mention reactivity to the researchers as a possible source of bias. They advise that teachers who are trained in the model should be used in future studies.

Littrell et al. (1995) applied the model to a high school setting. Three school counselors were trained in brief counseling, and 61 students received counseling sessions according to three conditions. One approach was a problem-focused method, with task. A second approach was a problem-focused method, without task. Lastly, some students received a solution-focused approach, with task. Both problem-focused methods were based on the four- step model developed by Watzlawick, Weakland, and Fisch (1974). In this approach, the student and counselor discussed a problem to be addressed during therapy. Next, the student's previous solutions to the problem were evaluated. The counselor and student would then set a goal, and the student would be assigned a task related to the goal which should be completed by the next therapy session. The problem-focused method without task was identical, except that the student was not assigned a task to complete. The solution-focused method was based on the same conceptualizations; however, the steps were condensed and goal setting was the main focus of the session. Students were evaluated by modified instruments developed to

determine the extent to which they had met their counseling goals. The original instruments were developed by Weakland, Fisch, Watzlawick, and Bodin (1974) and de Shazer (1985), but were revised by the authors of the study to measure whether students differed in achieving their goals based on which counseling method they received. Questions on the survey asked the student to report to what extent they had fulfilled the goals set during counseling. Results showed that all three approaches were successful in helping students achieve their goals, though the solution-focused approach had the highest mean. However, the mean was not significantly different from the other means. The authors indicate that the results of this study provide support for all approaches of brief counseling in school settings. However, this study was also characterized by several methodological flaws, such as a lack of information collected at pretest, the use of non-standardized measures, and a small sample size (Littrell et al., 1995). Most importantly, the authors did not use observable, behavioral dependent measures. The results were based primarily on student self-report of goal attainment.

Mostert et al. (1997) conducted a qualitative study to determine school counselors' attitudes towards the use of SFBC. Five counselors who attended a training session agreed to participate in the study. They were further trained in the method, and were then asked to incorporate the model into their day to day work. The investigators conducted follow-up interviews using a semi-structured questionnaire to evaluate the long term effects of their training. Results indicated that the school counselors perceived the overall efficacy as "very helpful (p. 11)." They reported that SFBC was a practical approach for the school setting. It produced immediate results and was regarded positively by their students. All five counselors noted "visible, viable, and desirable

affects of the SFBC model in use (p. 23)” with their students. Lastly, they reported benefiting professionally from the model in terms of time management and professional direction. In their discussion, the authors point that these results support the use of SFBC in school settings. While these interview data sound promising, the study was characterized by a lack of methodological rigor to ensure control of extraneous variables and competing explanations. In addition, only five school counselors were included in the study. There was no examination of participants’ pretreatment personal characteristics or opinions, which might have influenced their conclusions. For example, some counselors see brief therapy as time-efficient and problem-focused; others believe that counselors using brief therapy models overlook feelings and emotions and do not get to the root of the problem. Because participant’s personal opinions of brief therapy were not documented, there is no way of knowing how their preconceptions might have influenced the results.

In a recent study, Corcoran and Stephenson (2000) focused on the effectiveness of SFBC with children with behavior problems. Students from elementary, middle, and high school settings were referred by school counselors to participate in the study. Masters-level social work students provided solution-focused counseling to 136 children in a university counseling center. Dependent variables and children’s progress as noted by parents were tested with the Feelings, Attitudes, and Behaviors Scale for Children (F-ABC) (Beitchman, 1996) and The Conners’ Parent Rating Scale (Conners, 1990). The F-ABC is made up of six scales which include conduct problems, self image, worry, negative peer relations, antisocial attitudes, and lying. A pretest-posttest design was employed. Results yielded significant differences on the parent ratings. However, only

two out of six subscales (conduct problems and self image) on the F-ABC were significantly different from pretest to posttest. In addition, the perceived significance of the children's conduct problems reflected an unexpected increase rather than a decrease. The authors speculate that this increase might have been related to the nature of SFBC. Perhaps the children were unaware of their problems and the behavioral focus of therapy made them more cognizant, thus rating themselves higher on the posttest. Despite these contradictory findings, the authors note that these results offer beginning support to the SFBC model. They do mention that several limitations might have influenced the data, including both attrition and measurement problems, and note that though parents saw an increase in children's prosocial behaviors, children themselves did not. The authors speculate that the lack of change might be due to confusion on the F-ABC, because some of the children might have been too young to fully understand the questionnaire. Also, because the study relied on self-report, perhaps children were not honest. Though there were methodological limitations, the authors note that their results provide a contribution to the limited knowledge of SFBC applied in school settings.

As is apparent, many of these studies use indirect measures of behavior, such as global constructs or self-report. A number of studies have used outcomes more closely tied to behaviors, specifically goal attainment scales (GAS). Even though goal attainment scales are based on behaviors, they often rely on self-report from the client or judgment from a third party, such as a counselor or researcher.

Goal Attainment Scaling

Goal attainment scaling was originally described by Kiresuk and Sherman as a method of evaluating both counseling and intervention programs (Kiresuk and Sherman,

1968). The process involves setting several goals for each individual. Goals are weighted in relation to the level of importance to the client. Typically, five different levels of achieving each goal are set, and a score ranging from -2 to +2 is associated with each level. The score of 0 is assigned to the level of an acceptable outcome. The negative scores (-1, -2) represent achievement that is under the acceptable level. The positive scores (+1, +2) signify achievement that is superior to the acceptable outcome. After goals have been scored, each score can be converted to a standardized T score with a mean of 50 and a standard deviation of 10. These standardized scores can then be compared to scores of other clients using goal attainment scaling, or by the same individual across weeks of treatment. Kiresuk et al. (1994) recommend the following formula to calculate standard T scores for the GAS:

$$T = 50 + \frac{10 \sum w_i x_i}{\sqrt{(1-\rho) \sum w_i^2 + \rho (\sum w_i)^2}} \quad (1)$$

In this formula, x_i is the scale value for the i th scale on a GAS, w_i is the numerical weight assigned to that specific scale, and ρ is the weighted average intercorrelation of the scale scores. This formula has been the subject of criticism for two reasons. Primarily, some have questioned the use of different weights for each of the scales (Seaberg & Gillespie, 1977; Nunnally, 1978). Following Cardillo and Smith's (1994) recommendations, differential numerical weights for GAS will not be used in this study. When all scales are weighted equally, the formula reduces to:

$$T = 50 + \frac{10\sum x_i}{\sqrt{n - n\rho + n^2\rho}} \quad (2)$$

In this formula, n is equal to the number of scales on the GAS. Cardillo and Smith have rewritten this equation as:

$$T = 50 + k\sum x_i \quad (3)$$

In this reduction, k is a constant represented by the following formula:

$$k = \frac{10}{\sqrt{n - n\rho + n^2\rho}} \quad (4)$$

Another source of conflict concerning these formulas is the value of ρ , the weighted average intercorrelation of the scale scores. Kiresuk and Sherman (1968) estimate that $\rho = .30$ in most cases. Indeed, several researchers have found $\rho = .30$ (Kiresuk & Sherman, 1977; Wallin, 1974, as cited in Kiresuk et al., 1994). However,

other researchers have found different values (McGaghie & Menges, 1975; Shrout & Fleiss, 1979). Cardillo and Smith (1994) conclude that using the value of .30 “may be appropriate for some applications but unrealistic for others (p. 196).” Because of the uncertainty, ρ will be calculated for this study. Cardillo and Smith (1994) recommend using a subjects-by-scales analysis of variance (ANOVA) to determine ρ . Values taken from the ANOVA table are used in the following formula to calculate the interclass correlation. The formula is:

$$r_{ij} = \frac{MS_B - MS_W}{MS_B + (k + 1)MS_W} \quad (5)$$

In this formula, r_{ij} is the average scale intercorrelation, MS_B is the between subjects mean square term, MS_W is the within subjects mean square term, and k is the number of scales per subject. For this study, ρ will be calculated each week that data is collected.

Because it is difficult to demonstrate changes in targeted outcomes, Becker, Stuijbergen, Rogers, and Timmerman (2000) recommend using GAS as one measurement (of those outcomes.) Similarly, Ottenbacher and Cusick (1990) recommend GAS as one method of program evaluation that has potential for many applied fields and note that it has already proved to be successful in many cases when used in conjunction with psychotherapy, mental health, education, mental retardation, and general rehabilitation. Emmerson and Neely (1988) state that GAS is “an ingeniously simple

method of data collection appropriately flexible enough for use in studies dealing with the effects of differing types of treatments or programs upon a given population (p. 262).” However, others have criticized the formula and the process (MacKay & Lundie, 1998; MacKay, Somerville, & Lundie, 1996).

Many researchers have encountered difficulty attempting to establish the psychometric properties of GAS. Studies that contribute original data on the content validity, construct validity, and criterion-related validity of GAS are rare and when available, are problematic. The results are often contradictory and difficult to interpret. Kiresuk et al. (1994) note that many studies differ “markedly both in quality and in basic assumptions about what constitutes GAS (p. 243).” Cardillo and Smith (1994) argue that GAS is best used to report client’s perceived ability to change, not the actual behavioral change associated with outcome measures (e.g., weight loss, increase in grades). Accordingly, the perceived ability to change (i.e., amount of change relative to what was expected) and the actual outcome measures represent different constructs, confounding attempts to establish validity. Even so, a number of researchers have addressed the goal of establishing validity, as reviewed below.

In a review of validity issues, Cardillo and Smith (1994) follow the suggestion of measurement experts such as Cronbach and Meehl (1955) and Cronbach (1971), who consider content and criterion-related validity to be subsumed under the overarching category of “construct validity.” So, attempts to establish content and criterion-related validity ultimately speak to the ability of a measure to assess the construct under scrutiny. Typically, GAS researchers have assessed content validity by determining the extent to which the GAS scales fully reflect the domain of content that they were designed to

measure. That is, in mental health settings, the GAS is said to have content validity when the treatment goals accurately reflect the mental health problems of the client (Kiresuk et al., 1994). Many investigators have found content validity of GAS to be high in mental health settings (Audette, 1974; Baxter & Beaulieu, 1974; Jones & Garwick, 1976a; Jones & Garwick, 1976b, as cited in Kiresuk et al., 1994; Woodward, Santa-Barbara, Levin, & Epstein, 1978), but these studies are characterized by methodological flaws. Many of the studies focused on the extent to which goals for an individual client were appropriate for that client. Though results indicated that 78-97% of goals were rated relevant, generalizability is limited by methodological problems. For example, in some cases, the therapist and client did not work collaboratively to set the original goals (Kiresuk et al., 1994). Working together to set goals is essential to the GAS process. Another problem with these studies is that goals were not determined to be relevant until the end of the treatment period. Because it is possible that goals might have changed during treatment, data need to be collected throughout the treatment period, rather than only at the end of the intervention. Thus, though the results of these studies are positive, the content validity of GAS is still uncertain and may depend upon target behaviors and the type of setting in which GAS is used. In addition, Kiresuk et al. (1994) point out that though content validity may be a necessary component of the test validation process, it is not sufficient by itself. They state that “it is the use of a test score that is validated, not the test content (p. 251).” Thus, researchers should focus their efforts on other types of validity.

Other studies designed to investigate “construct validity” focus on determining how well GAS scores relate to the construct under consideration. Presumably, the person

who sets the goals considers all of the client's characteristics and treatment variables when constructing the GAS, which in turn, contributes to the construct validity of the entire scale. However, researchers have experienced difficulty determining exactly what construct the GAS score actually measures. As previously noted, the GAS presumably assesses perceived change; in fact, according to Kiresuk et al. (1994), the GAS score provides a measure of treatment induced change (with many applications). Assuming expected outcomes are achieved, GAS scores should have accurately predicted the change that occurred, thus supporting construct validity. Kiresuk et al. (1994) note that applications of GAS "demonstrate that GAS does provide an outcome score consistent both with the assumptions of the technique and with present beliefs about the effectiveness of mental health treatment (p. 264)."

Although the GAS score may be considered a measure of treatment induced change, it should not be conceptualized as an indicator of post-treatment status or functioning. Even so, it can be used to compare different treatments (e.g., see Gembol, 1981; Mistilis, 1978, as cited in Kiresuk et al., 1994; Austin, Liberman, King, & DeRisi, 1976; Greenberg & Webster, 1982), and for comparing the GAS score to other normative measures of post-treatment outcome and ratings of improvement (Gembol, 1981, as cited in Kiresuk et al., 1994; Johnson & Greenberg, 1985; Maher & Barback, 1984). But, results are not consistent; some studies show high correlations between GAS and outcomes, and others do not.

Criterion-related studies compare the GAS score to some other outcome measure which serves as an indicator of what the GAS is attempting to measure. For example, Garwick (1974a, as cited in Kiresuk et al., 1994) reported correlations between GAS

scores of clients being treated with psychiatric medications and ratings on the Brief Psychiatric Rating Scale. All correlations fell below $r = .30$.

In a more recent attempt to establish the psychometric properties of GAS for use in assessment of short-term psychotherapy, Shefler, Canetti, and Wiseman (2001) constructed scales for 33 patients on five dimensions. These categories were self-esteem, severity of symptoms, same-sex friendships, romantic relationships, and work performance. Clients received 12 sessions of time-limited therapy, and judges rated the clients on the various scales. Convergent validity was then determined by correlating the scales with the Health-Sickness Rating Scale, the Target Complaints Scale, and the Brief Symptom Inventory. Their results confirm the convergent validity of GAS, in part because their scores were not based solely on client self-report. However, because this study did not rely on observable, measurable behaviors, it is difficult to accept results conclusively. In addition, judges rated the clients on GAS, rather than using client's ratings. Because GAS was developed to help clients track their own goal attainment, it may benefit them less if they are unable to rate themselves on their own goals. Obviously, measurable goals need to be set for clients to rate themselves, and then these goals should be compared to real outcome measures.

Kiresuk et al. (1994) address several problems that plague criterion-related studies. Primarily, it is difficult to determine exactly what the GAS outcome measures should be. Because the GAS score provides an estimate of the client's perceived ability to change, rather than the change itself, finding a corresponding measure with which to compare the score is more difficult. Many studies originate in the mental health literature and focus on mental health outcomes. Because many mental health goals are stated in

vague terms, researchers find it difficult to determine specific operationalizations of the GAS measures (as criterion for determining validity). Most of the studies attempting to establish the criterion-related validity of GAS have been plagued by poor operationalizations. On the other hand, Kiresuk et al. (1994) reviewed several studies that were free of these three problems (Mauger, Stolberg, Audette, & Simonini, 1974; Jacobs & Cytrynbaum, 1977; Santa-Barbara, Woodward, Levin, Streiner, Goodman, & Epstein, 1977; Simons, Morton, Wade, & McSharry, 1978). They observed GAS scores that were significantly correlated with other outcome criteria. However, these studies contained other types of methodological flaws (e.g. selection of participants, clients not setting goals themselves, problematic outcome measures, timing of outcome measures). Even though Sherman (1974, as cited in Kiresuk et. al., 1994), argued that establishing criterion-related validity may not be defensible in mental health settings, in part because of the vagueness associated with goal setting, fixed criteria such as grades are available to school personnel to compare the GAS score. Other educational outcomes of interest also can be made objective. Thus, establishing criterion-related validity seems to be a reasonable goal for educators.

In summary, the majority of studies investigating the psychometric properties of GAS failed to follow sound methodological considerations. For example, only ten of the 41 studies reviewed by Cytrynbaum, Ginath, Birdwell, and Brandt (1979) reported baseline levels of goal attainment. Most reliability studies were conducted by correlating goal attainment ratings of different judges across time, and were based on interviews only; thus, judges typically relied solely on self-report of clients. Validity studies are problematic as well. Cytrynbaum et al. (1979) state that many validity studies are

inconsistent with “the very essence of GAS, namely its being so highly individualized both in goal selection and in the projected attainment levels (p. 27).” Because GAS is uniquely tailored to each client, it is difficult to compare the measured outcomes with outcomes measured by other methods. Concurrent validity studies report correlations between the GAS score and other outcomes, for example, the MMPI, achievement tests, self-report symptom checklists, and independent behavior ratings by teachers and parents (Kiresuk et al., 1994). Often, it is difficult to directly compare goal achievement to standardized measures because goals are vaguely stated. Mixed results are the rule. Several studies report low correlations, and one study reported a negative correlation. Because many of the studies are plagued by serious procedural and methodological errors, results are difficult to interpret. The validity of GAS is still questionable, despite extensive research into the area.

As previously noted, Goal Attainment Scaling may facilitate the counseling process (LaFerriere & Calsyn, 1978; Smith, 1976; Yarbrough & Thompson, 2002). For example, two studies report the effectiveness of GAS for counseling outcomes. LaFerriere and Calsyn (1978) investigated the effectiveness of Goal Attainment Scaling when combined with short term therapy. A group of clients receiving short-term therapy established goal attainment scales to track their therapy goals. This group was then compared to a group of clients receiving the same type of therapy, minus the GAS. Posttests of anxiety, depression, and self-esteem revealed that the goal-setting group yielded significantly more positive outcomes. These results strongly support the use of GAS as an adjunct to counseling, but they do not allow a comparison of behavioral outcomes directly to GAS scores.

In the second study, Smith (1976) divided twenty subjects into an experimental or control group. The experimental group received counseling with GAS, the control group received counseling by itself. Outcomes were measured by the Personal Orientation Inventory and the Consumer Satisfaction Questionnaire, both self-report measures. Results indicated that the experimental group scored significantly higher on both inventories. Results of these two studies indicate that GAS is a useful aid to the individual counseling process. Similarly, Gatz, Tyler, and Pargament (1978) found that GAS was helpful when used with group counseling.

There is little research examining the use of GAS in public schools. Hegion, Fish, and Grace (1974) used GAS with children who were selected for Special Education services. Goals were set for children in specific areas of academic improvement, including reading level, math level, and vocabulary level. Goals concerning classroom behavior were also included. The authors note that GAS was worthwhile and improved the morale of children in the study. GAS was also used in a Canadian remedial nursery school (Miller, 1975, as cited in Kiresuk et al., 1994) and to evaluate special education programs in Iowa (Howe & Fitzgerald, 1976, as cited in Kiresuk et al., 1994). There are no other published reports of using GAS with children in the classroom.

Few studies have examined the utility of goal attainment scaling when coupled with solution-focused counseling in school settings. Yarbrough and Thompson (2002) compared the effectiveness of SFBC to reality therapy, as applied to reducing off-task behaviors in the classroom. They used GAS to measure the success of both counseling techniques, but relied on the self-report of the children and teachers. Several of the goals required homework completion; however self-reports and teacher reports were not

compared to actual completion rates in the classroom. The present study extends this line of research and will compare children's reports of school success in the goal attainment scale with actual success rates measured by the teacher. The inclusion of GAS in this study will serve two purposes. Primarily, it will function as an adjunct to counseling, to further focus and encourage students to attain higher levels of homework completion. Secondly, student's self-reports will be compared to actual outcome measures, in order to investigate the criterion-related validity of the GAS.

In summary, though researchers have investigated correlations between GAS scaling and related outcome measures, the relationship between GAS scaling and actual behavioral measures has rarely been reported in empirical literature, perhaps because psychometrically robust criterion measures are difficult to operationalize and assess. Poorly chosen measures may result in a low correlation between the GAS and the chosen measure. Obviously, when the reliability of the criterion is low, a ceiling effect reduces the resulting validity coefficient.

Statement of the Problem

Researchers have found preliminary support for the efficacy of solution-focused brief counseling in school settings (Cocoran & Stephenson, 2000; Franklin et al., 2001; Littrell et al., 1995; Mostert et al., 1997). However, the existing research contains many limitations which make interpretation and generalization difficult. Therefore, the purpose of the present study is to investigate the effectiveness of SFBC in schools by implementing a sound experimental design, one that addresses the limitations of previous studies.

Kiresuk et al. (1994) have recommended the use of goal attainment scaling in educational settings. However, no studies have evaluated the validity of goal attainment scaling in school settings, using academic goals. Consequently, the present study is designed to gather validity data.

Rationale

Although the benefits of using SFBC in school settings seem obvious to some, existing research is not without limitations and the empirical support for direct improvement of specific goals is not robust. The effectiveness of SFBC needs to be examined using experimental procedures (Franklin et al., 2001). Most of the available studies relied on the use of student self-report to evaluate outcomes and goal attainment (Corcoran & Stephenson, 2000; LaFountain & Garner, 1996; LaFountain, Garner, & Ellason, 1996; Mostert et al., 1997; Shechtman, Gilat, Fos, & Flasher, 1996; Zinck & Littrell, 2000). These measures are susceptible to bias, testing effects, and testing by treatment interaction effects. Larger-scale studies were often negatively affected by attrition (LaFountain & Garner, 1996; LaFountain et al. 1996; Littrell et al. 1995). For example, Corcoran and Stephenson (2000) lost 58.8% of their participants before the end of the study, making results suspect. Finally, the studies using single-case designs also contain methodological limitations, which make generalization to larger populations difficult. For example, although AB designs with multiple replications provide some positive support, the findings were somewhat equivocal (see Franklin et al. 2001).

Obviously, there is a need for sound empirical support for SFBC. For example, progress should be assessed using educationally relevant goals that are verifiable and measure target behaviors directly. Though working in the confines of public schools can

make methodological rigor difficult to achieve, researchers should focus on exerting more control over both their measures, their research designs, and on operationalizing problems better. This study will address some of the limitations of previous research by using a rigorous multiple-baseline-across-participants design. In addition, all children selected for the study will exhibit the same problem, allowing control of many extraneous variables. Finally, the design will allow an estimate of the concurrent validity of the goal attainment scale in an educational setting by comparing self reports of student's perceived change to actual academic outcome measures.

Research Questions

1. Do math assignment completion rates of elementary-aged children increase as a function of solution-focused brief counseling?
2. Do math assignment accuracy rates of elementary-aged children increase as a function of solution-focused brief counseling?
3. What is the relationship between perceived change based on self-reports of operationalized goal attainment and actual completion and accuracy rates? That is, do children's estimates of perceived change accurately represent the extent to which they achieve their classroom and homework goals each week?

CHAPTER II

Methodology

Participants

Participants in this study were six students from an elementary school in a metropolitan county in East Tennessee. Three male and three female students from the fifth grade were selected to participate based on several criteria and teacher recommendation. All six students demonstrated noncompliant behavior; that is, they returned less than 60% of their assignments for three consecutive weeks prior to the baseline phase. The six participants were African American and came from low income families; they ranged from 10 to 11 years of age. Although all were failing the math course at the time the study began, their teachers agreed that all students were capable of completing the math work accurately. More detail about each student is provided in Appendix A.

Setting

The study took place in an urban, public elementary school serving primarily lower and middle class families. The students came from three different classrooms. Four of the six students were enrolled in the 5th grade general math class (Students 1, 2, 5, and 6). Student 3 was enrolled in the lower level math class (4th grade level). Student 4 was enrolled in the 5th grade advanced math class. Counseling sessions were conducted in a private room on school grounds. A total of three different teachers cooperated during the study.

This study was conducted during the fall semester of the 2002-2003 school year. Baseline data collection began in mid-September. Baseline, treatment, and follow-up data were collected until the Thanksgiving break in late November of 2002.

Counseling Intervention

There are certain critical components in SFBC. Sessions were designed to include use of eight specific steps to encourage assignment completion. Due to the unpredictable nature of counseling sessions and individual differences between children, it was not possible to follow a specific script in every session. However, the counselor used at least six of the following eight steps in each session. First, the counselor asked the client to rate the severity of the problem on a scale of 1- 10. Next, the client was asked to describe what needed to happen to achieve an improvement of at least 10% by the following week. The miracle question was asked in most sessions, and the client was asked to describe times in their life when the miracle had already happened to some extent. Cheerleading and positive blame were used to positively reinforce goal achievement. In addition, the counselor “flagged the minefield,” or asked the client to think of things that might have prevented achievement of goals. Lastly, the counselor gave the client a written message containing three compliments and a bridging statement to the tasks that the client must have accomplished by the following week. These specific components are listed on the Treatment Fidelity sheet in Appendix A.

To determine treatment integrity, sessions were audiotaped. The primary counselor completed a Treatment Fidelity sheet for every session conducted. A collaborator listened to 20% of the sessions and also completed a Treatment Fidelity sheet. Interobserver agreement was calculated by a formula recommended by House,

House, and Campbell (1981). In this formula, the number of agreements on occurrence is divided by the number of agreements on occurrence plus the number of disagreements on occurrence. The resulting number is multiplied by 100 to produce a percentage.

Interobserver agreements for treatment fidelity ranged from 75% to 100%. The average interobserver agreement was 96.88%.

House et al. (1981) recommend general guidelines to use when interpreting interobserver agreements. Agreement data should be collected from at least 20% of sessions conducted. Also, these data should be collected across all sessions conducted rather than consecutive sessions. Lastly, agreement of at least 80% is considered acceptable for research purposes. The current study followed all of these guidelines when collecting and calculating interobserver agreements.

Procedures

During the baseline period, the percentage of completed classroom and homework assignments in math was recorded for all students. All assignments were graded to yield an accuracy percentage. These students received individual solution-focused counseling from the principal researcher. Counseling sessions lasted 30 minutes and each student received one session per week (Mondays) for a 5 week period.

During the first session, students were interviewed to determine specific goals related to homework completion. Working in collaboration with the student and teacher, the counselor developed goal attainment scales for the students. Students were asked to complete the scales each week during their sessions. Student's self-reports of math assignment completion were compared to the actual number of assignments turned in to

the teacher. In addition, their self-reports of accuracy were compared to actual accuracy rates that were obtained.

The counselor was a fourth-year female doctoral student in School Psychology who holds a Master's degree in Mental Health Counseling; she served as the counselor for all six students. She had specific training and experience in solution-focused brief counseling.

Design

A multiple-baseline-across-participants design was used in this study. Baseline data collection commenced for all participants simultaneously. After a baseline period of 3 weeks, Students 1 and 2 began treatment. The following week, Students 3 and 4 began treatment. Students 5 and 6 entered the treatment phase after one additional week of baseline. Thus, the intervention was staggered across 3 weeks, with two new students beginning every additional week. Each child received five sessions of SFBC, and the entire treatment phase of the study lasted 7 weeks. Baseline periods ranged from 3 to 5 weeks, due to the staggered design of the study.

After the first pair of students had completed the treatment phase, follow-up data was collected until the end of the study. Due to the staggered design of the study, differing levels of follow-up data were collected for each child. Follow up periods ranged from 1 to 3 weeks.

One modification was made to the study in the case of Student 3. This student was absent for the first 4 days of Week 9, preventing him from receiving his treatment session on Monday. Because he had missed a substantial portion of the week and had a significant amount of makeup work to complete, his treatment was postponed until the

following week. This postponement caused his treatment to last 1 week longer than originally planned. However, he still received five sessions of solution-focused counseling, as did all the other students in the study.

The three teachers collected and saved all math assignments completed by the participants. Math assignments were defined as any independent math task assigned by the teacher. This included all classwork, homework, quizzes, tests, and presentations. On a weekly basis, the counselor copied the collected assignments and used them to determine completion and accuracy rates. All teachers also provided a copy of their weekly lesson plans.

Dependent Variables

Completion

To measure assignment completion, the total number of completed assignments from each student was divided by the total number of assignments. This number was multiplied by 100 to yield a percentage. Percentages of completed math assignments were graphed and visually examined for effectiveness. Assignments were considered complete if the student attempted to answer the problems and had returned the assignment to the teacher. Completion rates were calculated individually for each participant. In general, completion was calculated on a weekly basis, i.e. 5 days per week.

Baseline data collection commenced on a Monday. During the baseline phase for each student, weekly completion rates were calculated from all work completed from Monday- Friday. However, students were not able to receive treatment until after math class the first Monday of treatment. Therefore, the work from that Monday was added

into the baseline data from the previous week and was calculated into the baseline percentage. Following the commencement of treatment, weekly completion rates included the work completed from Tuesday through the following Monday. Therefore, the last baseline data point for all six students represents a 6 day week. Similarly, the very last data point (during follow up phase) for all six students represents a 4 day week (Tuesday- Friday).

A collaborator determined completion rates by comparing completed assignments to teacher lesson plans on 20% of the weeks across the study. Interobserver agreement was calculated using the same procedure that was utilized to determine treatment fidelity. Agreements ranged from 97 to 100%. Mean interobserver agreement was 99%.

Accuracy

Accuracy was defined as the number of problems completed correctly divided by the total number of problems per assignment. This number was multiplied by 100 to yield a percentage. Problems were considered incorrect if the wrong answer was provided, if they were left blank, or if they were partially completed. In some cases, teachers assigned subjective work that could not be graded by this method. When this occurred, those assignments were included in the completion score but were not graded for accuracy.

A number of operational definitions of “incorrectness” could have been used to determine accuracy. The decision to use an inclusive definition provides a conservative estimate of accuracy because it includes assignments/ problems never attempted. On the other hand, a less inclusive operationalization of accuracy may have inaccurately inflated performance indicators (e.g. phase means). Although neither operationalization could be

considered incorrect, the more inclusive definition provides a reflection of performance more consistent with grading strategies teachers use. Therefore, the inclusive method was chosen to enhance ecological validity.

A collaborator randomly selected 20% of each student's work to grade independently. Agreements ranged from 80 to 100%. Mean interobserver agreement was 96.36%. Agreements are listed per child in Table 1 (All tables and figures are located in Appendix C).

Goal Attainment Scaling

Each child provided a weekly prediction of his/ her achievement on two scales. On one scale, a weekly prediction of math assignment completion rates was obtained; on the other, a weekly prediction of accuracy rates on math assignments was obtained. A sample goal attainment scale can be found in Appendix B. The scale for completion included the children's predictions of the percent of assignments they would complete each week. Before asking the children to complete this task, the counselor explained how percentages were calculated and made sure that the children understood what each level of the scale meant. The scale for accuracy included the children's predictions of their weekly grade in math. The scale contained five different levels of grades, A, B, C, D, and U, which corresponded to the grading system used by the school. The children said they understood that an A was 93-100%, B was 85-92%, C was 77-84%, D was 70-77%, and U was 0-69%. However, the objective method we used to determine accuracy was not explained to the children prior to having them predict their accuracy. This limitation will be discussed in further detail in Chapter 4.

Data Analysis

Completion and accuracy data were graphed. Means for completion and accuracy were computed by adding the percentages within each condition and dividing by the total number of data points within that condition. Computations were conducted for each student individually. An overall condition mean was also computed for each dependent variable across all phases of the study.

Effect sizes were calculated using a formula recommended by Busk and Serlin (1992). Specifically, the absolute value of the difference between condition means was divided by the baseline standard deviation. For example, to compute the overall effect size between baseline and treatment conditions for completion, the baseline condition mean was subtracted from the treatment condition mean. The resulting number was then divided by the standard deviation of the baseline phase. This formula calculates effect size without making assumptions concerning population distribution and homogeneity of variance and has been used in studies with similar designs (e.g. Weiner, Sheridan, and Jenson, 1998).

Cohen (1988) offered guidelines to use when interpreting effect size. Specifically, he suggested that effect sizes of .20 be considered small, .50 medium, and .80 large. Effect sizes were used in this study to determine the magnitude of difference between experimental phases.

The initial impact of the intervention was determined by examining the immediacy of change, i.e. the change between adjacent conditions. This number was determined by calculating the difference between the value of the last baseline data point and the first treatment data point. Following guidelines suggested by Weiner, Sheridan,

and Jenson (1998) and Tawney and Gast (1984), larger positive differences indicate that immediate change is strong.

Level Stability was assessed to ascertain whether or not experimental control could be established in each phase of the study. Condition means were calculated for each student and graphed parallel to the X axis. If 80% of the data points fell within a 20% range of the mean level, data were considered stable (Weiner et al., 1998, Tawney & Gast, 1984). In conditions where more than five data points existed, a 15% criterion was used to determine level stability (Weiner et al., 1998).

T scores were calculated from the Goal Attainment Scales to determine whether or not significant changes occurred during the treatment phase. To calculate T scores, this study used the reduced formula recommended by Cardillo and Smith (1994), Equation 3. This formula also required the calculation of the constant k and the interclass correlation, ρ . Equation 4 was used to compute weekly values of k . Because we chose to determine ρ each week rather than use the conventional value of .30, a one-way between-subjects ANOVA was calculated for each week of data collection (all 7 weeks of the treatment phase). Values from the ANOVA table were then used to compute the weekly value of ρ , using equation 5.

Every week of treatment, the child's predicted T scores were calculated. To compute predicted T scores, the predicted scale scores were used in the intermediate steps (ANOVAS, calculation of ρ , calculation of k). Actual achieved T scores were also calculated for each student every treatment week by using completion and accuracy rates. After the students' level on the scale was determined, achieved scale scores were used to calculate six ANOVAS. However, during Week 1, the denominator term in the ANOVA

was zero, as a function of the particular juxtaposition of achieved accuracy scale scores for two students. Consequently, calculation of the ANOVA was impossible. Thus, the conventional values of $\rho = .30$ and $k = 6.20$ were used to calculate T scores for that week. For all other weeks, achieved ρ and k were calculated with data from the ANOVAs. These data were then used to compute achieved T scores. An independent samples t test was used to determine whether or not there were significant differences between predicted T scores and achieved T scores.

CHAPTER III

Results

Assignment Completion

Data for math assignment completion during baseline, treatment, and follow up across students are provided in Figure 1. Enlarged graphs containing the same data appear in Figures 3 and 4. In addition, Table 2 presents the condition means, standard deviations, and effect sizes for all students across all phases of the study. Table 3 shows the overall condition means, standard deviations, and effect sizes across all phases of the study. Table 4 contains immediacy of change data and level stability for all six students.

In every case, completion rates improved from baseline to treatment. In all six cases, baseline data exhibited a decreasing trend. Across all six students, baseline completion ranged from 0-57%. The average baseline completion rate across all six participants was 29.00%.

All student's completion rates increased during the treatment phase. While three out of six children achieved baseline rates of 0% at least once during baseline data collection, five children achieved treatment completion rates of 100% at least once during the treatment condition. In every case, treatment averages were much higher than baseline averages. In four out of six cases, baseline and treatment ranges did not overlap. The average treatment completion rate across all six participants was 79.63%.

As seen in Figure 1, the effect of the solution-focused intervention was strong for four out of six participants. The other two participants showed mild improvement as well. In no cases did the intervention reduce completion rates of the participants in the study.

By examining follow-up data, it is apparent that completion rates remained high despite the removal of the intervention. In four out of six participants, follow-up data yielded completion rates of 85% or higher. Three of those participants maintained follow-up completion rates of 100%. Across all six participants, the lowest rate during follow-up was 33%. This represents a significant change when compared to 0% completion rates that were common during the baseline phase.

Student 1. During baseline, Student 1 completed an average of 25.33% of his math assignments (range = 0-43%). During treatment, Student 1 completed an average of 77.80% of his math assignments (range = 57-100%). These data yield an effect size of 2.33. Visual inspection of the data reveals that while this student's completion rate initially increased during treatment, the middle two weeks of treatment exhibited a decreasing trend. Specifically, during the fourth week of treatment Student 1 completed 57% of his assignments. The teacher was absent this entire week, and the class was under the control of a substitute teacher. The last week of treatment, Student 1 complained that it was difficult to catch up on missed work from the previous week while working on current assignments as well. That week, he completed only 71% of his assignments.

Baseline and treatment data exhibit somewhat variable trends. However, it should be noted that all treatment data points are higher than baseline points. Follow up data also exhibits a variable trend, although Student 1's completion rates remained above 33% for 3 weeks following treatment. Level stability was not achieved for the baseline phase; it was achieved for the treatment phase. Student 1's immediacy of change score was 71, indicating that the intervention had an immediate effect on his work completion.

Student 2. The baseline levels of Student 2 for assignment completion averaged 16.33%, with a range of 0-29%. During treatment, assignment completion averaged 70.80% (range = 57-86%). During a follow up period of 3 weeks, Student 2 maintained a completion rate of 100%. Although data were somewhat variable during the treatment phase, completion rates were consistently higher than those obtained during baseline. The effect size between baseline and treatment phase was 3.67. Level stability was achieved during both baseline and treatment phases. Student 2's immediacy of change score was 51.

Student 3. Student 3 had an average completion rate of 24.75% during baseline (range = 9-40%). During the treatment phase, his condition mean increased to 77.60% (range = 13-100%). Visual examination of the graph shows one outlying point during treatment phase, a completion rate of 13%. It should be noted that this was the week following a 4 day absence, and Student 3 failed to complete makeup assignments as well as current work. If this point is excluded from analysis, the treatment average is 93.75%. Due to the 4 day absence during Week 9, only one follow up point was obtained for Student 3, a rate of 67%. Level stability was achieved during both phases of the study. The immediacy of change score for Student 3 was 91.

Student 4. Assignment completion for Student 4 averaged 14.75% during baseline, and ranged from 0-25%. During the treatment phase, the average was 84% (range = 60-100%). These data yielded an effect size of 6.41. Two follow up points of 85% and 100% show that Student 4 was able to maintain the improvements made during treatment for 2 weeks after treatment had ceased. While baseline completion rates were low and variable, treatment data show a high, increasing, and stable trend. According to

our criteria, level stability was achieved during both phases. The immediacy of change score was equal to 40.

Student 5. The baseline levels of assignment completion for Student 5 averaged 43.80% and ranged from 29-57%. Visual inspection of baseline data points reveal a stable, low, decreasing trend. In contrast, data collected during treatment phase exhibit a stable, high, trend, with an effect size of 4.18. Completion during treatment averaged 94.40% and ranged from 86-100%. One follow up point reveals that Student 5 maintained a completion rate of 100% 1 week after treatment had ceased. Level stability was achieved in both phases of the study. Immediacy of change was equal to 71.

Student 6. For Student 6, baseline completion rates averaged 38.80% and ranged from 25-57%. During treatment, the average completion rate increased to 73.20% and ranged from 43-100%. These data yield an effect size of 2.47. One follow up point indicated that Student 6 completed 100% of his assignments 1 week after treatment had been terminated. Visual inspection of the data shows a low, variable trend during baseline. Treatment data show a high, variable trend. For Student 6, immediacy of change was equal to 51. Although the baseline phase was considered stable in accordance with the level stability guidelines, the treatment phase was not.

Assignment Accuracy

The objective grading method used to generate accuracy scores did not lend itself to use with all assignments. Often, teachers included some sort of non-quantifiable element, such as a participation grade, a presentation, or an artwork activity. While these non-quantifiable assignments were used to calculate completion rates, they could not be included in the accuracy scores. Out of a total of 385 assignments assigned by the

teachers, only 249 were graded and used to determine accuracy. The 249 data points that were included in the accuracy scores consisted of 147 assignments which yielded a number higher than zero, and 102 assignments in which the students earned 0%. A score of 0% was assigned for two situations: either the student did not complete the assignment, or they answered all problems on the assignment incorrectly. A total of 136 assignments were deemed non-quantifiable and were not included in the accuracy calculations.

Assignment Accuracy Across Students

Data for math assignment accuracy collected during baseline, treatment, and follow up for all students are graphed in Figure 2. Enlarged graphs containing the same data appear in Figures 5 and 6. Table 5 presents the condition means, standard deviations, and effect sizes for all students across all phases of the study. Table 6 shows the overall condition means, standard deviations, and effect sizes across all phases of the study. Table 7 contains immediacy of change data and level stability for all six students.

In all cases, accuracy condition means improved from baseline to treatment. Visual examination of Figure 2 shows highly variable trends across all phases for every student. However, accuracy rates appear to be consistently higher during treatment and follow up phases for four out of six students. Students 1, 2, 3, and 4 showed consistently higher accuracy rates during the treatment phase. However, the accuracy rates of Students 5 and 6 appear similar across phases. Examination of the individual condition means and effect sizes enhances interpretation because of the variability.

The overall accuracy condition mean for baseline was 23.50%. The overall accuracy condition mean for treatment increased to 50.01%. The overall accuracy mean for follow up was 47.06%.

Based on Cohen's guidelines (Cohen, 1988), effect sizes are large for four out of six students (Students 1, 2, 3, and 4). The effect size of Student 5 is considered medium, while the effect size for Student 6 is small. The overall effect size between baseline and treatment conditions was .76, which is considered medium. Lastly, the effect size between treatment and follow up conditions was .08, which is small.

Student 1. The average accuracy percentage for Student 1 during baseline was 15.27% (range = 0-100%). During the treatment phase, Student 1's average increased to 42.05%, ranging from 0-88%. The effect size between baseline and treatment phases was .86. A 3 week follow up period yielded an accuracy average of 25%, which ranged from 0-86%. Level stability was achieved for the baseline, but was not evident in the treatment phase. Student 1's immediacy of change score was 0.

Student 2. For Student 2, the average baseline accuracy level was 11.93% (range = 0-100%). Student 2's treatment mean increased to 48.25%, and ranged from 0-98%. The effect size yielded by these numbers was 1.29. During a 3 week follow up phase, the accuracy average increased to 72.63%, ranging from 0-100%. Level stability was achieved for the baseline phase; however it was not found in the treatment phase. Immediacy of change was equal to 0.

Student 3. Student 3 averaged 21.16% on accuracy during the baseline phase of the study (range = 0-100%). During the treatment phase, average accuracy increased to 52.95%, ranging from 0-100%. The effect size between phases was .86. During a 1

week follow up period, Student 3 averaged 43.33% on accuracy (range = 0-77%). Level stability was not present in either baseline or treatment phases. Immediacy of change was equal to 10.

Student 4. For Student 4, baseline accuracy levels averaged 10.50% (range = 0-64%). During the treatment phase, Student 4's mean accuracy increased to 44.92, ranging from 0-78%. The effect size between these phases was 1.53. A 2 week follow up period yielded an accuracy average of 33.75%. Baseline data were considered stable, however treatment data were not. Immediacy of change was 29.

Student 5. Student 5 averaged 31.71% accuracy during baseline (range = 0-100%). The treatment accuracy mean increased to 57.29%, ranging from 0-95%. The effect size between these phases was .75. A 1 week follow up period yielded an accuracy mean of 49%. There was no level stability in either phase of the study. Student 5's immediacy of change score was 60.

Student 6. For Student 6, the baseline accuracy mean was 36.00%, ranging from 0-100%. The treatment accuracy mean increased to 54.24% (range = 0-100%). The effect size between phases was .44. A 1 week follow up period yielded an accuracy mean of 90%. Once again, level stability was not found in either phase of the study. Student 6 had the largest immediacy of change score, 67.

Goal Attainment Scaling

Graphs of predicted and achieved goal attainment scale scores per week for each student appear in Figures 7-12. Likewise, predicted and achieved T scores for each student can be seen in Table 8. The values of predicted ρ (interclass correlation) and predicted k (linear constant), which were used to calculate weekly predicted T scores are

listed in Table 9. Table 10 contains the values of achieved ρ and achieved k , which were used to calculate weekly achieved T scores. Tables 11-17 contain summary data from ANOVAs that were used to calculate the weekly values of predicted ρ during all 7 weeks of treatment. Tables 18-23 display summary data from ANOVAs that were used to compute the weekly values of achieved ρ during Week 2- Week 7 of treatment.

In almost every case, predicted T scores were higher than achieved T scores. There was one exception to this pattern. During Week 4 of treatment, Student 6 underestimated both his completion and accuracy. The sums of his scale scores for that week yielded a predicted T score of 67, while his achieved T score was 72. This is the only situation where achievement was higher than prediction.

Student 1. Visual examination of the graphed scale scores indicates that Student 1 was able to predict completion rates reasonably well; he was not able to predict accuracy rates well. Out of the 5 weeks that Student 1 received treatment, he was able to accurately predict completion for 2 weeks (Weeks 2 and 3). For the remaining weeks (Weeks 1, 4, and 5), his predicted completion scale scores were only 1 level higher than his achieved scale scores. Accuracy predictions did not match achieved scale scores during any of the treatment weeks. Student 1's predicted and achieved T scores were significantly different as well. For all weeks of treatment, predicted and achieved T scores differed from a range of 23 to 35 points.

An independent samples t test between predicted and achieved T scores revealed significant differences, $t(8) = 7.11, p = .0001$. The predicted T scores ($M = 76, SD = 8.49$) were higher than the achieved T scores ($M = 45.80, SD = 4.27$).

Student 2. For Student 2, predicted GAS completion and accuracy scale scores were somewhat similar to achieved completion and accuracy scale scores. Predicted completion scale scores were closer in value to achieved completion scale scores (than predicted accuracy rates were to actual accuracy), with two of the weeks matching exactly (Weeks 2 and 5). Differences between predicted and achieved completion scale scores during the remaining weeks ranged from 1 to 2 levels. For accuracy, there was a larger gap between predicted and achieved scale scores. Differences in accuracy scale scores ranged from 2 to 5 levels. There was also a large difference in predicted and achieved T scores for Student 2. Across all 5 weeks of treatment, predicted and achieved T scores differed from 17 to as much as 31 points.

An independent samples t test between predicted and achieved T scores revealed significant differences at the .01 level of significance, $t(8) = 8.29, p < .0001$. The predicted T scores ($M = 68.40, SD = 5.18$) were higher than the achieved T scores ($M = 43.80, SD = 4.15$).

Student 3. Predicted GAS completion scale scores for Student 3 were somewhat different than achieved completion scale scores. During 2 out of 5 weeks, Student 3 was able to accurately predict his completion. However, the remaining 3 weeks showed a difference ranging from 1 to 5 levels between prediction and achievement. For accuracy, Student 3's predictions were not as precise. Predicted levels did not match achieved levels for any of the 5 treatment weeks. Differences between scale scores ranged from 1 to 5 levels. Student 3's predicted T scores were fairly different from achieved T scores for all weeks of treatment. Differences in predicted and achieved T scores ranged from 7 to 72 points.

An independent samples *t* test between predicted and achieved T scores revealed significant differences at the .05 level of significance, $t(8) = 3.61, p = .007$. The predicted T scores ($M = 76.40, SD = 6.99$) were higher than the achieved T scores ($M = 44.40, SD = 18.53$).

Student 4. In general, the predicted completion and accuracy scale scores for Student 4 are not similar to achieved scale scores. Predicted completion scale scores are somewhat similar to achieved completion scale scores, but they were only equal during 1 week of treatment, Week 4. The difference for the remaining weeks of treatment ranged from 1 to 2 scales. During Week 5 of treatment, Student 4 underestimated her completion by 1 level on the scale. For accuracy, Student 4's predictions did not match achievement during any of the treatment weeks. For every week, the difference between predicted and achieved scores was 4 scale levels. Calculated T scores were not similar in prediction or achievement. For all five weeks of treatment, differences ranged from 25 to 39 points.

An independent samples *t* test between predicted and achieved T scores revealed significant differences at the .01 level of significance, $t(8) = 8.17, p < .0001$. The predicted T scores ($M = 70.60, SD = 3.91$) were higher than the achieved T scores ($M = 37.60, SD = 8.14$).

Student 5. The results for Student 5's completion predictions were surprisingly different from the other participants in the study. Student 5 was able to accurately predict her completion rates during all 5 weeks of treatment. For every week, predicted and achieved scale scores were the same. However, she was not able to predict her accuracy rates so well. Student 5 was not able to precisely predict her accuracy during treatment.

During Week 5, she overestimated her accuracy by 1 level. The differences between predicted and achieved scale scores for the other weeks were 5 levels. Due to this discrepancy, predicted and achieved T scores were significantly different for all weeks of treatment except for Week 5. During Week 5, Student 5 obtained a predicted T score of 78; her achieved T score was 77. For the previous 4 weeks of treatment, differences ranged from 23 to 35 points.

An independent samples t test between predicted and achieved T scores revealed significant differences at the .01 level of significance, $t(8) = 4.01$, $p = .004$. The predicted T scores ($M = 78.60$, $SD = 4.62$) were higher than the achieved T scores ($M = 55.40$, $SD = 12.07$).

Student 6. For Student 6, predicted completion scale scores were somewhat similar to achieved completion scale scores. The scale scores were equal during one of the treatment weeks, Week 3. For 3 weeks, they differed by only one level. During Week 5, the difference between prediction and achievement for completion was two levels. Interestingly, during Week 4 of treatment, Student 6 underestimated both completion and accuracy. This was the only case where achievement was higher than prediction on both scales for all students. During Week 1, Student 6 underestimated completion. However, accuracy was overestimated by three scale levels during the same week. Student 6 was not able to predict accuracy as well as he did completion. With the exception of Week 4, in which achieved accuracy was one level higher than predicted accuracy, differences between prediction and achievement were four levels on the scale.

Although predicted T scores did not match achieved T scores, the differences were not statistically significant. During Week 4, when achievement was higher than

prediction, Student 6's achieved T score was 72, whereas his predicted T score was 67. This is the only case where an achieved T score was higher than those that were predicted. Although differences ranged from 13 to 39 points for the remaining 4 weeks of treatment, T scores were not significantly different. An independent samples t test between predicted and achieved T scores revealed nonsignificant differences at the .05 level of significance, $t(8) = 2.29$, $p = .054$. The predicted T scores ($M = 65.20$, $SD = 4.92$) were not significantly higher than the achieved T scores ($M = 49.80$, $SD = 20.33$).

CHAPTER IV

Discussion

Although SFBC has been most commonly applied in mental health settings, my results support its use in a school environment to increase academic performance. Math completion and accuracy rates improved considerably for six “noncompliant” students during five brief sessions using SFBC; improvement persisted during follow up. However, in general, students were unable to precisely predict completion or accuracy rates using Goal Attainment Scaling procedures.

Assignment Completion

Improvement in math assignment completion was evident among all six of the students who participated in the study. Across all participants, condition means from baseline to treatment increased from 34-69%. Also, increases in completion persisted during a 1 to 3 week follow up period for four out of six students. In cases where assignment completion was not maintained, children themselves often provided the explanation.

Student 1 showed an initial improvement from 0% to 71%. He continued to improve the following 2 weeks of treatment, with completion rates of 100% and 90%. However, his completion dropped to 57% during Week 4 of treatment, and increased slightly to 71% by the termination of treatment. During Week 4 of his treatment, his teacher was absent for the entire week and the class was left in control of a substitute teacher. During counseling sessions that week, several of the students in that class reported having difficulties completing their work due to the disruptions and distractions of other students who were not complying with the substitute’s rules and orders. Student

1 himself blamed his lowered rate of assignment completion for Week 4 on the presence of the substitute teacher. During Week 5, the last week of treatment, he stated that it was difficult for him to get back on task because he was simultaneously trying to make up the work which he did not complete from Week 4 and complete current assignments from Week 5. During counseling sessions, he told the counselor that he enjoyed each session and looked forward to the next one. In the final session, during Week 5 of his treatment, he told the counselor that he was not going to complete his work if he could not continue to have sessions. Indeed, his follow up completion rate dropped significantly for the next 2 weeks (33% and 43%). By the final week of follow up, Student 1 was able to return to a completion rate of 100%.

Student 2 also exhibited a decline in completion after showing initial improvement during the first 2 weeks of treatment. This decline makes more sense when the difficulty level of the work is considered with Student 2's level of mathematical ability. While the teachers indicated that all participants had the ability to complete the work accurately (e.g. no evidence of learning disability or skills deficits), Student 2 was identified as the lowest achieving student in the group. During counseling sessions, she repeatedly blamed incomplete work on the fact that she "didn't understand," or that the "work was too hard." When interviewed, Student 2's teacher stated that she had an especially hard time with multiple digit subtraction, which was a unit that they began studying during Week 3 of treatment. Week 2 was a review week, which might provide an explanation for why Student 2 was able to complete 80% of her work that week. Indeed, when that point is not considered, her treatment completion rate is much more stable. During the last week of treatment, Student 2 began attending weekly meetings

with a math tutor. Consequently, her completion rates increased to 86% during that week, and then to 100% during follow up. Completion rates remained at that level for the remainder of the study.

Unusual circumstances may also explain the data pattern of Student 3. Initially, Student 3 improved his completion rate from 9% to 100%. His completion rate remained at 100% for 2 consecutive weeks before dropping to 75%, which was still substantially higher than any of his baseline completion rates. However, during the fourth week of treatment, Student 3 was absent for the first 4 days of the week, returning to school on Friday after being in the hospital with a neck injury sustained during wrestling (an extracurricular activity). Due to the extensive absence, Student 3's weekly treatment session was delayed until the following week. At that point, his completion rate dropped to 13%, yet he stated he was having difficulty completing all makeup work along with current, new assignments. The following week, during the follow-up phase, his completion rate increased to 67%. His teacher stated that he was still struggling with the make up work from his prolonged absence.

For Students 4 and 5, the substantial gains that were made in completion during the treatment phase remained high throughout the study. Student 4's condition means increased from 15% during baseline to 84% during treatment. Her completion remained high during a 2 week follow up period. Student 5 showed the most significant change out of all participants in the study. Her baseline condition mean of 44% increased to 94% during treatment. It should be noted that during all 5 weeks of treatment, her completion rates were 86% or higher. During a 1 week follow up phase, she maintained a completion rate of 100%.

Student 6 initially improved his completion rate during the treatment phase. The second week of treatment was the week that his class had a substitute teacher. Indeed, all four students who were in that class exhibited lowered completion rates during that week. For Student 6, completion dropped to 43% with the presence of the substitute teacher. Student 6's completion rate was also lower during the final week of treatment (57%). Although Student 6 did not threaten to quit turning in assignments when treatment was terminated, he did say that he wished he could continue his weekly meetings. It is possible that the reduced completion rate during this week reflected negative feelings that Student 6 experienced concerning the termination of counseling.

Two indicators of experimental control in multiple baseline designs are immediacy of change and level stability (Weiner et al. 1998; Tawny & Gast, 1984). For assignment completion, immediacy of change coefficients ranged from 40 to 91 percentage points. These numbers indicate that in most cases, solution-focused counseling was effective in producing immediate change in the student's assignment completion patterns. Due to the experimental design of this study, it was possible to include the immediacy of change index as one operationalization of treatment efficiency. This index has not been used in other studies investigating the effects of SFBC. However, it has been used in studies with similar designs (e.g. Weiner et al., 1998) and is recommended by experts in single subject research (Tawny & Gast, 1984).

Level stability is also important to consider when determining the extent to which experimental control is achieved. This study followed guidelines used by Weiner et al. (1998) and Tawny and Gast (1984). For assignment completion, baseline and treatment

levels were considered stable for four out of six students. Consider the following mitigating circumstances for the two students who failed to obtain stable data.

In the case of Student 1, there were only three baseline data points. Although two of the three points fell within 20% of the condition mean, one point did not, meaning that only 67% of the points for the phase met the criteria. However, the outlying point was only 5 percentage points away from the cutoff score. Because there were only three data points, the only way stability could have been achieved was if all three had fallen in the range.

Treatment data for Student 6 were unstable according to our criteria. Two out of five data points were not within the 20% range (60% of data points). Once again, the small number of data points might be responsible for the instability of the condition.

Effect sizes for completion were large for all six students. These data indicate that solution-focused counseling sessions had a significant impact of the work habits of these students. The overall effect size of 2.95 between baseline and treatment data is also large. The effect size of .23 between treatment and follow up data for all children is small by Cohen's (1988) guidelines. This indicates that there was not a significant change from treatment to follow up. Most children were able to maintain the gains that they made during counseling sessions, providing evidence that solution-focused counseling is capable of producing a lasting positive effect.

Assignment Accuracy

Improvement in accuracy was not as dramatic as the gains made in assignment completion across students. Although treatment means were higher than baseline means for all six students, the increases were not as substantial as the increases made in

completion rates. Across all participants, increases from baseline means to treatment means ranged from 18% to 36%. All children were able to increase their accuracy means during treatment; examination of the standard deviations and effect sizes provides additional insight into the significance of these increases.

All standard deviations for baseline and treatment conditions are large, ranging from 22.52 to 41.65. Clearly, the accuracy data contain a substantial amount of variability. Effect sizes for four out of six students were large (Students 1, 2, 3, and 4). Effect sizes for Student 5 was medium, while the .44 effect size for Student 6 is considered small.

During the follow up periods, data were also variable. Most students maintained accuracy patterns similar to those obtained during baseline and treatment. One exception to this generalization is found by examining the accuracy data of Student 2. With the exception of one zero (she missed all problems on the assignment), the accuracy scores of Student 2 are consistently higher during the follow up period. Completion data for Student 2 also show increased performance during follow up (3 weeks of 100% completion). These weeks were during the period when Student 2 began attending weekly tutoring sessions. While Student 2 appears to have put more effort into completing her work accurately during follow up, the other students do not exhibit this pattern. Based on these results, there is little evidence that any of the other student's accuracy increased significantly during follow up phases.

In contrast to the completion data, experimental control was less evident for accuracy. Level stability was not achieved during the baseline phase for three out of six students (Students 3, 5, and 6). During the treatment phase, level stability was not stable

for any of the participants.

Some discussion is warranted concerning the accuracy scores of Student 4. She did not have as many accuracy scores as the other students, and her math teacher's style provides the explanation. Student 4 was in the advanced 5th grade math class. Her teacher utilized a unique teaching style in which students were assigned artwork, class presentations, and participation grades in addition to worksheets, tests, and quizzes. Due to the subjective quality of many of Student 4's assignments, a substantial number did not lend themselves to the objective grading method used to determine accuracy scores. Because Student 4 did not complete many of the assignments during the baseline phase, she was assigned nine scores of zero for accuracy. In fact, only three of the completed assignments were considered gradable. Therefore, Student 4's accuracy data were stable due to the large amount of zeroes that she received. The majority of the assignments that she completed during the baseline phase were not graded for accuracy (due to subjectivity).

Students 1 and 2 also achieved level stability during the baseline phase. The explanation is similar to the case of Student 4, although their teacher did assign a large number of gradable assignments. During baseline, both students completed only 4 and 3 assignments, respectively. Therefore, the large number of zeroes (11 out of 15 and 12 out of 15) mandates that the data be considered stable.

Immediacy of change data were variable across students. Positive numbers for immediacy of change were achieved for four out of six students (Students 3, 4, 5, and 6). For Students 1 and 2, immediacy of change was zero. Student 3 had an immediacy of change score of 10, which is low. However, Students 4, 5, and 6 had higher scores.

Particularly, Students 5 and 6 had immediacy of change scores of 60 and 67, which are strong. These two students typically earned good grades when the work was completed. Consequently, their accuracy scores increased dramatically when they began turning in their work.

Several factors may contribute to the high variability and lowered effects found for the accuracy data. Accuracy was not targeted as the primary dependent variable. The focus of the counseling was work completion, and accuracy data were collected to determine if accuracy would increase as work completion increased. It did, for all students. However, accuracy was still counted for days when the work was not completed. On these days, students received a zero for their accuracy score. In many cases, these zeros account for the high variability in the accuracy data. If the scores of zero are removed, variability would diminish significantly.

Accuracy data do provide insight into the differing abilities of the children. For Students 3, 5 and 6, it appears that they were fairly accurate on the days when they chose to complete their work. Indeed, the teachers indicated that these students were A and B students when they were on task. However, math proved to be a struggle for the other students who participated in the study (Students 1, 2, and 4). Accuracy scores for these children were highly variable (even on days when the work was completed and gradable). When interviewed, both the teachers and students indicated that math was difficult for them. These students generally received higher scores on review days or other occasions when the work was not new or difficult. On days when the work was challenging to them, their accuracy scores are considerably lower. The teachers indicated that these students were typically C and D students.

Solution-Focused Counseling as an Academic Intervention

Results from both completion and accuracy data indicate that solution-focused counseling can be effective when used to help students with mild academic problems. Completion data indicate that the intervention was powerful enough to change work habits. While the accuracy data are less stable, it is apparent that when children attempt their work, their grades increase concomitantly.

All six participants stated that they enjoyed participating in the counseling sessions, and teachers also expressed their appreciation. Consideration of the specific components of SFBC might help explain what makes it such an attractive intervention to students and teachers alike. Teachers find it appealing because it requires minimal effort on their part. Also, students do not miss a significant amount of instruction time (maximum of 30 minutes once a week for 5 weeks). The time efficiency of the intervention is also appealing to all educational professionals.

Certain components of SFBC seem particularly effective with students. Specifically, the children appeared to enjoy answering the miracle question. For example, as one session terminated for Student 6, he told the counselor that they could not finish before he had a chance to answer “the fairy question.” Apparently, he enjoyed using his imagination to consider the impact that his improvement might have on others in his life.

Students seemed to appreciate receiving written notes at the end of the sessions, another SFBC technique. Student 4 told the counselor that she had saved all of the notes and looked at them whenever she felt like “blowing off” her math work. Student 2 stated that she took every note home to share with her mother, who then preceded to offer

encouragement throughout the week. Students 3 and 5 shared the notes with their teachers, who were then able to remind them of the goals they had set for themselves throughout the week. Student 1 demanded a note during a session in which the counselor had not yet offered it.

Students seemed to respond positively to several other SFBC methods. In particular, the use of positive blame, cheerleading, and flagging the minefield appeared to be effective elements of the intervention. Positive blame and cheerleading seem to promote pride in accomplishments and to motivate. Lastly, flagging the minefield provided students the opportunity to foresee obstacles that might hinder their performance and make contingency plans accordingly. On three separate occasions, students reported that flagging the minefield kept them on task when the foreseen obstacles occurred.

This study focused on assignment completion, and to a lesser extent assignment accuracy. In general, SFBC has not been used to promote achievement of academic goals and no study to date supports SFBC to promote these specific goals. Even so, these results are consistent with conclusions found in previous studies conducted in other settings and with different populations. For example, Corcoran and Stephenson (2000) utilized a pretest/ posttest design to test the efficacy of SFBC with children who displayed behavior problems. The participants in their study scored better on posttest administrations of the Conners' Parent Rating Scale (Conners, 1990). Although their study was subject to several limitations (e.g. attrition, measurement problems, reliance on client self-report), the authors indicate that solution-focused counseling appeared to be an effective treatment for children with behavior problems. Similarly, Littrell et al. (1995)

and Mostert et al. (1999) concluded that SFBC was effective and appealing to both children and school counselors for several reasons, some of which overlap with the positive elements of this study. For example, counselors were able to offer concrete interventions in a small number of sessions. Also, students were also able to set reasonable goals in a short amount of time. While this study did not investigate counselor self-esteem, the improvements made in completion rates indicate that the intervention was effective for students. And both teachers and students offered many positive comments (e.g. students work harder, earn higher grades, are less disruptive in class, etc.). Apparently, solution-focused counseling can be effective in promoting assignment completion and accuracy and is a viable, time-efficient, and appealing intervention for students who have difficulty completing schoolwork successfully.

This study offers several unique contributions to the literature on SFBC. Specifically, a rigorous multiple-baseline-across-participants design has not been implemented in a school setting. Also, improvement in assignment completion and accuracy as a function of SFBC has not been investigated heretofore. While my study is subject to several limitations, the experimental rigor achieved provides the most conclusive support of the efficacy of SFBC in a school setting.

As previously noted, SFBC has been applied to only a few school based problems (e.g. Corcoran & Stephenson, 2000; Franklin et al., 2001; LaFountain & Garner, 1996; LaFountain et al., 1996; Mostert et al., 1997; Shechtman et al., 1996; Yarbrough & Thompson, 2001; Zinck & Littrell, 2000) and many of those exhibit significant design flaws. Our study was designed to address the limitations of these studies (e.g. methodological flaws, experimenter bias, testing effects, attrition, use of self-report to

define success). Consequently, these results offer substantial evidence for the efficacy of SFBC, particularly with students who exhibit mild academic problems. Taken together, the growing body of SFBC literature offers support for its efficacy within varied settings (jails, mental health centers, schools), with various populations (fathers, school students, couples, parents), and for a variety of problems (behavioral, academic, emotional). See Lange, 2001; Zimmerman, Jacobson, MacIntyre, & Watson, 1996; Zimmerman, Prest, & Wetzel, 1997.

One of the most challenging problems facing teachers is motivation of underachievers. Because this intervention was designed to promote work completion of capable but noncompliant students, the results contain direct implications for that population. In particular, math can be a challenging subject for many otherwise capable students at the elementary age. The SFBC intervention used in this study proved robust enough to motivate a difficult population (underachievers) with a difficult subject (math). Consequently, the results of this study have implications for all educators who are faced with the common problem of motivating underachieving students.

Goal Attainment Scaling

This study used a variation of the goal attainment scaling method described by Kiresuk et al., 1994. The GAS I used contained two scales, which appears to be fairly common, although Kiresuk et al., 1994 (p. 8) recommend using three or more when possible.

Because GAS guides are completed by different raters, with different stated goals, the interpretation of the scale may vary. There has been considerable debate concerning the nature of the construct the GAS defines. In some cases, it is considered to be a

measure of clients' perceived ability to change, with the clients themselves performing the ratings. In other situations, it has been used as an indicator of treatment induced change, and an independent follow up rater is responsible for determining the client's level on the scales at the end of treatment. I chose to assess the validity of the GAS by comparing perceived ability to change to a very objective outcome-- academic completion and accuracy. In a sense, this process provides psychometric evidence of the quality of the relationship between clients' subjective self-report and a more objective outcome.

My study investigated the validity of goal attainment scaling in educational settings in a unique and rigorous way. That is, the goal was to estimate the validity of GAS using an objective criterion- actual academic performance. I considered the GAS summary score to be a measure of students' perceived ability to change during treatment and asked students to rate themselves on the scale every week of treatment, which was compared to performance. The typical practice by authors of previous validity studies seems to be to correlate the GAS summary score with outcome measures that are themselves less than objective, or at best quasi-objective. For example, researchers working in mental health settings correlated vague GAS scores (e.g. goals for difficult-to-quantify symptoms such as delusions) with moderately subjective normative measures of outcome (e.g. client ratings on the Brief Psychiatric Rating Scale); see Garwick (1974, as cited in Kiresuk et al., 1994). Often, GAS scores are provided by independent raters or therapists based on their "opinions" of progress, or from subjective ratings of improvement (Gembol, 1981, as cited in Kiresuk et al., 1994; Johnson & Greenberg, 1985; Maher & Barback, 1984; Shefler et al., 2001). For example, Johnson and

Greenberg (1985) used GAS along with subjective marriage rating instruments to compare different types of marital therapy. Similarly, Maher and Barback (1984) correlated GAS scores of adolescents in therapy for conduct problems with independent and subjective ratings by the student's teachers. In fact, in the Maher and Barback study, both the GAS scales and the teacher ratings were subjective, a rather common occurrence. A recent study by Shefler et al. (2001) provides another example. They used GAS guides constructed by two judges with 33 patients. Each guide contained five scales: symptom severity, self-esteem, romantic relationships, friendships, and work performance. The judges independently evaluated the patients several times during treatment. In addition, patients provided self-reports on four additional rating scales: the Target Complaints Scale, Brief Symptom Inventory, and the Rosenberg Self Esteem Scale. Judges also rated the patients on the Health-Sickness Rating Scale. Scores on these scales were then correlated with the GAS scores. Both the GAS scales and the use of self-report and independent ratings by judges to determine outcomes contributed to the subjectivity. All these studies have in common the lack of objective criteria for establishing goals. In contrast, this study operationalized GAS using clear, objective scales and permanent product academic outcomes to determine scale scores.

Statistically significant GAS differences between predicted and achieved T scores were found for five out of six students. While the results from the independent t tests indicate that students did not predict their goal attainment with accuracy, an examination of the graphed scale scores is necessary to understand the nature of these differences.

In this study, the T scores are combined to represent both scales: completion and accuracy. But visual examination of the scale scores provides a more molecular analysis.

When predicted and achieved scale scores for each individual scale are examined, it is apparent that all students did a much better job predicting completion than they did accuracy. All six students predicted their completion achievement precisely at least once during the treatment period. Student 5 accurately predicted her completion rates for all 5 weeks of treatment. With the exception of one student during one week of treatment (Student 3, Week 5), all students were able to predict their completion within 2 levels of their actual achievement during all weeks of treatment.

An examination of the graphed scale scores for accuracy shows that all students had difficulty precisely predicting their achievement for this scale. None of the students were able to precisely predict accuracy during any of the treatment weeks. Also, with the exception of one child during one week of treatment (Student 6, Week 4), all students overestimated their actual accuracy scores. So, visual examination of the graphed scale scores indicates that the students were better able to predict completion than accuracy. The large T score difference overestimates the predictive accuracy because the T scores incorporate both the accuracy scale and the completion scale.

An examination of the predicted scale scores for both completion and accuracy shows similar patterns across all six students. The majority of the students chose the top levels of the scale when asked to predict their completion and accuracy. In no cases did the students choose the lowest levels of the scale. Overestimation of achievement may be due to inflated estimates of ability. However, investigation of this phenomenon is beyond the scope of our study.

Several conclusions regarding the use of goal attainment scaling in educational settings are possible. While the GAS may be useful in helping children to visualize their

weekly educational goals, caution should be exercised when interpreting T scores. As is evident from the results, T scores do not always accurately reflect goal attainment on all scales. For example, if a goal attainment scale contains two scales, such as the ones used in this study, a T score of 50 might seem to indicate that the student has reached an acceptable level of achievement on both scales. However, a T score of 50 could also be obtained if the student is at the top of one scale while simultaneously being at the bottom of the other scale. Consequently, T scores calculated from the GAS may be misleading when considering goal attainment of just one of the two or more scales normally included. While this practice seems to produce error in the interpretation, at least from a traditional psychometric perspective, Kiresuk et al. (1994) provide a different explanation. They liken the GAS to grade point averages, in which many different grades from different classes of differing amounts of difficulty are combined into one score for each student. Like the GPA, the GAS provides a summary score that combines all scales. In fact, Kiresuk et al. (1994) recommend that the GAS should contain at least three separate “problems”, and the T score provides an estimate of a client’s change across all of these.

The results of this study indicate that student’s self-reports of goal attainment were not accurate. Indeed, the students’ perceived ability to change was much greater than the actual changes that occurred. When using the GAS with students and clients, school counselors and school psychologists should exercise caution when using self-report as an indication of improvement.

Clearly, the manner in which the GAS is operationalized will depend upon the setting in which it is being used. Certain settings, such as program evaluations, medical

settings, and educational settings make it easier to objectively operationalize goals. In mental health settings, it is much more difficult to create an objective criterion against which to judge the accuracy of the score. Indeed, the majority of studies conducted on GAS relied on the subjective opinion of the rater to generate the GAS score, whether it was the therapist, an independent rater, or the client themselves. Our results indicate that these subjective ratings may not be accurate. When possible, objective, quantifiable goals with outcomes that can be seen and heard should be used to maximize the validity of goal attainment scaling.

Strengths and Weaknesses

As noted previously, this study was designed to overcome limitations of previous research. The rigorous design of the study strengthens interpretation of results. In addition, SFBC was robust enough to produce positive outcomes in the face of real world obstacles. For example, during the intervention, a substitute teacher was introduced for 5 days and one student missed 4 consecutive days of school. Despite these unavoidable events that might have hindered other studies, my intervention still produced impressive outcomes. Because this study was conducted in the real world, real problems were encountered and handled. These situations enhanced the strength of the results.

This research is not without limitations. For example, generalizability is not strong. All six students saw the same counselor. Also, there were only six participants who attended the same school. All participants were of the same age and ethnicity. Finally, the study only used schoolwork from one academic area, math.

The source of the data illustrates another limitation. Math assignments were not standardized, but represented the actual schoolwork the teachers assigned. Use of

schoolwork as a dependent measure increases ecological validity but produces error in scoring. That is, many assignments could not be graded for accuracy (due to subjectivity). These included artwork, class presentations, group work, and participation grades. Therefore, the scores we report do not always reflect the grades that the students received from the teacher. However, it should be noted that this procedure represents relatively good ecological validity.

The accuracy data demonstrated a large amount of variability, making generalization complex and experimental control difficult. Therefore, conclusions are somewhat tentative.

A limitation associated with the use of goal attainment scales occurred because the procedure for obtaining the accuracy scores was not explained to the students. Therefore, when students predicted their accuracy, they may have assumed that they were using the teacher's somewhat subjective criteria, rather than the grading criteria constructed for this study. Accuracy predictions were not compared to weekly grades assigned by the teacher, which may explain the large disparity between the student's predicted and achieved accuracy scores, as well as the significant differences in the T scores.

Another potential limitation of the use of goal attainment scaling is the variation of the method used. The GAS contained only 2 scales; the creators of the GAS process recommend using a minimum of 3 scales. Also, students rated themselves on the GAS, rather than having an independent rater. Lastly, students used the GAS weekly, as opposed to one time-- after the termination of treatment. (As previously noted, the use of multiple GAS scales also produces psychometric problems).

A final limitation of this study is that all feedback from students and teachers were gathered in an informal fashion. Parents were not involved in the study, other than providing parental permission for participation. A standardized measure of teacher and student feedback would have provided additional insight into the acceptability of SFBC.

Implications for Future Research

Future research in this area should focus on several components that were not included in the scope of this study. First, the efficacy of SFBC should be examined for other academic subjects. Second, students of different age ranges, backgrounds and ethnicities should be included in future research. In addition, perhaps grades that teachers assign should be incorporated as a dependent variable. From an ecological perspective, standardized feedback from parents, teachers, and school administrators would be helpful (for their opinion of change in the participants).

This study was conducted during the Fall semester of the 2002 school year. Due to the close proximity of the follow up period to the winter holidays, a longer follow up was not possible (follow ups ranged from 1-3 weeks). Future studies should conduct longer follow up periods to determine if SFBC is responsible for permanent changes in student work habits. Also, additional studies might conduct follow up assessments after the conclusion of data collection, perhaps at 6 month or even 1 year intervals. These data could provide insight into how well students are able to maintain long lasting changes.

Future research is needed to further evaluate the benefits of Goal Attainment Scaling. Specifically, more research should be conducted before making any decisions regarding the concurrent validity of the measure. Researchers should strive to match scales to actual outcomes that can be standardized, operationalized, or actually compared

to permanent products.

In this particular study, the goal attainment scales were constructed to match the dependent variables of the study. Additional scales dependent on the students' individual goals could have been investigated. This study avoided additional scales because goals needed to match actual outcomes. However, future research should incorporate additional academic goals.

The majority of the participants in this study consistently overestimated their performance when asked to complete a goal attainment scale. Future researchers should investigate this phenomenon, focusing on several questions. To what extent is overestimation of goals a common occurrence? Does overestimation adversely affect the validity of the goal attainment scale? Finally, why do children tend to overestimate their performance?

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APPENDICES

Appendix A
Participant Descriptions

Student 1. Student 1 was a popular male who was very interested in football and participated in it as an extracurricular activity. He was of average height and weight for his age. Initially, he was reluctant to trust the counselor. His teachers indicated that he was quite capable yet not interested in his schoolwork, particularly math. They stated that he was very absent-minded with work and responsibilities. His desk was very unorganized. He lived with his grandmother and was the second of four siblings.

Student 2. Student 2 was small for her age. She had a physical defect on her face that made her the target of bullying from other children. She was a very needy individual, and was always seeking attention from teachers and the counselor. Student 2 was easy to establish rapport with. Teachers indicated that she was capable of the work in math, but had difficulty with complex operations and acquisition of new skills.

Student 3. Student 3 was of normal height and stature for his age. He was a very outgoing individual, and was popular with other students. Student 3 was the class clown and was always distracting other students during class looking for laughs. His teachers indicated that he was very capable of completing the work and making good grades, yet his constant goofing off in class prevented him from being successful. He participated in wrestling as an extracurricular activity. Student 3 had a twin sister who did not participate in the study. It was not difficult to establish rapport with him, and he enjoyed receiving positive reinforcement and praise throughout the intervention.

Student 4. Student 4 was somewhat shy. She was an attractive girl of average height and weight. Although she was shy, she responded very positively to counseling and it was not difficult to establish rapport with her. Both Student 4 and her teachers indicated that she was an excellent student who had trouble specifically with math.

Student 4 was a very creative and gifted writer. She typically composed poetry while the counselor was writing the note at the end of the session. Although Student 4 was attractive and got along with her peers, she seemed to have a low self-esteem.

Student 5. Student 5 was tall and mature for her age. While she was outgoing with her peers, she was initially shy and distrusting of the counselor as well as the counseling process. Student 5's teachers indicated that she was a good student but became easily distracted by other students and typically did not complete take-home assignments. Her math teacher reported that she was constantly disciplining Student 5 for minor disruptions during class, such as talking and passing notes.

Student 6. Student 6 was a male of average height and weight. He had a very engaging personality and quickly became interested in the counseling sessions. All teachers reported that Student 6 had a history of disruptive behavior in the classroom. In fact, his main teacher had moved his desk next to her desk to minimize his outbursts. Although this student had several behavior issues, he typically succeeded academically when he felt like putting effort into his work. Student 6 lived with his aunt and uncle and was the youngest of three children.

Appendix B
Treatment Fidelity Sheet

Treatment Fidelity Sheet

Child: _____

Session #: _____

Date: _____

<u>Solution-focused task</u>	<u>Occurred during session</u>	
1. Client is asked to scale problem on 1- 10 scale	yes	no
2. Asks client what must occur to raise the scale by 10%	yes	no
3. Asks the miracle question	yes	no
4. Asks client to report when the miracle has occurred	yes	no
5. "Cheerleads" client when positive behavior is reported	yes	no
6. Uses positive blame when exceptions are identified	yes	no
7. Flags the minefield	yes	no
8. Gives client a written message at end of session	yes	no

Appendix C
Sample Goal Attainment Scale

Number of Math Assignments I Will Turn In This Week	My Grade in Math for This Week
I will turn in 81% - 100% of my math work.	A
I will turn in 61% - 80% of my math work.	B
I will turn in 41% - 60% of my math work.	C
I will turn in 21% - 40% of my math work.	D
I will turn in 0% - 20% of my math work.	U

Appendix D

Tables and Figures

Table 1

Means and Ranges of Interobserver Agreement on Accuracy Per Student

Student	Mean Agreement	Range of Agreement
1	98.90%	94- 100%
2	98.40%	96- 100%
3	95%	80- 100%
4	93%	82- 100%
5	95.80%	87- 100%
6	97.50%	96- 100%

Table 2

Assignment Completion Condition Means, Standard Deviations, and Effect Sizes for All Students

Student	Baseline	Treatment	κ
	<i>M (SD)</i>	<i>M (SD)</i>	
1	25.33 (22.50)	77.80 (17.08)	2.33
2	16.33 (14.84)	70.80 (12.48)	3.67
3	24.75 (14.24)	77.60 (37.70)	3.71
4	14.75 (10.81)	84 (16.73)	6.41
5	43.8 (12.11)	94.40 (7.67)	4.18
6	38.80 (13.94)	73.20 (22.93)	2.47

Note. κ = effect size between baseline and treatment phases

Table 3

Overall Assignment Completion Condition Means, Standard Deviations, and Effect Sizes

Baseline	Treatment	Follow Up	κ^*	κ^{**}
<i>n</i> = 24	<i>n</i> = 30	<i>n</i> = 11		
<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>		
29.00 (17.14)	79.63 (20.97)	84.36 (25.22)	2.95	.23

Note. κ = effect size. * Effect size between baseline and treatment phases. ** Effect size between treatment and follow up phases.

Table 4

Immediacy of Change and Level Stability for Assignment Completion Across all 6 Students

Student	Immediacy of Change	Baseline Stability	Treatment Stability
1	71	Unstable	Stable
2	51	Stable	Stable
3	91	Stable	Stable
4	40	Stable	Stable
5	71	Stable	Stable
6	51	Stable	Unstable

Table 5

Assignment Accuracy Condition Means, Standard Deviation, and Effect Sizes for All Students

Student	Baseline M (SD)	Treatment M (SD)	κ
1	15.27 (31.00)	42.05 (31.86)	.86
2	11.93 (28.06)	48.25 (32.81)	1.29
3	21.16 (37.12)	52.95 (39.34)	.86
4	10.50 (21.56)	44.92 (26.05)	1.53
5	31.71 (34.33)	57.29 (31.85)	.75
6	36.00 (41.65)	54.24 (43.49)	.44

Note. κ = effect size between baseline and treatment phases

Table 6

Overall Condition Means, Standard Deviations, and Effect Sizes for Assignment Accuracy

Baseline	Treatment	Follow Up	κ^*	κ^{**}
<i>n</i> = 109	<i>n</i> = 109	<i>n</i> = 31		
<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		
23.50 (35.01)	50.01 (34.77)	47.06 (35.85)	.76	.08

Note. κ = effect size. * Effect size between baseline and treatment phases. ** Effect size between treatment and follow up phases.

Table 7

Immediacy of Change and Level Stability for Assignment Accuracy Across all Six Students

Student	Immediacy of Change	Baseline Stability	Treatment Stability
1	0	Stable	Unstable
2	0	Stable	Unstable
3	10	Unstable	Unstable
4	29	Stable	Unstable
5	60	Unstable	Unstable
6	67	Unstable	Unstable

Table 8

Predicted and Achieved T Scores for All Students

	Student 1		Student 2		Student 3		Student 4		Student 5		Student 6	
Week	Pred. T	Ach. T	Pred. T	Ach. T	Pred. T	Ach. T	Pred. T	Ach. T	Pred. T	Ach. T	Pred. T	Ach. T
	Score	Score	Score	Score	Score	Score	Score	Score	Score	Score	Score	Score
1	78	44	71	44	67	60	76	40	81	50	58	45
2	85	50	76	45	81	50	73	45	76	50	63	50
3	81	50	65	40	76	55	70	45	73	50	67	50
4	63	40	63	40	73	44	67	30	85	50	67	72
5	73	45	67	50	85	13	67	28	78	77	71	32

Table 9

Values of Rho and k for Each Week of Treatment for Predicted T Scores

Week	ρ	k
1	0	7.07
2	-.33	8.66
3	-.14	7.64
4	.17	6.55
5	.50	5.77
6	-.33	8.66
7	0	7.07

Table 10

Values of Rho and k for Each Week of Treatment for Achieved T Scores

Week	ρ	k
1*	.30	6.20
2	.88	5.16
3	.98	5.03
4	.95	5.06
5	.99	5.01
6	.60	5.59
7	-.40	9.13

* Due to restriction of range, a one-way ANOVA could not be calculated for this week. Consequently, the conventional values of ρ and k were used to calculate T scores.

Table 11

Subjects by Scales Analysis of Variance for Week 1 of Treatment for Predicted T Scores

Source	SS	<i>df</i>	MS	F	<i>p</i>
Between	.25	1	.25	1	.42
Within	.50	2	.25		
Total	.75	3			

Table 12

Subjects by Scales Analysis of Variance for Week 2 of Treatment for Predicted T Scores

Source	SS	<i>df</i>	MS	F	<i>p</i>
Between	0	1	0	0	1
Within	2	6	.33		
Total	2	7			

Table 13

Subjects by Scales Analysis of Variance for Week 3 of Treatment for Predicted T Scores

Source	SS	df	MS	F	p
Between	.33	1	.33	.50	.50
Within	6.67	10	.67		
Total	7	11			

Table 14

Subjects by Scales Analysis of Variance for Week 4 of Treatment for Predicted T Scores

Source	SS	df	MS	F	p
Between	.75	1	.75	1.80	.21
Within	4.17	10	.42		
Total	4.92	11			

Table 15

Subjects by Scales Analysis of Variance for Week 5 of Treatment for Predicted T Scores

Source	SS	<i>df</i>	MS	F	<i>p</i>
Between	.75	1	.75	5	.05
Within	1.50	10	.15		
Total	2.25	11			

Table 16

Subjects by Scales Analysis of Variance for Week 6 of Treatment for Predicted T Scores

Source	SS	<i>df</i>	MS	F	<i>p</i>
Between	0	1	0	0	1
Within	1.33	4	.33		
Total	1.33	5			

Table 17

Subjects by Scales Analysis of Variance for Week 7 of Treatment for Predicted T Scores

Source	SS	<i>df</i>	MS	F	<i>p</i>
Between	.17	1	.17	1	.37
Within	.67	4	.17		
Total	.83	5			

Table 18

Subjects by Scales Analysis of Variance for Week 2 of Treatment for Achieved T Scores

Source	SS	<i>df</i>	MS	F	<i>p</i>
Between	15.13	1	15.13	15.78	.01
Within	5.75	6	.96		
Total	20.88	7			

Table 19

Subjects by Scales Analysis of Variance for Week 3 of Treatment for Achieved T Scores

Source	SS	<i>df</i>	MS	F	<i>p</i>
Between	33.33	1	33.33	100	less than .01
Within	3.33	10	.33		
Total	36.66	11			

Table 20

Subjects by Scales Analysis of Variance for Week 4 of Treatment for Achieved T Scores

Source	SS	<i>df</i>	MS	F	<i>p</i>
Between	21.33	1	21.33	37.64	less than .01
Within	5.67	10	.57		
Total	27	11			

Table 21

Subjects by Scales Analysis of Variance for Week 5 of Treatment for Achieved T Scores

Source	SS	df	MS	F	p
Between	40.33	1	40.33	302.5	less than .01
Within	1.33	10	.13		
Total	41.66	11			

Table 22

Subjects by Scales Analysis of Variance for Week 6 of Treatment for Achieved T Scores

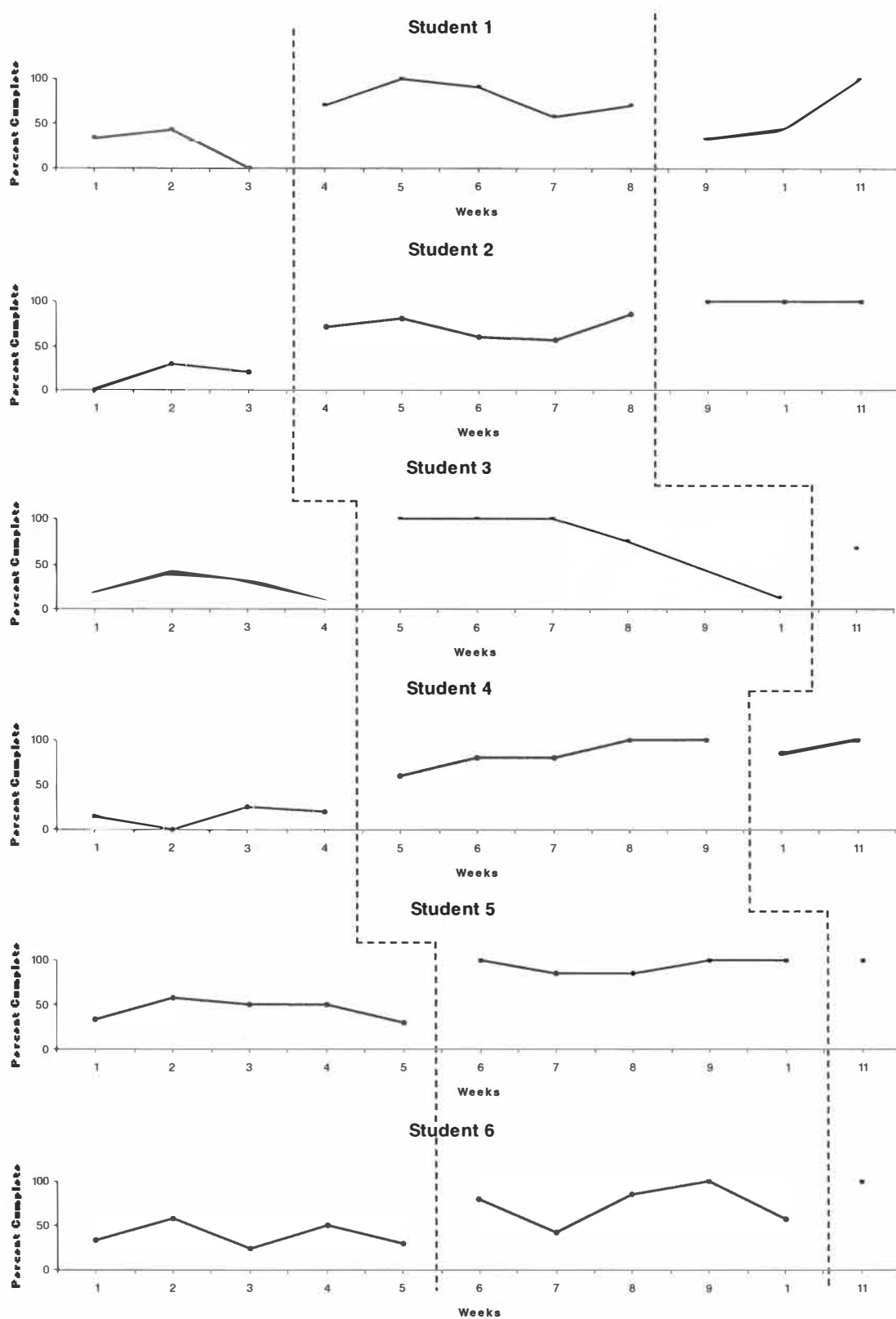
Source	SS	df	MS	F	p
Between	10.67	1	10.67	4	.12
Within	10.67	4	2.67		
Total	21.34	5			

Table 23

Subjects by Scales Analysis of Variance for Week 7 of Treatment for Achieved T Scores

Source	SS	<i>df</i>	MS	F	<i>p</i>
Between	1.5	1	1.5	.43	.56
Within	14	4	3.5		
Total	15.5	5			

Figure 1. Assignment Completion Rates Per Week Across All Students and Phases.



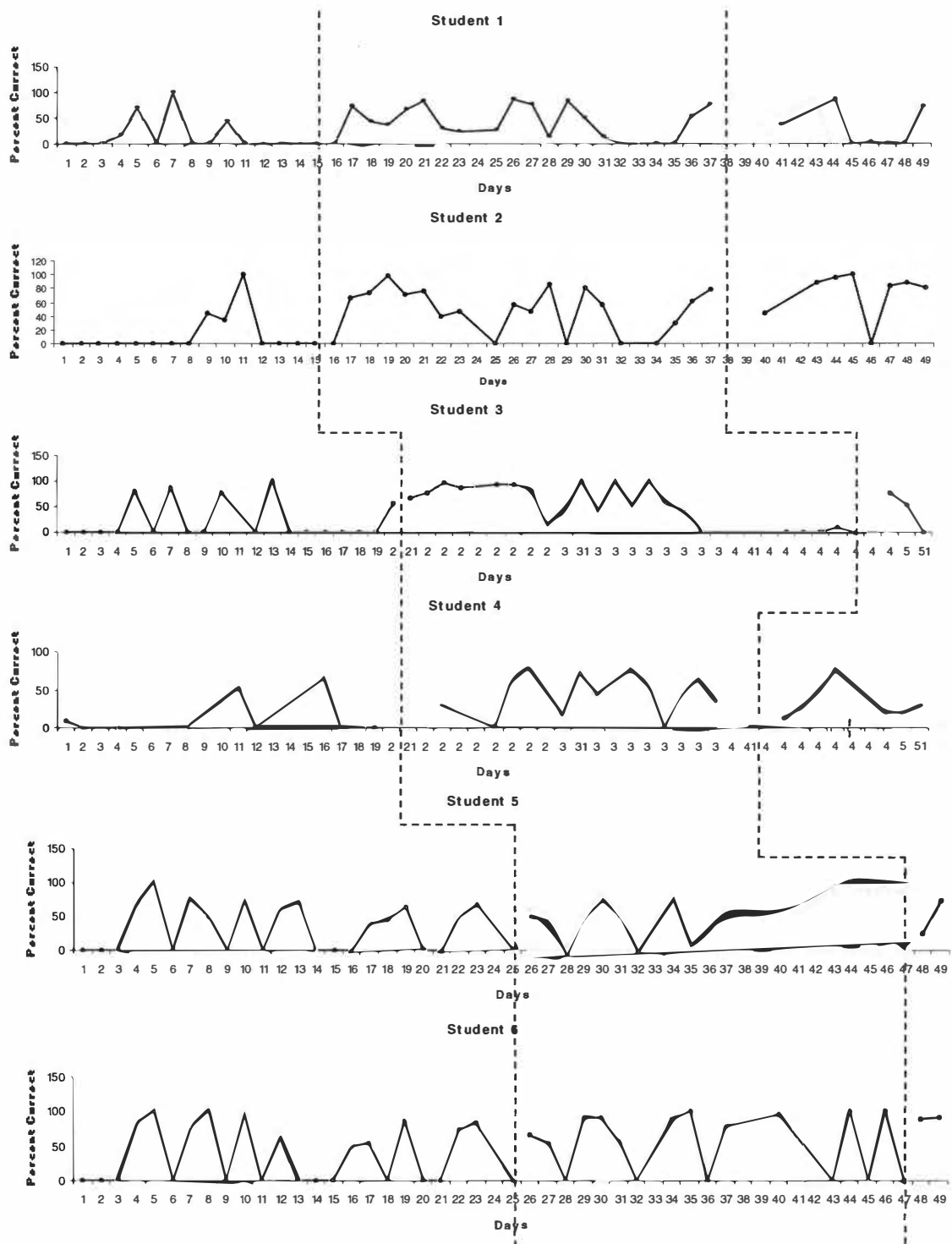


Figure 2. Assignment Accuracy Rates Per Day Across All Students and Phases.

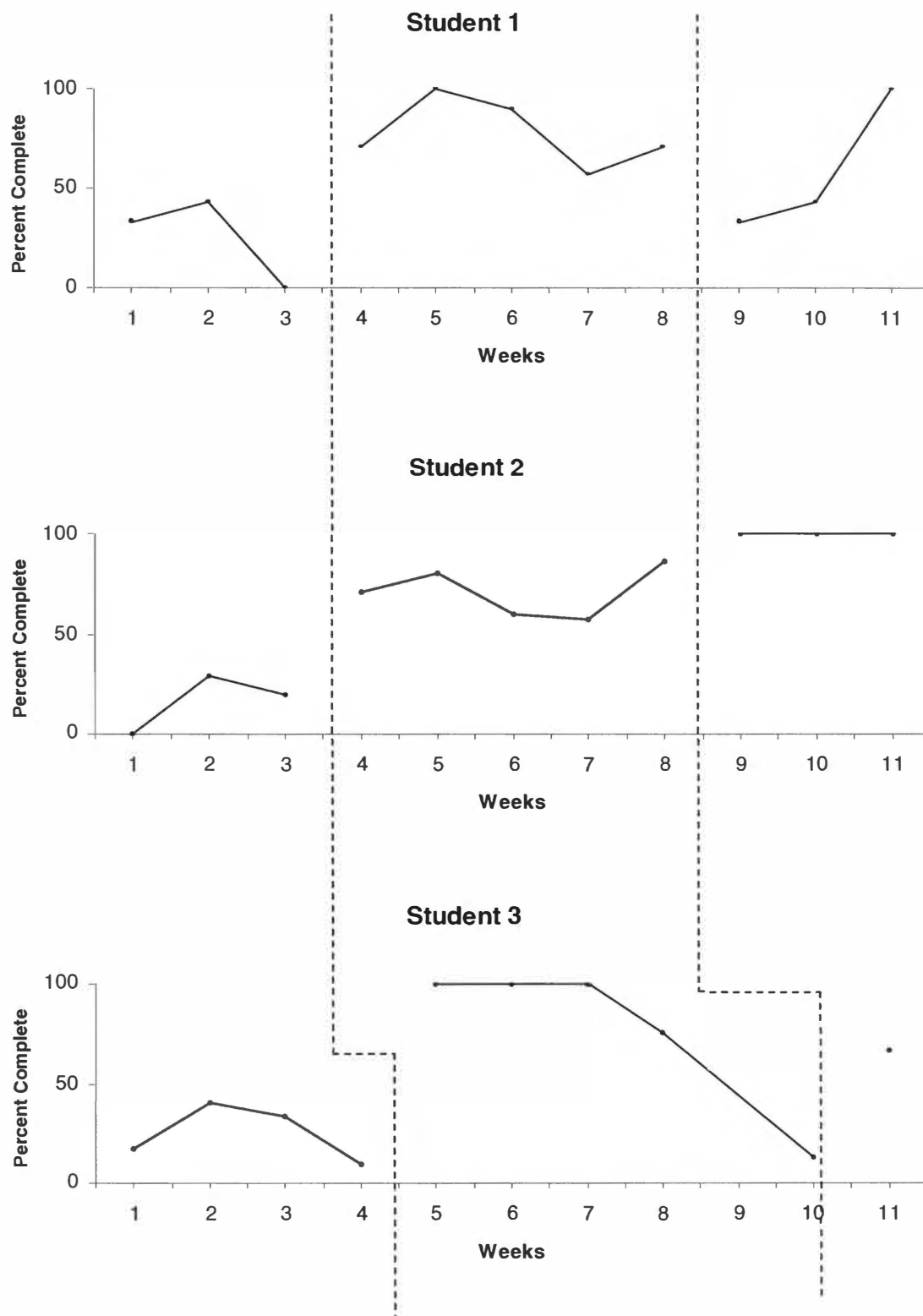


Figure 3. Enlarged Completion Graphs for Students 1, 2, and 3

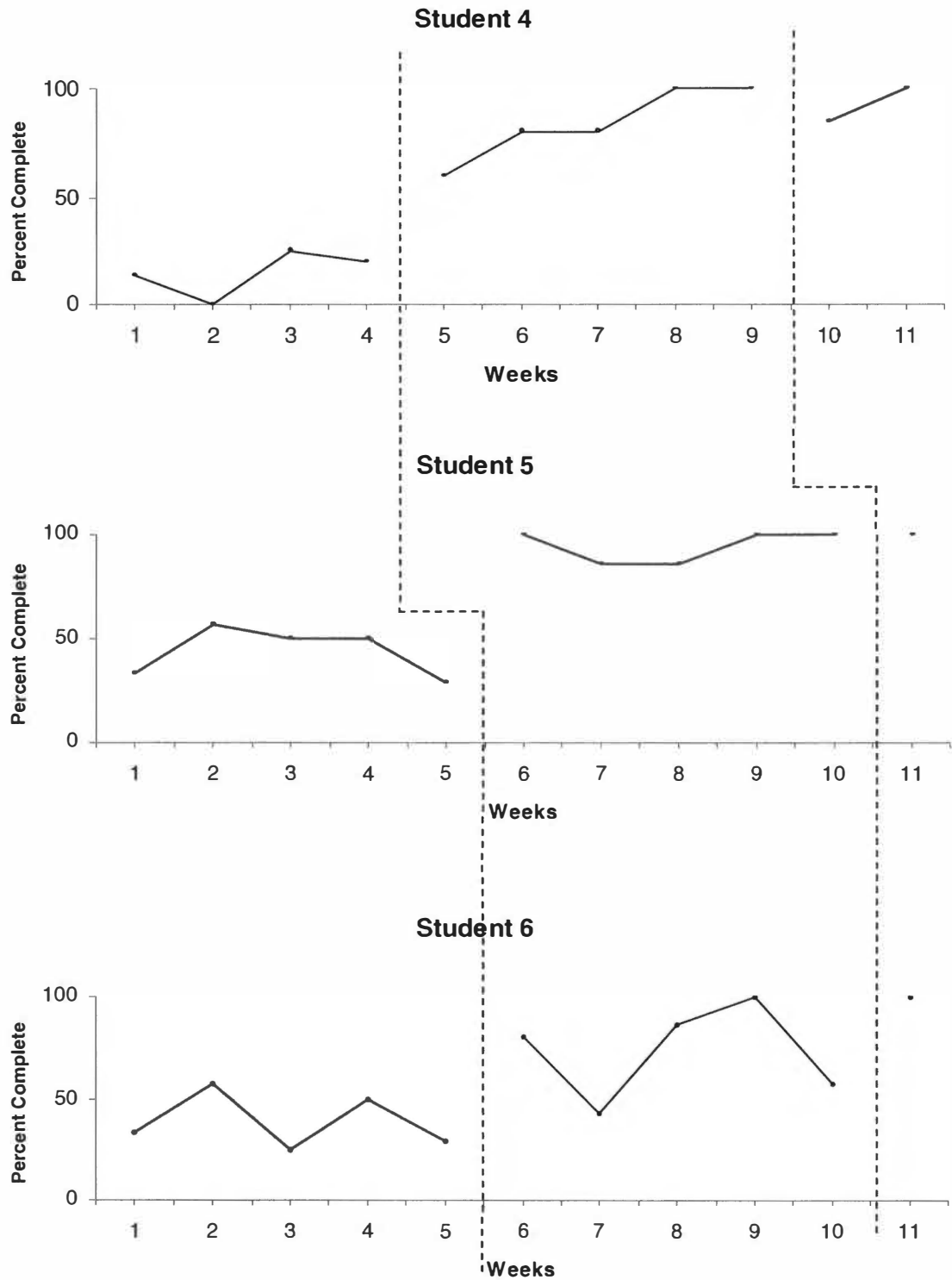


Figure 4. Enlarged Completion Graphs for Students 4, 5, and 6

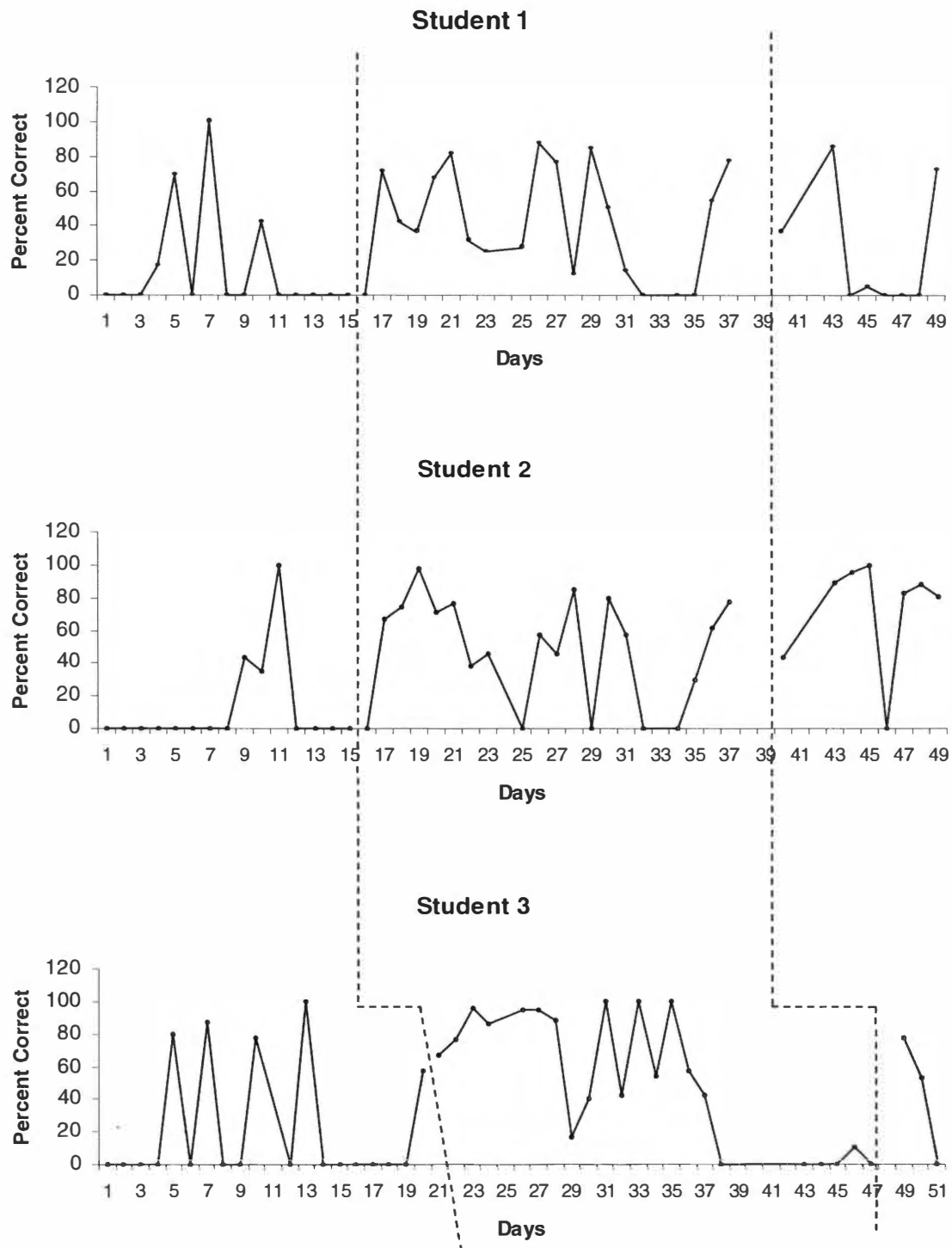


Figure 5. Enlarged Accuracy Graphs for Students 1, 2, and 3

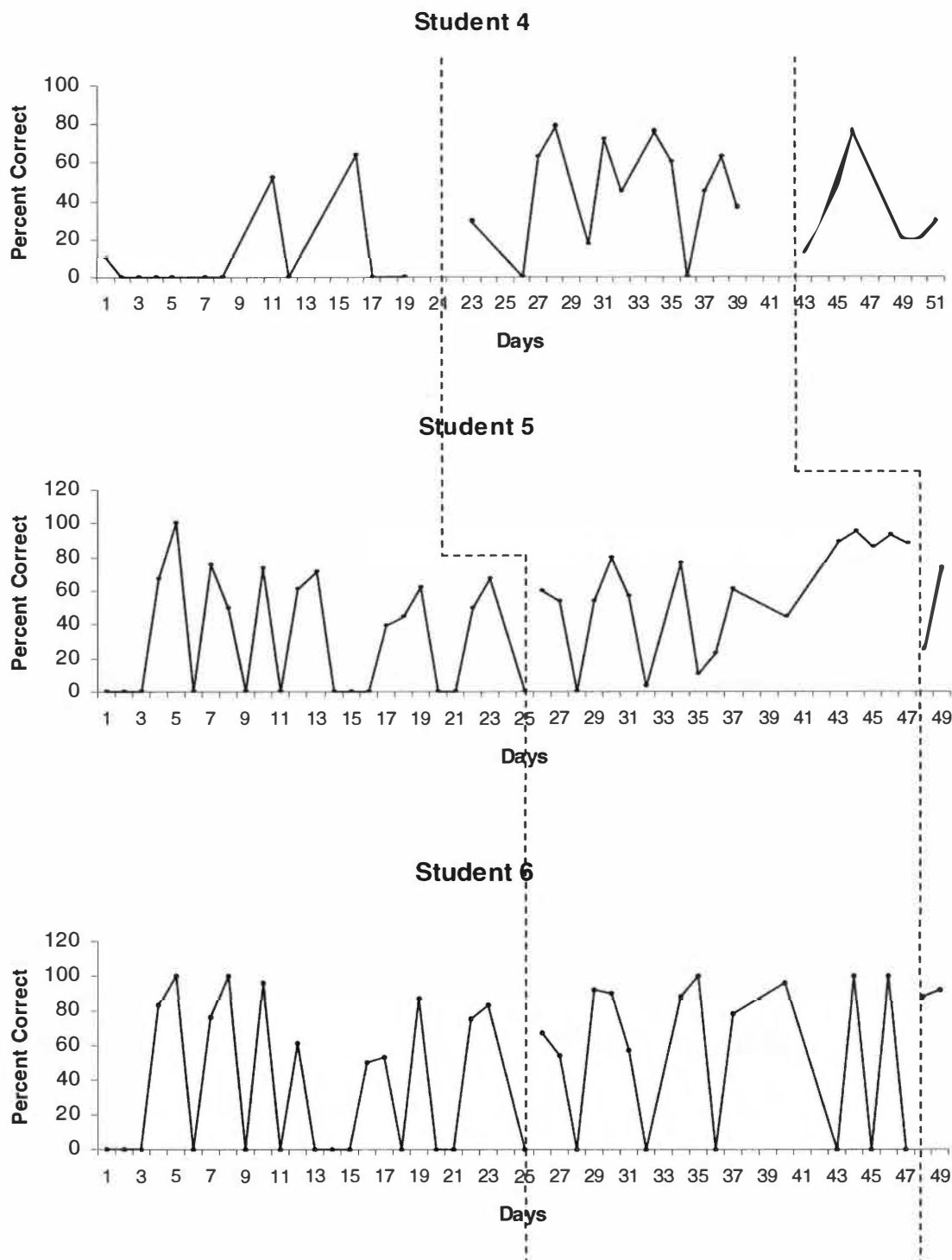
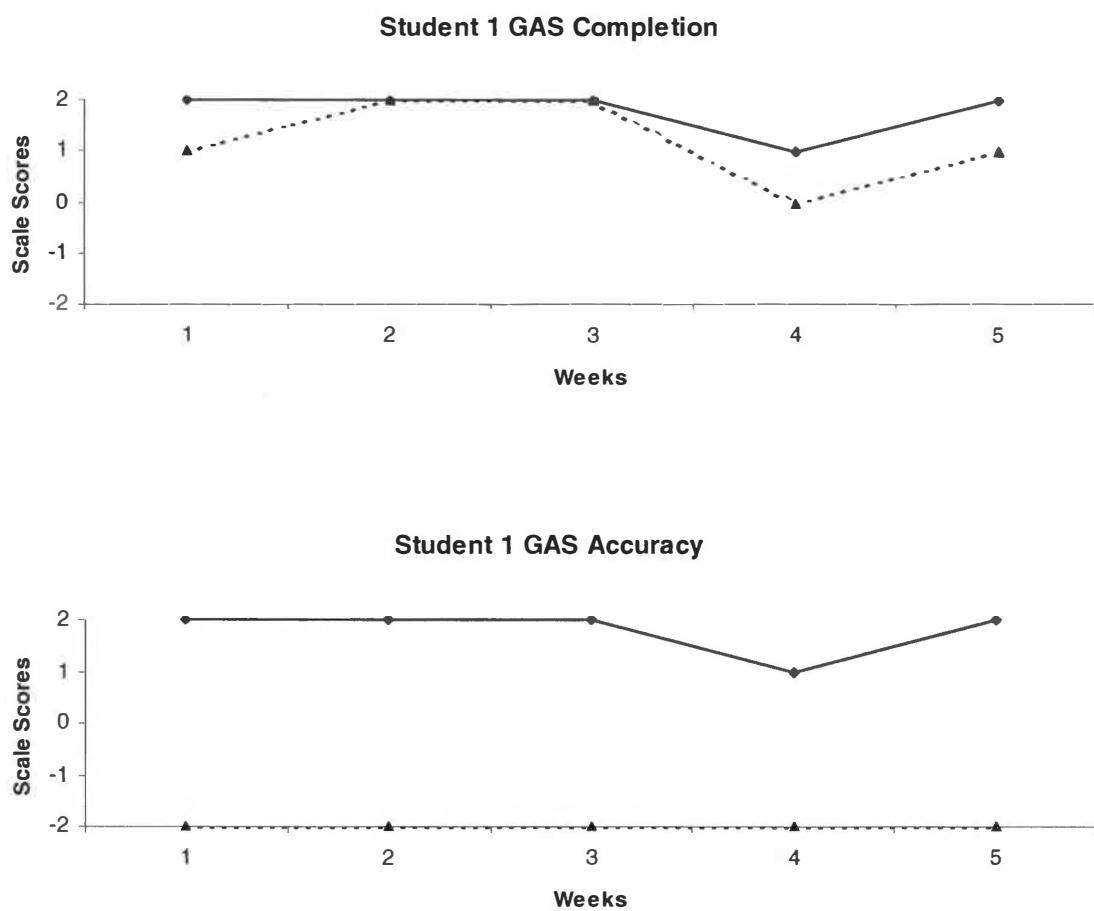
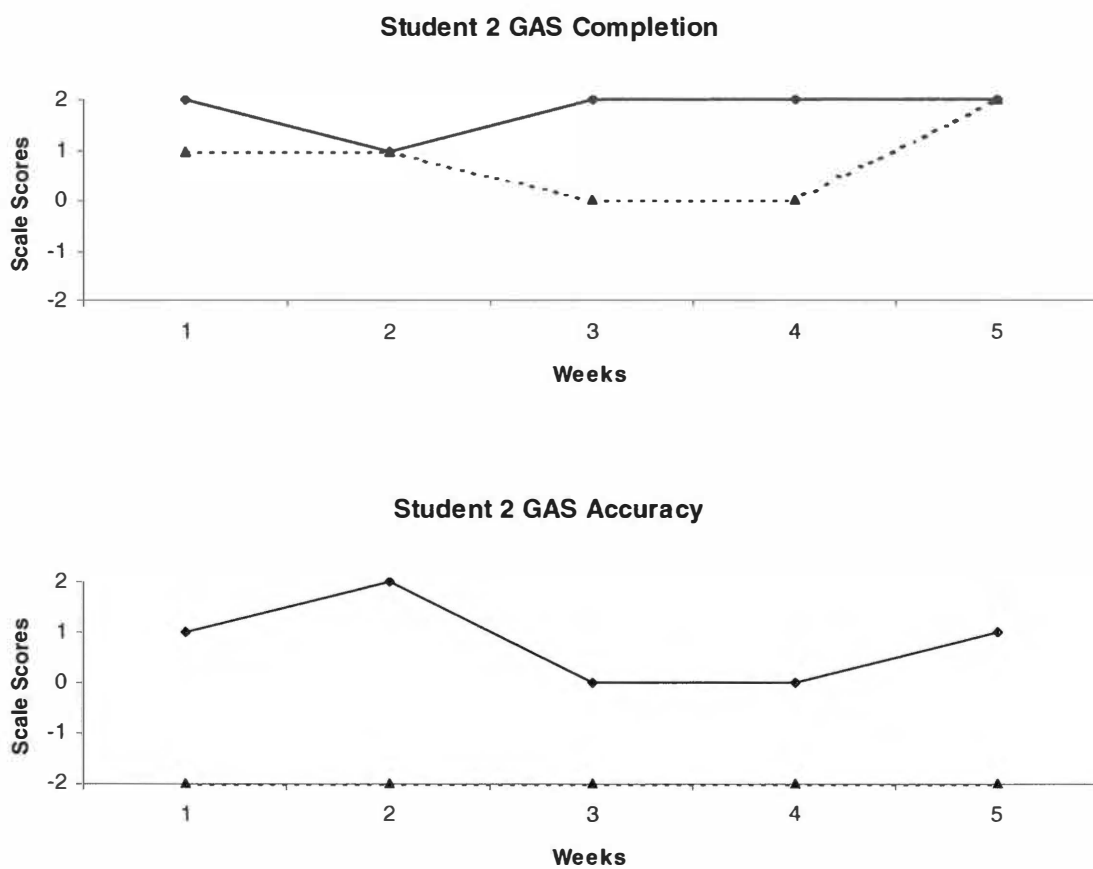


Figure 6. Enlarged Accuracy Graphs for Students 4, 5, and 6



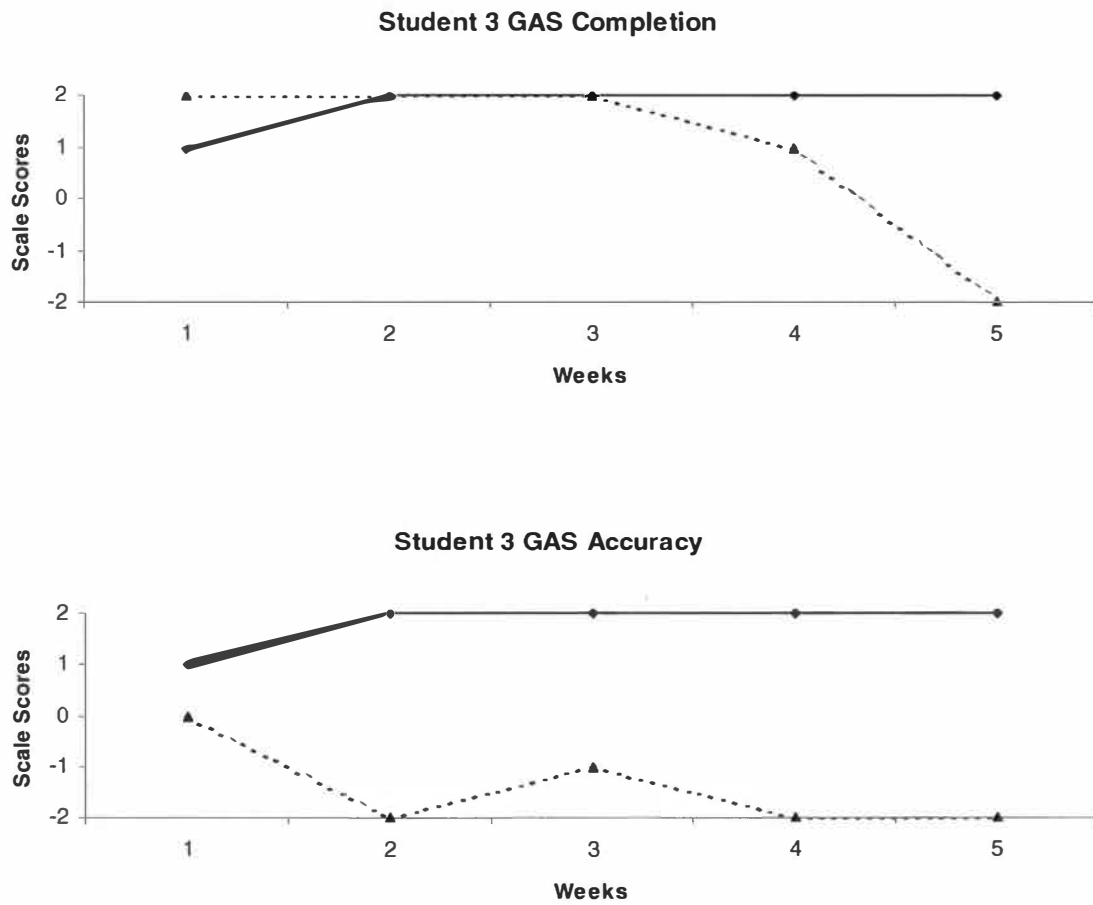
Note. Solid lines represent predicted scale scores. Dashed lines represent achieved scale scores.

Figure 7. Predicted and Achieved Scale Scores for Completion and Accuracy for Student



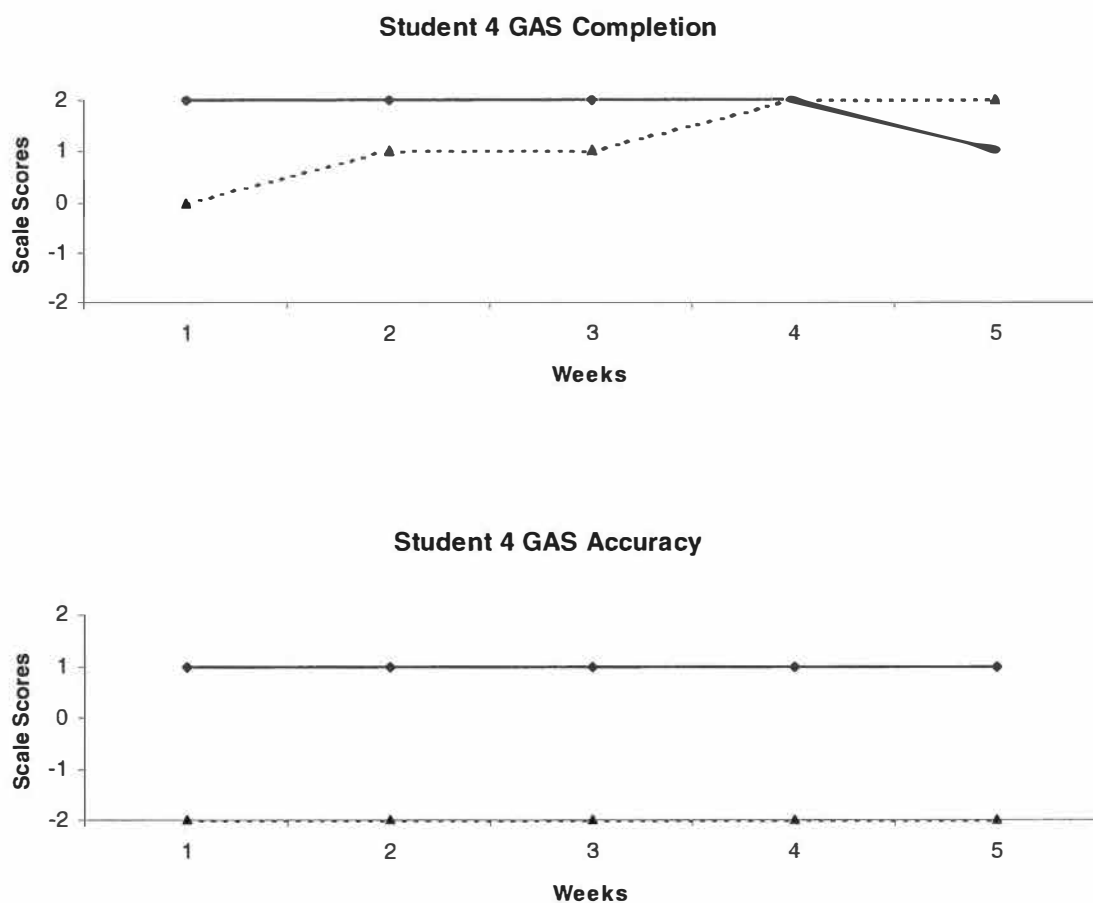
Note. Solid lines represent predicted scale scores. Dashed lines represent achieved scale scores.

Figure 8. Predicted and Achieved Scale Scores for Completion and Accuracy for Student



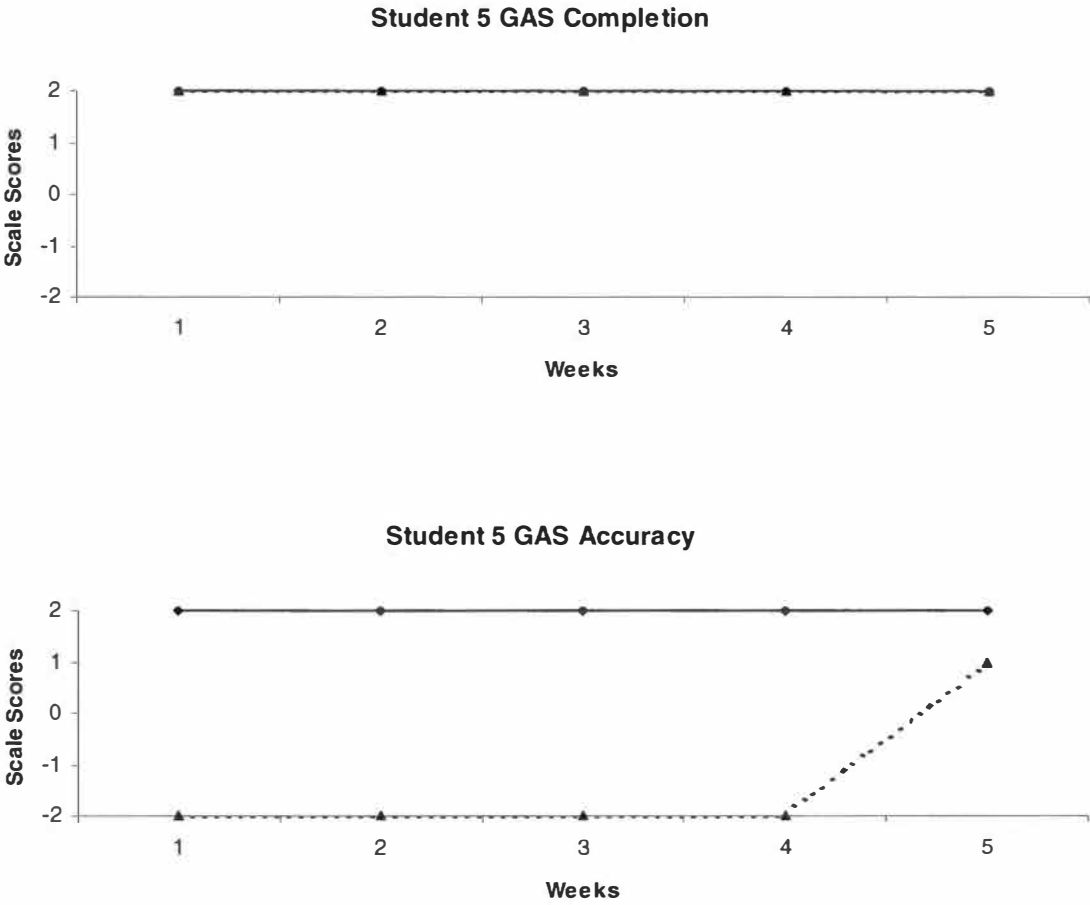
Note. Solid lines represent predicted scale scores. Dashed lines represent achieved scale scores.

Figure 9. Predicted and Achieved Scale Scores for Completion and Accuracy for Student



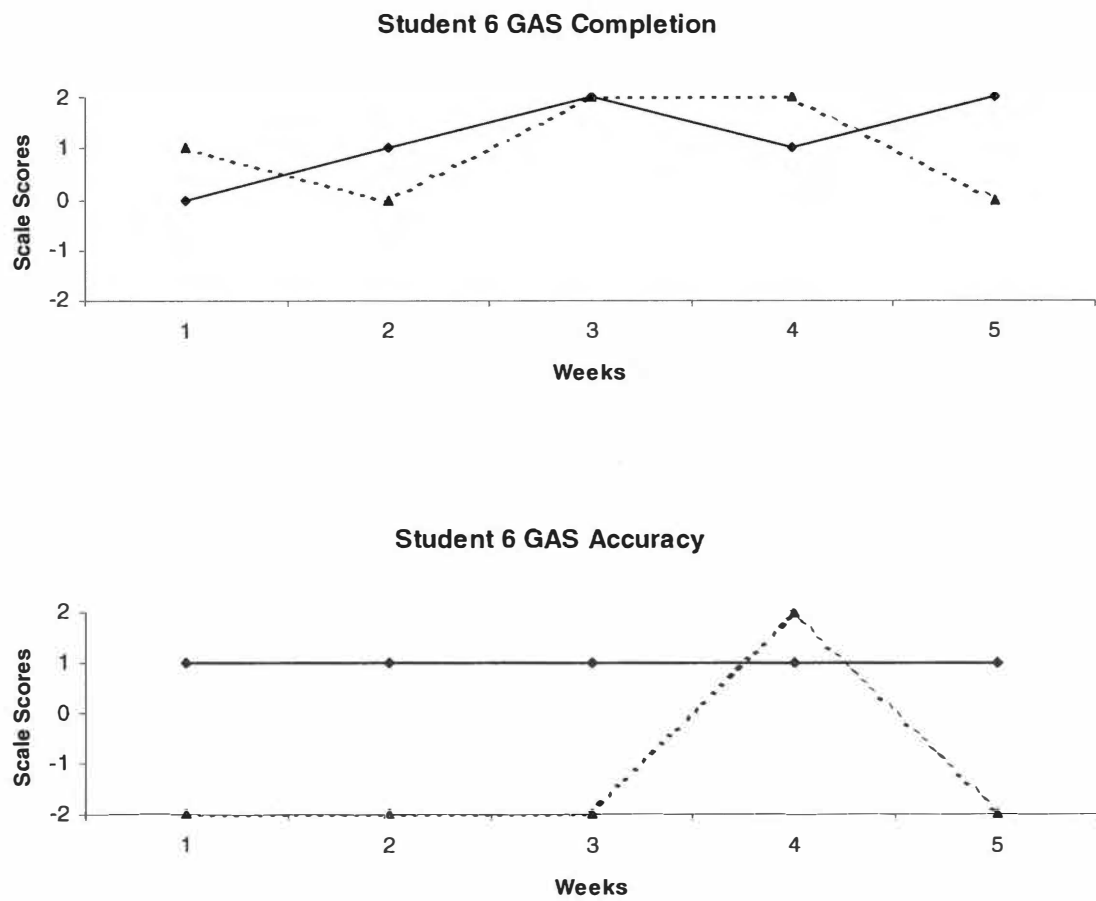
Note. Solid lines represent predicted scale scores. Dashed lines represent achieved scale scores.

Figure 10. Predicted and Achieved Scale Scores for Completion and Accuracy for Student 4



Note. Solid lines represent predicted scale scores. Dashed lines represent achieved scale scores.

Figure 11. Predicted and Achieved Scale Scores for Completion and Accuracy for Student 5



Note. Solid lines represent predicted scale scores. Dashed lines represent achieved scale scores.

Figure 12. Predicted and Achieved Scale Scores for Completion and Accuracy for Student 6

Appendix E
Form B Application

FORM B**APPLICATION****FORM B****IRB #** _____**Date Received in OR** _____*THE UNIVERSITY OF TENNESSEE, KNOXVILLE*

Application for Review of Research Involving Human Subjects

I. IDENTIFICATION OF PROJECT**1. Principal Investigator**

Jamie Yarbrough

Educational Psychology

A-525 Claxton Addition

University of Tennessee

tel. 865-692-6230

E-mail : jyarbro1@utk.edu**Research Assistant**

Holly Hutchins

Educational Psychology

A-525 Claxton Addition

University of Tennessee

tel. 865-673-2148

E-mail : hhutchin@utk.edu**Advisor**

Steve McCallum

Educational Psychology

A-525 Claxton Addition

University of Tennessee

tel. 865-974-8145

E-mail : mccallum@utk.edu**Department/Unit**

Educational Psychology

2. Project Classification: Research Project**3. Title of Project:** The Effectiveness of Solution-focused Brief Counseling in a School Setting**4. Starting Date:** Upon IRB Approval**5. Estimated Completion Date:** May, 2003**6. External Funding:** N/A

II. PROJECT OBJECTIVES

1. To identify off-task elementary school students based on percentage of classroom assignments completed on a weekly basis and weekly grades on those assignments.
2. To work with the school counselor to implement a five session counseling intervention designed to address off-task behaviors for each student included in the study. This counseling intervention will be based on the principles of Solution-focused Brief Therapy.
3. To record the percentage of classroom assignments completed five weeks before, during, and five weeks after the intervention.
4. To utilize a single subject, multiple baseline across participants research design to assess knowledge gained from the intervention.
5. To use Goal Attainment Scaling in conjunction with counseling to help children identify and achieve selected goals.
6. To determine the concurrent validity of the Goal Attainment Scales, by comparing student's predicted outcomes to actual completion rates.

III. DESCRIPTION AND SOURCE OF RESEARCH PARTICIPANTS

The research participants will be in the 5th grade at XXXXXXXXXXXX Elementary School in the XXXXXXXXXXXX School System. Permission to conduct this research was obtained from the XXXXXXXX Director of Schools and from the principal at XXXXXXXXXXXX Elementary School.

Students will be chosen for participation based on the percentage of assignments that are completed in the classroom. Selected students will be given parental consent forms to participate in the intervention. All those who return signed permission slips will be given the opportunity to participate in the study. Janice Green, the Curriculum Coordinator, and Carla Monday, the school counselor, have agreed to recruit teachers who will be willing to participate in the study. They will then coordinate with teachers to identify children who meet the selection criteria. Ms. Monday will be responsible for distributing parental consent forms to the students selected.

The current goal is to have six students who have a large number of incomplete school assignments. It will be made clear to each parent and child that there is no penalty for choosing not to participate. Each student will receive 30 minutes of counseling one day a week, for a duration of five weeks.

IV. METHODS AND PROCEDURES

Students will be selected to participate based on the percentage of assignments that are completed in the classroom, and signed parental permission. Selected students will be informed as to the nature and approximate length of the intervention. The principal investigators will explain that participation is voluntary and that the student may drop out

of the study at any time without penalty. Returned consent forms for participants and non-participants will be kept in a locked filing cabinet in Claxton Addition, Room 526, in the College of Education at the University of Tennessee, Knoxville.

The co-principal investigators and research assistant will work with each student individually, with the assistance of the school counselor, Carla Monday. Ms. Monday's role will be to introduce the intervention to the selected students and give them parental consent forms to take home to their parents. She will also call the parents in an effort to increase support for the intervention. Jamie Yarbrough will be the primary counselor. Holly Hutchins will assist Ms. Yarbrough in the implementation of intervention activities. Additionally, Ms. Yarbrough will be in charge of collecting and analyzing dependent measure data. She will only have access to the percentage of assignments completed each week and the actual assignments, for grading purposes. She will not have access to student records. Students will participate in the intervention for thirty minutes, one day per week, for five weeks, and the intervention will be implemented during school during their Specials (music, art, etc.) period. This is the time deemed most appropriate by the school principal and counselor. Because these classes do not contain academic work, the students will not be required to make up missed assignments. The Solution-focused intervention includes techniques based on Solution-Focused Brief Therapy (SFBC). Activities include identifying problems and exceptions to each problem, setting specific goals to reduce the severity of off-task behaviors, and other topics appropriate for addressing off-task behaviors in the classroom. These will be used in each session conducted.

Additionally, sessions will focus on SFBC principles, such as identifying times that problem was solved to some degree and the importance of setting goals. Through an understanding of this principle, the students will learn to control their own behavior and expectations so that they are more realistic. It is our hope that implementing the SFBC-based intervention will increase maintenance and generalization of the knowledge and behaviors learned in the counseling program, in addition to increasing appropriate behaviors in the classroom.

The intervention will be implemented on school grounds but outside of the students' regular classrooms in a room designated by the school. Students will be given breaks as often as needed. There will be no penalty for a choice not to participate, and likewise, no reward for choosing to participate.

The percentage of assignments completed each week will serve as the dependent measure for the study. Another dependent measure will be percent of problems correct on these assignments (i.e. grades). Goal attainment scales will be developed for each student, and will be used to track progress throughout the study.

Results will be analyzed by graduate students and advisory faculty for the purposes of determining the effectiveness of the intervention.

V. SPECIFIC RISKS AND PROTECTION MEASURES

No physical, psychological or social risks to participants are expected. The risks are minimal and will be no greater than the activities regularly performed by the school counselor. It is not anticipated that the environment or the activity will produce significant discomfort. Students will be informed that they may withdraw from the activity at any time without penalty. Students will be allowed breaks as needed. The principal investigator, research assistant, and advisor with access to the data will be required to sign a confidentiality statement. Teachers, parents, and students will be provided investigators' office phone numbers so that they may call with questions or concerns.

VI. BENEFITS

The risks to participants are minimal to nonexistent. The benefits to participants include social interaction and the learning of classroom management strategies.

Ultimately, this project will lead to further understanding of the effectiveness of Solution-focused Brief Therapy in school settings. The results will be helpful to counselors and teachers by providing them with options in helping the students manage their behavior effectively.

VII. METHODS FOR OBTAINING "INFORMED CONSENT" FROM PARTICIPANTS

Selected students who are considered "off-task" based on percentage of classroom assignments completed will be given a consent form. These will be taken home by the students and returned to the teacher. The consent form will explain the intervention that will be implemented and the approximate amount of time students will be out of the classroom to participate in the intervention. In addition, the purpose of the research project will be included. The consent form will also explain that participation in the study is entirely voluntary. All students who return a signed consent form will be given the opportunity to participate in the intervention.

Each student selected to participate will be given an assent form. The form will explain the intervention as well as the approximate amount of time the intervention will take. The form will be reviewed with the student to assure understanding.

Consent and Assent forms will be stored in a locked file cabinet in Room 526, Claxton Addition, at the University of Tennessee, Knoxville.

VIII. QUALIFICATIONS OF THE INVESTIGATOR(S) TO CONDUCT RESEARCH

Jamie Yarbrough and Holly Hutchins are graduate students in the Ph.D. program in School Psychology in the Department of Educational Psychology. Both have been involved in the development of the intervention strategies and have been trained in their

implementation. They have completed required research courses as part of their academic curriculum and will receive additional training in the data analysis methods that will be used in this study. Jamie has earned a Master's Degree in Mental Health Counseling and has extensive applied experience in counseling troubled youth. The advising professor, R. Steve McCallum, Ph.D., has extensive applied work in developing academic interventions as a school psychologist. This entire research project is under the direction of the principal investigator, Jamie Yarbrough, a graduate student in the College of Education, and will be supervised by R. Steve McCallum, Ph.D., professor in the College of Education.

IX. FACILITIES AND EQUIPMENT TO BE USED IN THE RESEARCH

The facilities to be used for data collection will be the counseling room at XXXXXXXX Elementary School. Data analysis will be conducted in offices and computer labs in Claxton Addition, University of Tennessee, Knoxville.

X. RESPONSIBILITY OF THE PRINCIPAL/CO-PRINCIPAL INVESTIGATOR(S)

By compliance with the policies established by the Institutional Review Board of The University of Tennessee, Knoxville, the principal investigator(s) subscribe to the principles stated in "The Belmont Report" and standards of professional ethics in all research, development, and related activities involving human subjects under the auspices of The University of Tennessee, Knoxville. The principal investigator(s) further agree that:

1. Approval will be obtained from the Institutional Review Board prior to instituting any change in this research project.
2. Development of any unexpected risks will be immediately reported to the Compliances Section.
3. An annual review and progress report (Form R) will be completed and submitted when requested by the Institutional Review Board.
4. Signed informed consent documents will be kept for the duration of the project and for at least three years thereafter at a location approved by the Institutional Review Board.

XI. SIGNATURES

ALL SIGNATURES MUST BE ORIGINAL. The Principal Investigator should keep the original copy of the Form B and submit a copy with original signatures for review. Type the name of each individual above the appropriate signature line. Add signature lines for all Co-Principal Investigators, collaborating and student investigators, faculty advisor(s), department head of the Principal Investigator, and the Chair of the Departmental Review

Committee. The following information should be typed verbatim, with added categories where needed:

Co-Principal Investigator: Jamie Yarbrough, M.S.

Signature _____ Date _____

Co-Principal Investigator: Holly Hutchens

Signature _____ Date _____

Student Advisor: Steve McCallum, Ph.D.

Signature _____ Date _____

XII. DEPARTMENT REVIEW AND APPROVAL

The application described above has been reviewed by the IRB departmental review committee and has been approved. The DRC further recommends that this application be reviewed as:

☒ Expedited Review -- Category(ies): 7

OR

☐ Full IRB Review

Chair, DRC: Bob Williams, Ph.D.

Signature _____ Date _____

Department Head: Steve McCallum, Ph.D.

Signature _____ Date _____

Protocol sent to Compliance Section for final approval on (Date)

Approved: Compliance Section

Office of Research

404 Andy Holt Tower

Signature _____ Date _____

Appendix F
Parental Consent Form

PARENTAL CONSENT FORM

The effectiveness of Solution-focused Brief Counseling in a school setting

Dear Parents:

We are interested in using a “solution-focused” intervention that is designed to increase your child’s grades and completion of classroom assignments. This intervention consists of an individual counseling situation using “solution-focused” strategies. That is, children will participate in an individualized intervention designed to increase their completion of assignments and their grades.

Your child has been selected based on the percentage of assignments they have turned in during the first few weeks of school. We have identified some “solution-focused” activities that we believe would be particularly helpful. If you decide to allow your child to participate, they will take part in the intervention during regular school hours at times determined to be convenient by the classroom teacher. Total intervention time will be approximately thirty minutes per week for five weeks. Students will participate in the activities in a classroom designated by the school, outside of their normal classroom. Each child will be given breaks as needed throughout the intervention. The intervention consists of activities aimed at identifying previous successes in academic work, using those behaviors to positively impact present behaviors, and developing lasting strategies and goals to demonstrate appropriate classroom behavior. This strategy is designed to enhance school work by using “solution-focused” techniques (identifying exceptions to the problem and using those exceptions to enhance performance in school). The school counselor at XXXXXXXXX Elementary School and graduate students in the school psychology program at the University of Tennessee who have received thorough training in implementation of these activities will lead the intervention. The researchers will *not* have access to your child’s school records. They will only have access to the classroom assignments that your child turns in each week.

All results of this study will remain confidential. The consent forms will be kept for three years at the University of Tennessee. All researchers will be required to sign statements of confidentiality before participating in this project.

Your child’s participation is voluntary and you may decline for him/her to participate with no penalty, and likewise, no reward will be given for participation. Your child may also choose to withdraw from the study at any time. There are no inherent risks involved in your child’s participation in this study.

Contacts for Further Information: If you have questions at any time about the study or the procedures, you may contact the researchers, Jamie Yarbrough, Holly Hutchins, or Steve McCallum, UT faculty supervisor at XXX-XXXX, or the school counselor, Carla Monday, at XXX-XXXX

Please sign below if you understand the conditions of the study and agree to allow your child to participate if he/she is selected.

Name of Child (please print)

Parent's Signature _____ Date _____

***Optional:** We would like to audio-tape record each session with your child, to ensure that your child receives the same treatment as other children who participate in the study. These tapes would **ONLY** be available to the researchers in this project, and would be destroyed after the project is completed. Please sign below if you agree to allow your child to be audiotaped during this project

Parent's

Signature _____

Appendix G

Student Assent Form

STUDENT ASSENT FORM

The effectiveness of Solution-focused Brief Counseling in a school setting

(To be read to each participant)

I understand that this research project involves participating in some activities to help me turn in my classroom assignments.

If I choose to be in this project, I understand the following:

I will do the activities during school and they will take about 30 minutes, one day per week, for five weeks. These activities will be conducted during my special area classes.

I will work with the school counselor and a school psychology student from UT. They will work with me as individually. I will participate in the sessions, working on different types of activities to help me learn techniques to control my classroom behavior and turn in my classroom assignments.

I understand that I will not be graded for this work.

I understand that I do not have to participate in this project if I do not want to. I can take a break whenever I need to. I may drop out of the project at any time without penalty.

I understand that I may talk to Ms. Jamie Yarbrough, Ms. Holly Hutchins, or Ms. Carla Monday, at any time if I have questions about the project. I can ask my teacher to help me to get in touch with these individuals if I need them.

If I have any questions at any time about the study, I may contact the researchers, Ms. Jamie Yarbrough and Ms. Holly Hutchins at XXX-XXXX, or the school counselor, Carla Monday at XXXXXXXXXXXX Elementary School.

I will sign my name below if I agree to be in the project and if I understand all the things listed on this page. *(If a child is unable to sign his/her name, verbal consent will be documented by the researcher).*

Student's Signature

Date

Appendix H
Teacher Consent Form

TEACHER CONSENT FORM

The effectiveness of Solution-focused Brief Counseling in a school setting

I understand that this research project involves collaborating with graduate students from the University of Tennessee who will be working individually with several of my students.

If I choose to be in this project, I understand the following:

I will allow participating students to take part in the intervention during school and they will take about 30 minutes, one day per week, for five weeks. These activities will be conducted during special area classes. Students will not be required to make up work that they miss while participating in the intervention.

I will allow graduate students to access my students' weekly classroom assignments.

I understand that my students will not be graded for this work.

I understand that I do not have to participate in this project if I do not want to. I may drop out of the project at any time without penalty.

If I have any questions at any time about the study, I may contact the researchers, Ms. Jamie Yarbrough and Ms. Holly Hutchins at XXX-XXXX, or the school counselor, Carla Monday at XXXXXXXXXXXXXXXX Elementary School.

I will sign my name below if I agree to be in the project and if I understand all the things listed on this page.

Teacher's Signature

Date

VITA

Jamie Leigh Yarbrough is from Fayette County, Georgia, where she graduated from Sandy Creek High School in 1995. She received her Bachelor of Science in 1998 from the University of Georgia, where she majored in Psychology and minored in Spanish. She received her Master of Science in Mental Health Counseling in 2001 from the University of Tennessee, Knoxville. She is currently a graduate student at the University of Tennessee, Knoxville. She will be receiving her Ph.D. in Education with a concentration in School Psychology from this institution following the completion of an internship with the Monroe County School System, in Monroe County, Tennessee.