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WORKING ON WHAT WORKS (WOWW):

CLASSROOM-LEVEL IMPACT ON TEACHER AND STUDENT OUTCOMES

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WORKING ON WHAT WORKS (WOWW):

CLASSROOM-LEVEL IMPACT ON TEACHER AND STUDENT OUTCOMES

A DISSERTATION

Presented to the Faculty of the Graduate School of

St. Mary's University in Partial Fulfillment

of the Requirements

for the Degree of

DOCTOR OF PHILOSOPHY

in

Marriage and Family Therapy

by

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Abstract

The Working on What Works (WOWW) school-based intervention applies solution-focused theory and techniques to improve learning at the classroom level. This study evaluated WOWW's impact on student and teacher outcomes. Thirty classrooms were randomly assigned to treatment and control conditions, then compared on teacher-completed measures. Students who received WOWW experienced lower levels of internalizing and externalizing behaviors, including lower anxiety (p=0.000), sense of irrelevance (p=0.002), inattention (p=0.049), hyperactivity (p=0.044), impulsivity (p=0.044), and need for behavior correction (p=0.000). Overall externalizing behavior was also lower in students who had received WOWW (p=0.018). However, students in the treatment condition also scored lower on the closeness scale of the STRS-SF (p=0.000). These conflicting findings suggest that the WOWW intervention warrants further investigation.

Keywords: classroom-based therapy, solution focused, working on what works

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Chapter I- The Problem and Justification of the Study

Working on What Works (WOWW) is a solution-oriented, strength-based, manualized intervention that applies the principles of the family therapy model solution-focused brief therapy (SFBT) to the classroom setting (Berg & Shilts, 2005). The WOWW intervention is conducted by a coach trained to notice strengths, give empowering compliments, and help the class scale progress, set goals, and find exceptions to problems. The coach works with the entire class without singling out students or removing them from their peers. The intervention has been shown in pilot studies to improve student and teacher outcomes, increase student motivation, decrease teacher burnout, and increase student empathy for the teacher.

The purpose of this study was to discover whether WOWW improves classroom outcomes without burdening teachers or disrupting student learning time. The central concept being investigated is the effectiveness of a classroom-based, solution-focused mental health intervention at increasing teacher sense of efficacy, improving classroom relationships, and facilitating student success as measured by behavior, attendance, and academic performance.

This project was the first randomized, controlled study to test the WOWW intervention (Metcalf, 2013). It uses validated measures and a posttest-only experimental design to decrease test-retest bias. Unlike previous studies, this study has a large sample size (approximately 400 students and 30 teachers in 30 classrooms), randomizes classrooms between treatment and control, and utilizes a strong experimental design. Although not randomized on an individual student level, the results of this study are stronger than any previous design because the classrooms will be randomly assigned, thus combatting selection bias and decreasing to the greatest extent possible the variability between treatment and control groups.

The expected impact of this study was a measurable increase in teacher sense of efficacy in the classroom and student academic achievement. This study should also link student mental health to academic achievement by evaluating on a classroom level whether a strength-based, solution-focused intervention improves emotional, behavioral, and relational outcomes. This link is vital to increase funding of and research into the mental health treatment of low-income and at-risk students. The long-term goal is to use family therapy theory and techniques to decrease barriers to education.

Statement of the Problem

A quality education is an important predictor of lifelong success but is one too many students do not receive (Burchinal et al., 2011). Among the many things that contribute to poor educational outcomes are teacher burnout and untreated student mental health problems (Boyd, Loeb, & Wyckoff, 2005; Kraft et al., 2012). On school-based mental health teams, Marriage and Family Therapists (MFTs) offer a valuable systemic perspective (Laundy, Nelson, & Abucewicz, 2011). However, MFTs are not well known within the school setting, and their unique contribution is neither well defined nor well-researched. In fact, mental health theories and techniques are notoriously under researched within the school setting, yet the need for evidence-based solutions within education is substantial (Dinella, 2009).

The purpose of this study is to research an intervention that applies MFT theory to the classroom setting. Pilot studies have shown that this intervention may improve classroom culture and relationships (Brown, Powell, & Clark, 2012), offering the chance for MFTs to support teachers and improve student mental health in a uniquely systemic way. Exploring this intervention is important because it allows school-based MFTs to define their role with a unique service offering. It also allows the principles of systemic treatment to be tested in an educational

setting. According to previous literature, teachers consider student mental health to be a primary problem within classrooms (Mansour, Kotagal, DeWitt, Rose, & Sherman, 2002). Behavioral and emotional issues from ADHD to depression to family conflict have a significant impact on academic achievement (Charvat, 2012). These problems are made even worse when compounded by the stressors of poverty and racial discrimination (Jaffee et al., 2005). In addition, teachers consider addressing student mental health to be part of their job but feel underprepared to meet these needs (Kraft et al., 2012). This contributes to a sense of burden that decreases their job performance and impacts the quality of education in the classroom (Kraft et al., 2012). Teachers are open to a variety of supports in this area, to include more mental health training and the presence of a therapist in their classroom, but too often mental health providers do not collaborate with educators or are limited by scarce resources or large caseloads.

Mental health providers are sometimes integrated into the educational setting, but their role is often limited and their numbers insufficient to meet the growing problem of student mental health. According to Berzin et al. (2011), counselors, social workers, psychologists, and intervention specialists who work in schools often have enormous caseloads and do their best to identify those most in need of help. Their work includes everything from providing individual and group therapy (usually outside the classroom) to teaching social skills lessons to advocating for students in special education meetings. MFTs have recently gained a foothold in school-based work (Vennum & Vennum, 2013). However, they often duplicate the work of other professionals, a "necessary redundancy" (Laundy, Nelson, & Abucewicz, 2011, p. 388) that is useful for students but does not contribute to school professionals seeing MFTs as unique and valuable providers in their own right. By applying family therapy theories and techniques to school-based systems, MFTs stand to gain not just effective tools to help children, but also the

recognition of the MFT systemic identity and specialized training that may be invaluable as schools seek to address a variety of mental health issues.

This project uses a posttest, two-group randomized experimental design as a research design. Thirty classrooms were recruited from public and private schools in San Antonio, Texas. Of these, fifteen—the experimental group—were randomly selected to receive the WOWW intervention over the course of ten weeks. The other fifteen classrooms constituted the control group. After the intervention occurred, all measures were completed by the teachers in both the experimental and control groups; the absence of a pre-test countered testing bias. The independent variable is whether a classroom received the intervention. The dependent variables are teacher sense of efficacy, student-teacher relationships, student internalizing and externalizing behaviors, and student academic outcomes including attendance and math / reading levels. All dependent variables were measured using surveys administered to teachers after the WOWW intervention occurred in treatment classrooms. Using SPSS, this project conducted analyses of variance (ANOVAs) and covariance (ANCOVAs) on the data to compare post-intervention differences between the intervention and control group, while controlling for confounding covariates.

Theoretical Framework

The theoretical lenses of this research are systems theory to conceptualize the classroom as an arena in which MFT theories and techniques apply and the biopsychosocial theory to link mental health, classroom culture, poverty, and academic outcomes. More specifically considered are the unique philosophies that inform Solution-Focused Brief Therapy (SFBT): systems theory and social constructionism.

SFBT and other family therapy theories can be applied to the classroom because, according to general systems theory, any group of interacting parts (such as a classroom) bears certain similarities to other systems, like the family (White & Klein, 2002). For example, all systems influence their members. In the family this may look like an alcoholic falling back into old patterns after returning home after rehabilitation, while in the classroom a "problem child" may return to that role even after receiving individual treatment. Because of this similarity between systems, MFT theories and techniques have great potential for classroom and school-based application.

This project relies on the biopsychosocial model (Bronfenbrenner, 1979) to understand the influence mental health and social and emotional learning have on a student's ability to achieve academically. Although intuitive, the link between mental health and learning has not been well researched or documented. Engle's biopsychosocial model postulates that psychological factors such as mood, personality, and behavior interact with social (family, culture, socioeconomic status) and biological (biochemistry, genetics) factors to contribute to negative life outcomes including but not limited to medical conditions. Applied to education, this model implies that wider factors such as classroom relationships, the effects of poverty, and family problems may all have an effect on a child's learning and therefore deserve consideration when discussing academic achievement.

SFBT is built on the postmodern concept that no absolutes work in every situation at every time. Instead, the therapist pursues an understanding of "what works" in each situation—a query that must be answered for each family separately. SFBT itself was developed by researchers observing "what works" in family therapy, and the model almost exclusively relies on the expertise of the client to find exceptions to the problem, build on strengths, and do more

of whatever is working (Shazer, Dolan, & Korman, 2017). The epistemological position that underlies this perspective is social constructionism. In a classroom—as in any interactional system—meaning is created in relationship. By changing how something is discussed or experienced, one can actually change how it is manifested or perceived (Gergen, 2009). SFBT utilizes this by ensuring that "solution-talk" is more prevalent than "problem-talk," and the WOWW intervention specifically requires coaches to notice and articulate only the positives, remaining strength-based and sincerely complimentary throughout the sessions.

Research Question

This quantitative study uses a posttest-only, two-group randomized experimental design. The research question is, "Does the WOWW intervention impact teacher and student outcomes on the classroom-level?" This question was explored by examining the relationship between the independent variable (receiving the intervention) and the dependent variables of teacher sense of efficacy, student internalizing and externalizing behaviors, student-teacher relationships, and student academic outcomes. This study is based on the hypothesis that teacher and student outcomes will be significantly better in classrooms that received the WOWW intervention than in classrooms that did not receive the WOWW intervention.

Justification for the Study

This research addresses practical needs in several professions: school-based mental health, marriage and family therapy, and education. To the field of school-based mental health, this project will increase an understanding of systemic factors influencing student outcomes and highlight the potential in treating student issues in the context of their system rather than in isolation from it. Within family therapy, this project will increase the evidence-base for a solution-focused technique by applying an already well-researched therapy—SFBT—to the

empirically challenging context of the school. Finally, this project will contribute to the field of education by illuminating the link between emotional and behavioral issues, classroom culture, teacher performance, and academic achievement.

Exploring the problem in this way allows the MFT profession to further pursue the priorities of becoming evidence-based, expanding into schools, and applying systemic analysis and consultation beyond the family system. As a solution-focused intervention, WOWW applies systemic principles to the classroom. Developing evidence that this intervention is effective supports systemic claims, strengthening the arguments of family therapy. This evidence would also demonstrate the relevance of systemic claims to the school system, strengthening the case that MFTs have a valuable contribution to make to schools. Some systems thinkers suggest that in order to survive, the MFT field needs to not only expand beyond focusing solely on families but also develop interventions that are uniquely relevant to other systems (Terry, 2002). If this were to be done, the MFT role may be elucidated and expanded within the systems of business, the military, medicine, and educational institutions. This project takes an important step in this direction and holds enormous potential to advance the MFT profession.

In these ways, this research project contributes to the theory and knowledge of mental health in education, MFTs in schools, and classroom-level intervention research. With application to school psychology, school counseling, social work, and many other mental health fields, this outcome study is truly multidisciplinary in nature, applying principals traditionally pertaining to the family to broader systems. It also emphasizes the relevance of MFTs to the school context. This project takes a small but important step towards multidisciplinary collaboration and the expansion of systems thinking beyond the family.

Limitations

Several limitations of this study warrant consideration. First, although this study includes a significantly bigger sample size than any of the pilot studies, it is unclear as to whether comparing 15 intervention classrooms to 15 control classrooms will yield the statistical power necessary to generalize the data. Fifteen data points in each condition may not be enough to draw the necessary conclusions, particularly when examining the data based on within-group factors such as socioeconomic status and type of school (public vs. private).

Second, this study relies on teacher report and does not include student measures, limiting the sensitivity of the changes to those perceived or recognized by the teachers. The study also does not ask parents for their perceptions on their children's behavior limiting the generalizability of the study to the classroom context.

Third, although this study is randomized on the classroom level, student distribution between classrooms is rarely randomized. This limitation means that extraneous variables may not be distributed evenly between classes, challenging the equivalence of the control condition and potentially weakening the experimental design. This study plans to account for this limitation by collecting demographic data on students within the classrooms and controlling for each of these variables (e.g., income, and race) in the statistical analysis if it is determined that the conditions are non-equivalent.

Fourth, in this experimental design, classrooms in the control condition are not receiving a substitute treatment (such as having an educational tutor present in the classroom for an equivalent amount of time as the WOWW coach would be in the experimental classrooms); instead these classrooms are randomized to a "no treatment" condition. This categorization opens

the possibility that any effects discovered are the result of simply having another adult in the classroom one hour a week for ten weeks, not specific effects of the WOWW intervention.

Definition of Terms

Classroom level impact. The WOWW intervention occurs in the classroom and influences interactions and relationships at the classroom level (Kelly et al., 2012). Although classroom interactions undoubtedly influence other systems such as the individual student, the family, or the entire school, for this study the unit of data collection and analysis will be the classroom. To accomplish this, data will be collected and analyzed based on classroom aggregates. For example, instead of considering each student's behavior, the mean of all classroom behavior scores will be calculated and the number of behavioral referrals that occur in each classroom will be considered.

Student outcomes. Regardless of the value of mental health results, the primary purpose of a school is to help students learn (Dinella, 2009). For the purposes of this study, student outcomes refer to the ways the WOWW intervention changes students' behavior in the classroom, students' relationship to their teacher, and students' academic outcomes. These outcomes will be measured by teachers' reports of each student's behavior, teachers' rating of their relationship with each student, and teachers' reports of each students' attendance and academic performance.

Teacher outcomes. This study considers teacher outcomes to be those factors which influence teachers' abilities to create a positive classroom climate, manage student behavior, and deliver instructional content. These factors include their sense of their ability as a teacher (teacher sense of efficacy) and their ability to build relationships with the students (student-

teacher relationships), both of which are related to their ability to lead their students to academic gains (Tschannen-Moran & Hoy, 2008; Pianta & Steinberg, 1992).

Working on What Works (WOWW). According to Berg and Shilts (2005), the WOWW intervention was developed in Fort Lauderdale, Florida, to address the difficulties of recognizing student strengths within a school system characterized by negativity. Insoo Kim Berg and Lee Shilts applied solution-focused principles to whole-class interactions, giving strength-based feedback without disrupting class time or removing authority from the teacher. By instituting quality assurance measures and having a founder of the model provide the intervention training, this study will ensure accurate implementation of the model.

Chapter II- Review of the Literature

Past Research: The Current State of Knowledge

Student academic outcomes. Schools are often the primary provider of mental health services to school-age children (AAMFT, n.d.). However, families of children with mental health needs often see these needs go unmet, a likelihood that increases with the severity of the conditions and the poverty of the children (Ganz & Tendulkar, 2006; NAMI, 2014). Unmet mental health needs have been linked to a variety of educational concerns, including behavioral and emotional problems (Jaffee et al., 2005), bullying (Butler & Lynn Platt, 2007), and gun violence in schools (The White House, 2013). By allowing mental health needs to go untreated, schools decrease the chances of a student's academic achievement (Alva & de los Reyes, 1999) and educators miss a key window that could influence a child's lifelong chances for success. On the other hand, according to the National Alliance on Mental Illness (2014), "Children and youth who receive prompt, effective mental health care demonstrate surprising resilience, overcoming major challenges to thrive in school, home and the community" (18).

Because classroom issues occur in the context of the multiple systems, treatment from a perspective that considers complex interactions, symptom maintenance, and dysfunctional patterns may be particularly useful. Family problems are some of the most commonly reported issues among school-aged children (AAMFT, n.d.), and stressful life events outside of school often affect academic achievement (Alva & de los Reyes, 1999). Attention difficulties and aggressive behavior also become classroom problems, which impact the learning of both the affected student and his or her classmates. According to Georges, Brooks-Gunn, & Malone (2012), "Children with low attention, alone or in combination with aggressive behavior, made

fewer gains in test scores… additionally, having more children in the classroom with low attention was negatively associated with achievement gains" (961).

Teacher efficacy. Many factors influence a teacher's ability to teach. Teacher efficacy is key to any learning that happens in the classroom, and many systems of measurement have been dedicated to examining teacher proficiency. Further complicating the issue, a teacher's actual efficacy is entangled with their *sense* of efficacy. Teachers who feels good at their jobs perform better and vice versa. Furthermore, a lack of a sense of efficacy may indicate burnout, decreasing a teacher's ability to teach even more. Therefore, this study will examine teacher sense of efficacy as a key teacher outcome.

The WOWW intervention. In the WOWW intervention, a family therapist provides weekly feedback sessions to a classroom on positive progress toward learning goals. After meeting with the teacher individually, the WOWW coach observes and interacts with the classroom for 40 minutes. The coach then provides 15-20 minutes of feedback on what the students and teachers are doing right in front of the whole class. After three sessions of this procedure, the class sets goals around which the rest of the feedback will focus. At the end of each session, the class is asked to scale their progress towards meeting their classroom goals. The teacher is encouraged to continue this practice throughout the week. Seven additional sessions commence (one per week), for a total of ten hour-long classroom sessions. At no point are any students pulled out of class or worked with individually.

Guided by systemic principles of change, the WOWW program helps create systemic change at the level of an individual class by shifting the focus from deficits to strengths. The WOWW model does not work with any individual student; instead the intervention is always conducted with the whole classroom, a group of people with a pre-existing relationship. The

WOWW intervention is always process-oriented and relational. MFT interns are taught to be "process consultants," curiously and openly observing the system and intervening strategically. The goal of the intervention is to empower members of the system and improve the collaboration between teachers and students. According to pilot studies, WOWW appears to improve student-teacher relationships, build student empathy for the teacher, increase peer and teacher connectedness, help teachers become better at classroom management, and help students participate more fully in the classroom.

The WOWW model was developed by Insoo Kim Berg and Dr. Lee Shilts to apply the principles of Solution Focused Brief Therapy (SFBT) to the classroom. SFBT—considered one of the core systems therapies—was developed by Insoo Kim Berg and Steve de Shazer at the Milwaukee Brief Family Therapy Center (BFTC), which emerged from the Mental Research Institute (MRI) in Palo Alto, California. Some notable names in the field include William O'Hanlon (who did extensive work on the school as a system), Michelle Weiner-Davis, and Paul Watzlawick. SFBT is based in Witgensteinian philosophy (which has extensive parallels in the work of Salvador Minuchin and discusses systemic themes such as how 'reality' shapes structure and the meaning of language) and social constructionist thinking. According to Jay Haley, Milton Erickson was one of several practitioners in the 1950s who independently discovered brief therapy principles before the official construction of the SFBT model. Thus, the WOWW model is systemic and deeply rooted in family therapy history and theory.

Pilot studies. Six pilot studies have been conducted on WOWW, each with slightly different emphases and measures. The intervention has been applied to classrooms in several countries, from first grade to high school, in both urban and suburban schools, and using both quantitative and qualitative data collection. The pilot studies have measured variables such as

teacher sense of efficacy, the teacher-student relationship, and student behavior, motivation, and academic achievement. The results of the pilot studies suggest that WOWW may dramatically influence these variables.

Table 1

WOWW Pilot Programs

Source	Location	n	Population	Data Collection	Findings
Berg & Shilts, (2005)	Florida	206	12 classrooms 6th-8th graders	teacher report coach observation	improved pupil behavior (teacher report) improved student pride in their work
Kelly & Bluestone-Franklin (2008)	Chicago	unk	21 classrooms Elementary (K-8)	pre- and post-test teacher debrief	improved class behavior (teacher report) improved teacher sense of self-efficacy
Bruce, MacKintosh, & McDonald (2009) (as described in Brown et al., 2012)	Scotland	77	7 classrooms	student focus groups teacher questionnaires	positive class experience; improved behavior students viewed teacher more positively improved teachers' practice and perception
Berzin, O'Brien, & Tohn (2012)	Mass.	200	9 classrooms second grade	pre and post teacher surveys student administrative data	improved teacher sense of efficacy improved student focus and effort
Brown, Powell, & Clark (2012)	Aberdeen, Scotland	25	1 classroom 5-6 year olds	teacher's goals and ratings qualitative semi-structured interview	improved student class behavior better classroom relationships class goals met (according to teacher)
Vennum et al. (2015)	Kansas	unk	2 classrooms High school	teacher & student surveys	increases teacher efficacy; decreases burnout increases student participation & engagement decreased student disruptive behavior

After developing WOWW, Berg & Shilts (2005) conducted the first pilot study in twelve 6-8th grade urban classrooms in Fort Lauderdale, Florida. Six 6th – 8th grade classrooms (n=105) received the intervention; these outcomes were compared to six nonequivalent comparison classrooms (n=101). Through discussions with teachers and coach observations, the researchers determined that there were positive changes in teachers' perceptions of pupil behavior and student pride in their work. As described in M. S. Kelly, Liscio, Bluestone-Miller, & Shilts (2012), in this study, teachers in the intervention classrooms volunteered to receive WOWW. Comparison classrooms were selected at random from the rest of the middle school. Administrative data from the year the intervention was conducted (2004-2005) was later collected from the school board database and analyzed based on student absences, student

tardiness, suspensions, and standardized test scores (as compared to the 2003-2004 school term). According to the researchers, although statistically significant differences were not found in grades, suspensions, or standardized test scores, "classes in the experimental group showed significantly fewer excused absences and tardiness compared to those in the comparison group" (M. S. Kelly et al., 2012, p. 362). The researchers also reported that the intervention groups' grades were higher and numbers of suspensions lower than the comparison group, showing a trend towards the goals of the intervention, though not in a statistically significant way.

Kelly and Bluestone-Miller (2009) conducted a pilot study of WOWW in the Chicago Public Schools from 2006-2008 (also described in M. S. B.- Kelly, Blueston-Miller, Mervis, & Fuerst, 2012, and M. S. Kelly et al., 2008, 2012). Twenty-seven teachers in five urban schools volunteered to bring WOWW to their elementary classrooms through the Loyola Family and Schools Partnership Program. The measure used was a researcher-created scale that asked teachers to rate their own classroom management skills and how WOWW had impacted student behavior on a scale of 1 to 5. Based on a pre- and post-test design which included teacher debrief sessions, the researchers discovered statistically significant improvements in classroom behavior, teachers' perception of themselves as classroom managers, and how teachers believed that students would report their behavior. No control or comparison group was used and the researchers used the cutoff for significance of $p < .05$ for all but one of the indicators:

> "The findings are as follows:
>
> The WOWW program increased teachers' perception of their class as better behaved, $t(26) = 2.6$, $p < .01$, one-tailed.
>
> The WOWW program increased teachers' perception of themselves as effective classroom managers, $t(26) = 1.9$, $p < .05$, one-tailed.

> The WOWW program increased teachers' view of students as better behaved, as well as their sense that students would also report better behavior, $t(26) = 3.22$, $p = .05$ and $t(26) = 2.8$, $p < .05$, one-tailed." (M. S. Kelly et al., 2012, p. 364)

Bruce, Mackintosh & McDonald (2009; as cited in Brown, Powell, & Clark, 2012) conducted a mixed methods study in Scotland that collected qualitative data from student focus groups (n=77) and quantitative data from teacher questionnaires (n=7) in seven classrooms. According to focus group results, the students had positive experiences in WOWW sessions. They enjoyed hearing the coaches' feedback, believed the class had improved, and viewed their teacher in a more positive manner. The questionnaire revealed that the teachers believed WOWW had benefited their educational practice and changed their perception of the behavior and attitudes of their students.

In nine second grade classrooms in Massachusetts, Berzin, O'Brien, and Tohn (2012) conducted the WOWW intervention with 200 students in a suburban school district. Using a pre- and post-test design, the researchers collected teacher surveys and student administrative data (office referrals, behavior plans, report cards, and guidance counselor visits). Changes in the administrative data were compared to those shown in the previous year. Teachers' sense of efficacy improved in the areas of motivating students, establishing a classroom management system, and adjusting lessons for diverse needs. No differences were found in teacher stress or teacher-student relationships; however, an improved student ability to "stay on task" and "put forth best effort" was observed. This change had not occurred the year before in either the previous second grade or in the intervention class as first graders.

A primary classroom in Aberdeen, Scotland, also received the WOWW intervention, this time conducted by Brown et al. (2012). The twenty-five 5- and 6-year-olds and three adults (a classroom teacher, a pupil support assistant, and a deputy head teacher) reported positive impacts on behavior and relationships within the classroom, a benefit to every student in the classroom, improved student motivation, and an increased student willingness to work together and help each other. Additionally, teacher ratings for targets set with the WOWW coaches improved and were maintained at a longer-term follow-up.

Most recently, the WOWW intervention has been modified and applied to high school classrooms in Kansas. Vennum et al. (2015) found that teacher efficacy, student participation, peer and teacher connectedness, and student engagement increased in both classrooms, according to teacher and student surveys. Simultaneously, decreases occurred in student disruptive behavior, teacher burnout, and student boredom, frustration, and disengagement.

Critical analysis. These studies provide a broad perspective on the potential benefits of WOWW, its various applications, and its influence on a wide variety of variables. However, several limitations to the studies exist. Nearly every study recommended larger sample sizes using a randomized, controlled experimental design. Some of the researchers also provided other suggestions for future studies. These included involving parents in the intervention, finding a means of data collection other than self-report, collecting data on additional variables such as test scores, conducting multisite research, and using a multilevel modeling strategy—such as hierarchical linear modeling—to understand the intervention's impact at both the individual and classroom levels.

Although some variables in the pilot studies were well-operationalized and consistently measured, others (like pupil behavior and student pride in their work in Berg & Shilts, 2005)

were collected qualitatively, leading to vivid and useful testimonials from teachers and students but little data that can support the intervention becoming evidence-based. Still other constructs (such as teacher perception of their efficacy and whether the WOWW intervention had worked; see M. S. Kelly & Bluestone-Miller, 2009) were based on Likert scales that asked directly about those constructs. Although these results are useful in some contexts and make it possible to perform statistical analysis on the results, more rigorous measures may be helpful in establishing a more consistent evidence base.

Current Research: Extending the State of Knowledge

According to Engle's biopsychosocial model, which draws heavily on the systems theory of Weiss and von Bertalanffy, each larger system is made up of a hierarchy of smaller, less complex units. Each unit or hierarchical layer can be studied independently, but because of the interaction, both the whole and the part are relevant when discussing an outcome. Based on the principle of isomorphism, higher levels of systems influence lower levels and vice versa.

The influence of individual students' behavior on their learning and the impact of school culture on academic outcomes, although not thoroughly understood, have been explored in the literature. However, the impact of classroom level factors—such as the teacher-child relationship, level of positivity, and peer-to-peer interactions—on academic outcomes is only beginning to be investigated.

The strategy of this project links to the larger context of the literature by following pilot studies' recommendations to increase the sample size and randomize classrooms between treatment and control. The study includes thirty classrooms and collects data on 413 students and 30 teachers. This sample is larger than any previous study and allows statistical analysis among most variables with sufficient power to draw conclusions about the findings' significance.

Similarly, the randomization of classrooms between conditions allows most extraneous variables to be dispersed across conditions, which strengthens the case for generalization to populations beyond the research sample. This study also implements several of the additional suggestions mentioned in the pilot studies: collecting data on additional variables such as test scores and conducting multi-site research.

Solution-focused therapy. Among the models of family therapy, Solution-Focused Brief Therapy (SFBT) is the one that has received the most recognition for the effort put forth to become evidence-based. Now included in in SAMHSA's National Registry of Evidence-based Programs and Practices, SFBT is being applied in a wide variety of contexts and to various populations. Specifically, Kim and Franklin (2009) reviewed the application of SFBT to schools, determining that it had demonstrated usefulness with at-risk students but noting the need for more studies with improved research designs to be conducted on school-based populations. This research study continues the important work of developing an evidence-base for SFBT work in schools by testing a specific SFBT intervention in a unique systemic context—the classroom.

Mental health research. The strategy also allows professional practice to further understand the link between mental health and academic achievement. Research within schools is particularly difficult because when researching mental health, mental health providers have a responsibility to treat any student they identify as needing services. This has meant that previous studies of mental health and academic achievement have compared students *with* mental health conditions to students *without* mental health conditions or compared individual students' academic achievement before and after treatment. Grouping students in this way does not allow for generalizable results. In the first case, students who never needed mental health treatment are not equivalent to those who did. In the second, many other factors—key among them, student

maturation and development—could have contributed to academic gains, making it impossible to know what the specific effect of mental health treatment was on academic achievement.

This study avoids these problems by comparing classrooms of students without first identifying whether mental health services are needed. Students' individual need for treatment is not assessed, avoiding the ethical issue of not providing needed services when they are identified. However, mental health concerns are assumed to be present in classrooms and distributed relatively evenly between treatment and control. If classrooms of students that receive a mental health intervention perform better academically than those that do not, then mental health interventions are effective at improving academic outcomes. This link between mental health and academic achievement would be incredibly helpful to professional practice as well as to arguments for increasing mental health services in schools.

Classroom-based therapy. An individual student can be conceptualized as interacting within two concentric educational systems: the classroom and the school. In addition, the student belongs to a family system, which interacts with each educational system in relevant ways (see Figure 1). According to systems theory, the interaction between systems is relevant in understanding the behavior of each individual part (Becvar & Becvar, 2008). As this perspective is embraced, classroom level processes will increasingly be considered relevant to education, as will classroom mental health and family-teacher interactions.

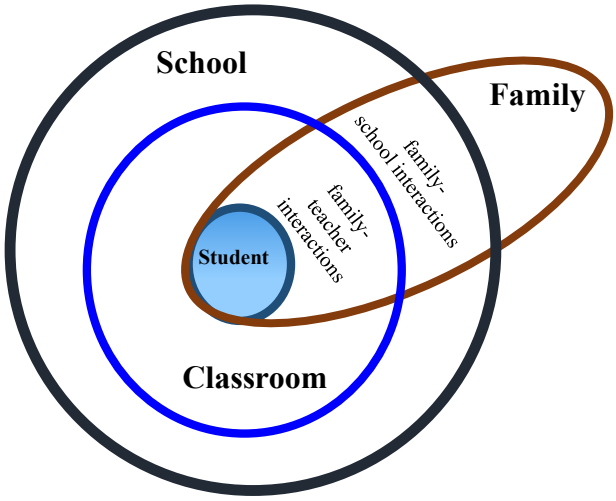

Figure 1. The Family, School, and Classroom Systems

The organizing principles of classroom-based interventions include three central roles for the therapist: working with the whole class, not just an individual child; considering how a classroom's structure and hierarchy may affect student behavior and learning; and assessing and intervening regarding individual mental health issues within the most directly affected system. Locating treatment in the classroom presents the opportunity for a therapist to observe a problem in the context in which it occurs, assess what classroom interactions and structures may be perpetuating that problem, and intervene directly in a way likely to achieve lasting success. This level of intervention would likely be particularly helpful in early elementary classrooms, which may function most similarly to a family system. Behavioral interactions and classroom culture play a large role in developing an effective learning environment in classrooms with young children because at this age behavior and attention difficulties are extremely disruptive (Georges et al., 2012), low parental involvement particularly influential (Hill & Craft, 2003), and the effects of poverty exceptionally significant (Dearing, Kreider, Simpkins, & Weiss, 2006).

Many tools found in the existing literature would ground classroom-based therapy securely within the current theoretical work that applies family concepts to the school system. For example, Gerrard and Soriano (2013) provide a handbook that describes how to implement a School-Based Family Counseling model that describes school-specific therapeutic skills and training. Laundy (2009) developed a model, called the Longitudinal Overview of Growth in Systems (LOGS), which incorporates family therapy meta-theory to describe how development along the individual and family life cycles interact with respective systems: individual, family, school, community, and culture. This approach draws heavily on medical family therapy and is used in the context of school-based work to determine systemic treatment options and assess a

child's functioning across time. Training for classroom-based therapy could draw heavily from these resources, modifying and adding when necessary for the classroom context.

Clinical application. Within the field of school-based mental health, MFTs are attempting to define a role that applies a family therapy perspective to educational systems. This requires evidence-based techniques that will remain true to systemic principles and integrate seamlessly into the school environment. As a solution-focused intervention, WOWW offers a way for MFTs to contribute to schools that is not currently being performed by other mental health professionals, such as school social workers or school counselors. The intervention can be performed by therapists working in a variety of capacities—in agencies, as private practitioners, or even as graduate interns. WOWW's evidence-based is clinically applicable for any MFT looking for a tangible way to improve education for children.

School-based family therapy has significant therapeutic advantages. Primary among these is the ability to intervene directly within the problem's environment (Vennum & Vennum, 2013). By contributing to multidisciplinary teams (Laundy et al., 2011), collaborating with other professionals invested in a student's success (Vennum & Vennum, 2013), and advocating for a systemic, rather than individualistic, perspective within the schools (Hinkle & Wells, 1995), family therapists can influence the system in which students spend the majority of their day. According to Vennum & Vennum (2013), MFTs currently find school-based practice systemic, effective, and rewarding. Prevention is much less expensive than reaction (AAMFT, n.d.), and within the school, a systems approach may be more important than any particular set of techniques (Gerrard, 2008).

MFTs may be uniquely qualified to offer their skills and expertise within the classroom context for many of the same reasons they are needed in schools. The graduate education

received by MFTs "emphasizes the utilization of multiple systemic lenses for assessment and treatment, which can be of timely and significant benefit to schools" (Laundy et al., 2011, p. 388), especially in the area of classroom management. In addition to systemic training, MFTs graduate with extensive experience providing treatment to multiple clients at a time. Although individual treatment is often useful and utilized in schools, much school-based mental health involves multiple people: several students, a student's family, teachers, administrators, or even groups of mental health providers. This is even more true in a classroom context, where a myriad of interactions characterizes the daily experience. Effective and efficient work in these settings requires not just an understanding of relationships and interactions, but extensive ability to join, intervene, and restructure a system.

Social justice implications. The contribution of a systems perspective to schools is especially important in the case of low-income students, and MFTs may have a role to play in helping low-income students overcome the achievement gap between them and their wealthier counterparts. According to Wetzel & Winawer (2004), the many layers of stress on low-income clients cause an individually centered treatment perspective to be futile, particularly among populations of at-risk adolescents. Children from low-income families are particularly susceptible to the negative effects of low parental involvement (Hill, 2001), and MFT strategies have been shown to reduce parental distress (P. Evans et al., 2012). Since parental stress is a key factor in in the growing achievement gap between wealthy and poor students (Lynch, 2015), the ability to support low-income parents is particularly significant.

Evans and Carter (1997) also claim school-based family counseling is particularly important in urban schools. Urban schools are overburdened, and at-risk communities can rarely provide adequate support for children's physical or emotional development. Locating therapeutic

services in the schools increases the access of vulnerable populations to mental health treatment (AAMFT, n.d.; Hinkle & Wells, 1995; Wetzel & Winawer, 2004). Wetzel and Winawer (2004) assert that family therapists in schools are creatively positioned to address access gaps, a claim echoed by the MFTs surveyed by Vennum and Vennum (2013), who indicated that school-based work increased accessibility to services, with greater consistency of care and fewer no shows among low-income populations. Among the mental health disciplines, the context-oriented paradigm of family therapy may be uniquely helpful to families of this population (Wetzel & Winawer, 2004). A debilitating shortage of mental health professionals, and research that suggests evidence-based family interventions cost significantly less than the behavioral alternatives such as incarceration, boot camps, or probation, all support the inclusion of family therapists in the schools (AAMFT, n.d.).

Implications for research. In addition to the benefits to students and teachers, classroom-based therapy has the potential to contribute significantly to research on the impact of mental health and education, both generally and from a systemic perspective. The practice of school-based mental health is greatly in need of outcome research. Until this point, the literature on family and systems work in schools has been primarily descriptive: “While the logic of combining school and family counseling interventions is compelling, the evidence-based support is sparse” (Gerrard, 2008, p. 14). Studies are needed that determine whether or not school-based MFT interventions produce positive outcomes, perform well compared to other mental health practices, and are cost-effective given the great expense of later responses to academic, mental health, and behavioral issues, such as academic remediation, residential treatment, and incarceration.

Although it seems intuitive that students' health and wellbeing would impact their academic performance, educational funding is often based on direct, proven correlates to achievement, not just overall health. For this reason, Vennum and Vennum (2013) call for research on the impact of MFTs specifically on *school outcomes*, not just mental health and family functioning. However, school-based research—especially when conducted on systemic interventions—encounters significant barriers; for example, Christenson and Carlson (2005) note that "…the methodological challenges for establishing the scientific rigor of family and parent interventions on school performance… cause it to be difficult to isolate the effects of parent and family intervention from school-wide reform strategies" (p. 526).

Classroom-based work offers significant research advantages for testing the efficacy of treatment. First, a classroom is small enough that a single therapist will likely be able to make an impact. Unlike a school in which a large number of students and many other variables may dilute the impact of adding a mental health provider, a classroom provides the opportunity to demonstrate mental health treatment outcomes among a targeted group of students. Second, when the whole class is the focus of treatment, measures such as classroom culture and behavior management become much more valuable indicators of the success of mental health interventions. Family engagement and teacher wellbeing—both linked to student academic growth (Dearing et al., 2006; Kraft et al., 2012)—also become relevant, allowing for more systemic hypotheses to be developed and tested. Finally, classroom-based treatment provides the opportunity to compare the academic achievement of classrooms that receive comprehensive mental health treatment to those that do not. Comparing individual treatment outcomes between students involves many confounds; spreading these confounds across a group of students allows the effect of overall mental health and classroom processes to be more easily observed.

Chapter III- Research Methods

Research Design

This project utilized a posttest only, two-group randomized experimental design. Data was aggregated and analyzed at the classroom level to preserve student confidentiality and make the classroom the level of investigation. Solving the research problem in this way was important to counter several threats to reliability including test-retest bias and maturation. Administering a pre-test can prime participants to know the intended outcomes of the study, skewing the results. In this study, the posttest only design increased reliability by ensuring that this test-retest effect does not occur. Because there were two groups—control and intervention—the results of the outcome measures were compared between groups instead of to pre-test data. This also countered the maturation bias. School measures are often impacted disproportionately by the time in the school year in which they are administered. Pre-tests and post-tests are therefore of limited value, since one is commonly given at the beginning of the year and then compared to another administration later in the year. This study design avoided this threat to reliability by comparing outcome measures administered to two groups of classes—both of which took measures at the same point of the year.

Subjects

This study included thirty classrooms, containing 558 students and 30 teachers from ten schools in San Antonio, Texas. Of these 558 students, 465 agreed to participate in data collection for this study, and complete data were collected on 413 students (N=413). These schools were recruited from the public, primarily rural schools of the Southwest Independent School District and private, primarily urban schools in the Catholic Archdiocese of San Antonio. Superintendents of both districts gave permission for this project to take place in their schools,

and principals from each of the 10 schools agreed to allow WOWW in their schools before teachers were contacted. Teachers were provided a $100 stipend to participate in the study, regardless of whether they were placed in the treatment or control group,

The classrooms used in this project were fourth and fifth grade classrooms. This age was chosen because, although the intervention has been applied to classrooms at all grades, fourth and fifth grade students share commonalities with both elementary and junior high classes, broadening the potential for generalization. To ensure accessibility to the study for students from all backgrounds, the informed consents were translated into Spanish and reviewed by a native speaker before being distributed to students and their parents in both English and Spanish.

Measuring Instruments

The relationship between the independent variable (receiving the intervention) and the dependent variables (teacher sense of efficacy, student-teacher relationships, student internalizing and externalizing behaviors, and student attendance and academic achievement) was examined based on teacher efficacy (as measured by the Teachers' Sense of Efficacy Scale, TSES, Tschannen-Moran & Hoy, 2001), classroom culture (as measured by the Student-Teacher Relationship Scale—Short Form, STRS-SF, Pianta & Steinberg, 1992), and student academic outcomes (as measured by teacher reports of attendance and academic achievement). Consistent with the study's proposed level of analysis, each student outcome was aggregated by classroom, thus preserving the anonymity of each student and allowing conclusions to be drawn about the impact of WOWW on student outcomes at the classroom level.

The following measures were administered to teachers after the intervention:

Teacher's Sense of Efficacy Scale (TSES). The Teachers' Sense of Efficacy Scale (TSES; Tschannen-Moran & Hoy, 2001) is a 24-item self-report measure with three sub-scales:

efficacy in student engagement, efficacy in instructional strategies, and efficacy in classroom management (see Appendix A). Respondents answer questions such as, "How much can you do to get through to the most difficult students?" and "To what extent can you craft good questions for your students?" on a 9-point Likert scale from "nothing" to "a great deal," and subscale scores for engagement, instruction, and management are calculated by computing the unweighted means of the items within each factor. Tschannen-Moaran and Woolfolk Hoy (2001) demonstrated good reliability within the scale (alpha=.94) and each subscale (alphas=.87, .91, and .90 respectively). A 12-item short form of this measure also exists with comparable reliability.

Student-Teacher Relationship Scale—Short Form (STRS-SF). The Student-Teacher Relationship Scale—Short Form (STRS-SF; Pianta & Steinberg, 1992) is a 15-item measure completed by the teacher on each student (see Appendix B). Two subscales—conflict and closeness—are measured on a 5-point Likert scale from "definitely does not apply" to "definitely applies". (The 28-item long form includes an additional subscale, dependency.) Sample questions include: "This child openly shares his/her feelings and experiences with me" and "This child and I always seem to be struggling with each other." Normative data by using this scale has been established for gender (boys/girls) and ethnicity (Caucasian/African American/Hispanic American); this scale has also been used to link student-teacher relationships in elementary school to later academic and social-emotional success (Decker, Dona, & Christenson, 2007; Hamre & Pianta, 2001).

Student Internalizing and Externalizing Behavior. A modified version of the 5-item Student Internalizing Behavior Teacher/Staff Version and the 3-item Student Externalizing Behavior Teacher/Staff Version of the Community and Youth Collaborative Institute School

Experience Surveys (CAYCI, Anderson-Butcher, 2015) was completed by the teachers on each student (see Appendix C). The original version of these scales asked teachers to rate their entire class at once using items such as "My students are anxious/worried," "My students are lonely," and "My students are impulsive." The revised version of this scale asks about each student individually, modifying the items to "This student is anxious/worried," "This student is lonely," and "This student is impulsive." The same 5-point Likert scale was used from "almost always" to "almost never." Although this change means that this measure can no longer be considered validated, the questions asked the teachers directly about student anxiety, impulsivity, and other conditions. By not listing specific behaviors, these measures relied on whatever indications each teacher considered to represent the construct. This information is useful because it measured the teachers' perceptions of their classroom and whether these constructs influenced the classroom.

Procedure

The WOWW intervention is manualized in Berg and Shilts (2005). Fidelity to the WOWW model was operationalized through completion of the Target Monitoring and Evaluation form (TME, Brown et al., 2012), bi-weekly supervision with the principal investigator, random observations of the WOWW intervention in the classroom, and training provided by the founder of the model before the project began. The TME form was used by several of the pilot studies to standardize the orientation meeting with the teacher that occurs before the intervention begins, as well as to ensure that the goals set by the teacher were addressed by the intervention. Bi-weekly supervision allowed WOWW coaches to ask any questions about the model implementation and to discuss difficulties with each other as they arose to promote uniform execution of the intervention. Direct observations of the intervention happening in the classroom were compared to the manualized model to provide further

clarification or remediation in any areas in which the WOWW coach was having trouble. Finally, having the WOWW coaches trained in the model by one of the intervention developers ensured correspondence with the use of the model in other projects, including the pilot studies. By instituting these quality assurance measures, this study took significant steps toward ensuring uniform and accurate implementation of the model.

Self-report surveys were administered to teachers in the school setting and were completed after the intervention was administered. One of these surveys, the Teacher Sense of Efficacy Scale, asked the teachers about their own beliefs and attitudes about their jobs. The other two surveys—the Student-Teacher Relationship Scale and the Internalizing and Externalizing Behaviors—asked about teachers' relationships with their students and each child's internalizing and externalizing behaviors. Teachers completed each of these on each student. Surveys were expected to take 45 minutes to an hour to complete. Teachers were compensated $100 for their time after completing the intervention and submitting the posttest.

Teacher report data were also collected on behavior, attendance, and whether each student was at or above grade level in math and reading. This information was compared between the treatment and control conditions. The student data was aggregated by classroom to protect student privacy. All data was collected in accordance with FERPA regulations.

Dependent variables. The research model assessed the effect of the WOWW intervention on:

- teacher efficacy (Teachers' Sense of Efficacy Scale, TSES, Tschannen-Moran & Hoy, 2001, subscales on instructional strategies and classroom management),
- student engagement (Teachers' Sense of Efficacy Scale, TSES; Tschannen-Moran & Hoy, 2001, subscale on student engagement; Student-Teacher Relationship

Scale, STRS-SF, Pianta & Steinberg, 1992; student attendance data by classroom), and

- student academic outcomes (grade and behavior referral data by classroom).

Independent variables. The independent variable was whether a classroom received ten weeks of the WOWW intervention. Assignment to treatment and control conditions occurred using the randomization function in Excel on codes for each classroom, after informed consents were collected from all classrooms whose teacher and principal agreed to participate in this study. (Those students whose parents did not agree to participate in data collection still received the intervention, as was required by their school, but no data was collected on these students.)

Extraneous (control) variables. The extraneous variables in this study included preexisting differences in classrooms including socioeconomic status, grade level, and teacher variables (motivation, investment, and experience). These variables were distributed across conditions using the random assignment of classrooms to treatment and control conditions. Some extraneous variables were anticipated to not be able to be controlled for, as initial assignment of students to classrooms was arranged by the principal at the beginning of the year and could not be randomized by this study. However, randomization on a classroom level allowed the impact of many of the extraneous variables to be controlled for.

Statistics

The results of this study were compiled in Excel and analyzed in SPSS. The means of the groups were analyzed using one-way analyses of covariance (ANCOVAs) for all outcome data or t-tests for the demographic data. Nonparametric data were analyzed using a Chi Square test of independence to determine the association between categorical variables. These tests were used to determine equivalence between treatment and control groups as well as to compare the post-

intervention results of the two groups of classrooms—intervention and control—to determine whether any statistically significant differences existed between the groups' mean scores in teacher sense of efficacy, student-teacher relationships, student internalizing and externalizing behaviors, and student academic outcomes. The hypothesis was that if the classrooms which received the intervention had significantly better outcomes than those that had not, this would provide evidence that the WOWW intervention contributes to improved teacher and student outcomes at the classroom-level.

Chapter IV- Results

The purpose of this study was to test the effects of a school-based family therapy intervention, Working on What Works (WOWW; Berg & Shilts, 2005), on teachers' sense of efficacy, teachers' evaluation of their relationships with students, and teachers' assessment of problem behavior. This study used a posttest only, two group design to compare treatment and control classes from ten schools. The research question was, "Does the WOWW intervention impact teacher and student outcomes?" The project measured teacher reported outcomes of sense of efficacy in engagement, instruction, and classroom management; closeness and conflict in the student-teacher relationship; student internalizing and externalizing behaviors; student attendance, and student math and reading levels.

Initially this project planned to use analyses of variance (ANOVAs) to identify the differences between treatment and control group means. However, an initial analysis of the sample determined that although most extraneous variables had been equally distributed between conditions, teacher experience had not: the treatment group contained more experienced teachers than did the control group. Because all outcome variables could theoretically be influenced by teacher experience, analyses of covariance (ANCOVAs) were determined to be a more appropriate way to analyze the differences in means between conditions, since it allowed for teacher experience to be controlled as a covariate. Therefore, ANCOVAs were used to calculate the statistical significance of the differences between treatment and control conditions in teacher sense of efficacy and related subscales, closeness and conflict in the student-teacher relationship, student internalizing and externalizing behaviors as individual items and subscales, and student academic outcomes, specifically student attendance and whether each student was at or above grade level in reading and math.

Description of the Sample

This study recruited 30 classrooms containing 558 students and 30 teachers from 10 schools in San Antonio, Texas. Of the 558 students in these classrooms, 465 agreed to participate in data collection for this study (83% of the total students in participating classrooms). Complete data was collected on 413 participating students (N = 413), representing an attrition rate of 9%. Table 2 describes the sample and each condition by participation and attrition, including the percentage of students in the class who consented to participate, those who dropped out of the study, and those included in the final sample.

Table 2

Description of Sample and Conditions by Participation and Attrition

	TOTAL		TREATMENT		CONTROL	
	N	% of Pop.	N	% of Pop.	N	% of Pop.
Population	558	100%	286	51%	272	49%
Consent	465	83%	225	79%	240	88%
Attrition	52	9%	21	7%	31	11%
Sample	413	74%	204	71%	209	77%

Of the 10 schools recruited, two were public and eight were private; seven were low income and three were not. The variable "Low Income" was defined as whether participating teachers at the school answered affirmatively to the question, "Is your school considered low-income or disadvantaged? This could be determined by the percentage of students who receive free-and-reduced lunch or through a government designation (Title I, etc.)."

The classrooms were randomized into treatment and control groups, with 15 classrooms in each group. This assignment resulted in 204 of the 413 student participants being in the treatment condition and 209 in control. Table 3 describes the sample and each condition by the categorical variables of public / private school, low income, and 4th or 5th grade. Table 4

describes the sample and each condition by the continuous variables of class size and teacher experience, the latter of which is detailed by class and by student.

Table 3

Description of Sample and Conditions by Categorical Variables

	TOTAL			TREATMENT		CONTROL	
	Schools	Classrooms	Students	Classrooms	Students	Classrooms	Students
Public	2	12	141	6	72	6	69
Low Income	2	12	141	6	72	6	69
Private	8	18	272	9	132	9	140
Low Income	5	8	98	4	48	4	50
4th Grade		15	192	7	90	8	102
5th Grade		15	221	8	114	7	107
TOTAL	10	30	413	15	204	15	209

Table 4

Description of Sample and Conditions by Continuous Variables

	TOTAL			TREATMENT			CONTROL		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Class Size	30	18.60	4.90	15	19.07	5.24	15	18.13	4.66
Tchr Exp by Class	30	2.67	1.54	15	3.33	1.40	15	2.00	1.41
Tchr Exp by Student	413	2.77	1.60	204	3.50	1.47	209	2.05	1.47

Note: Tchr Exp = Teacher Experience rated on a five point scale with 1 = 0-5 yrs, 2 = 6-10 yrs, 3 = 11-15 yrs, 4 = 16-20 yrs, and 5 = > 20 yrs.

Randomization on a classroom level was intended to control for preexisting differences in the extraneous variables, including 1) income of school, 2) type of school (public / private), 3) grade level, 4) class size, and 5) teacher experience. Sample attrition and percent of classroom that participated in the study were also considered, as a difference between this variable among treatment and control groups could impact the findings. To determine whether randomization

successfully created equivalence between the treatment and control groups, categorical variables (income, type of school, and grade level) were analyzed using chi squared tests while continuous variables (class size, attrition, participation, and teacher experience) were analyzed using independent-samples t-tests. Table 5 contains the results of these analyses.

Table 5

Equivalence of Status Variables

Categorical Variables	Chi Square	df	p
Low income	0.133	1	1.000
Public/Private	0.000	1	1.000
Grade level	0.000	1	0.715
Continuous Variables	T-Test	df	p
Class size	0.515	28	0.305
Teacher Experience	2.597	28	0.007*
Percentage consent	-0.599	28	0.277
Attrition	-0.373	28	0.356

Note. Categorical variables were analyzed using a chi squared test; continuous variables were analyzed using a t-test. *$p < 0.05$.

Conditions were found to be equivalent on all variables except for teacher experience. There was a significant difference in teachers' years of experience between the treatment (M=3.333, SD=1.397) and control (M=2, SD=1.414) conditions; t(28)=2.597, p=0.015. This means that despite randomization, the treatment condition contained more experienced teachers than did the control condition.

Although ANCOVAs can control for an extraneous variable while calculating differences in means, they rely on assumptions of equal sample sizes and equal numbers of cases between conditions. Within this sample, the distribution of teacher level of experience among conditions is uneven enough to create substantial problems in the power of these analyses. For example, as seen in Table 6, when teacher experience is divided into "high" and "low" categories based on the median value (2.5), only 4 classrooms and 52 students are in the low experience x treatment

condition. This asymmetry exists regardless of how the data is divided and calls into question whether this sample size provides adequate power to determine whether teacher experience is a factor in the difference between means of treatment and control groups. In other words, even if the ANCOVA controls for the variable of teacher experience, the lack of sufficient power increases the likelihood that the analysis will produce a Type II error, finding that teacher experience did not significantly impact the result when in fact it did.

Table 6

Distribution between High and Low Teacher Experience by Condition

	TREATMENT			CONTROL		
	N	*M*	*SD*	*N*	*M*	*SD*
Low Experience by Classrooms	4	1.500	0.577	11	1.273	0.467
High Experience by Classrooms	11	4.000	0.894	4	4.000	1.155
Low Experience by Students	52	1.519	0.505	144	1.167	0.374
High Experience by Students	152	4.184	0.809	65	4.015	1.008

Note: High / Low Teacher Experience was calculated based on the median teacher experience (2.5).

Due to this unequal sample size within some conditions of teacher experience, teacher experience may not be able to be eliminated as an alternative explanation. To determine whether this concern is warranted, a power analysis was conducted based on the distributions detailed in Table 6 above. The power analysis identified that to compare the means of the treatment and control groups of within “high” and “low” teacher experience conditions to a power of 80%, the sample size for each sample separately would have to be 22 classrooms (mu1=3.33, mu2=2, SD=1.54, alpha=.05). For students, at a power of 80% (mu1=3.50, mu2=2.05, SD=1.47, alpha=.05), the sample size for each condition would need to be 17 students, which is a criterion met by the above dichotomous variable but not by the 5-level continuous variable of teacher experience as it was measured by this study, since one of the conditions has 0 students within the

high experience x control condition. This power analysis supports the concern that unequal sample sizes between groups in the teacher experience condition threatens any conclusions that teacher experience is not influencing the difference between treatment and control means.

Description of the Variables

Descriptive statistics were calculated on each of the major variables, subscales, and each item to assess for normal distribution. Because ANCOVAs assume normality of sampling distribution, when the skew and kurtosis fell outside of acceptable levels for any scale, that scale was transformed using a logarithm (base 10). This allowed the normally distributed geometric means to be compared instead of the sample means. Descriptive statistics for the transformed data were analyzed to ensure normality of distribution and allowing ANCOVAs to be conducted.

Teacher sense of efficacy. Teacher sense of efficacy was measured using the Teacher Sense of Efficacy Scale (TSES). A high score on the total TSES indicated that the teacher felt a high sense of efficacy about their teaching overall, and a high score on each of the subscales indicates that the teacher felt a high sense of efficacy regarding their ability to engage, instruct, and manage students, respectively. Scores for the total scale and each subscale were calculated by averaging the relevant items. Table 7 contains the descriptive statistics for this scale, for each relevant item, and for each of the subscales of the total sample. The results show skew and kurtosis within acceptable levels for all items and subscales, indicating a relatively normal distribution within the range. The standard error for skew was 0.427 and the standard error for kurtosis was 0.833 for each item and scale.

Student-teacher relationship. Teachers' perceptions of their relationship with each student was measured using the Student-Teacher Relationship Scale—Short Form (STRS-SF),

which teachers were asked to complete on each student. The subscales were closeness and conflict, and a high score on each subscale indicating a high level of the relevant feature. Table 8

Table 7

Descriptive Statistics for the Teacher Sense of Efficacy Scale (TSES)

	N	M	SD	Range			Skew	Kurtosis
				Potential	Actual			
Item 1	30	6.800	1.540	1 - 9	3	- 9	-0.066	-0.170
Item 2	30	7.000	1.509	1 - 9	5	- 9	0.065	-1.323
Item 4	30	6.967	1.520	1 - 9	4	- 9	-0.130	-1.007
Item 6	30	7.833	1.085	1 - 9	6	- 9	-0.340	-1.216
Item 9	30	7.467	1.167	1 - 9	5	- 9	-0.054	-0.925
Item 12	30	7.000	1.414	1 - 9	4	- 9	-0.392	-0.304
Item 14	30	6.733	1.363	1 - 9	4	- 9	-0.092	-0.213
Item 22	30	6.867	1.383	1 - 9	4	- 9	-0.332	-0.816
Engagement	30	*7.080*	1.060	1 - 9	5.0	- 9.0	-0.110	-0.660
Item 7	30	7.333	1.213	1 - 9	4	9	-1.196	2.272
Item 10	30	7.500	1.137	1 - 9	5	- 9	-0.075	-0.778
Item 11	30	7.367	1.377	1 - 9	4	- 9	-0.636	0.016
Item 17	30	7.100	1.322	1 - 9	4	- 9	-0.292	-0.072
Item 18	30	7.033	1.426	1 - 9	4	- 9	-0.215	-0.743
Item 20	30	7.333	1.241	1 - 9	5	- 9	-0.228	-0.592
Item 23	30	7.167	1.147	1 - 9	5	- 9	-0.201	-0.347
Item 24	30	6.933	1.413	1 - 9	3	- 9	-1.211	1.476
Instruction	30	7.233	1.051	1 - 9	4.5	- 9.0	-0.503	0.440
Item 3	30	7.767	1.278	1 - 9	5	- 9	-0.698	-0.529
Item 5	30	8.167	1.177	1 - 9	5	- 9	-1.161	0.299
Item 8	30	7.967	1.129	1 - 9	6	- 9	-0.547	-1.199
Item 13	30	7.633	1.450	1 - 9	4	- 9	-0.830	-0.123
Item 15	30	7.600	1.248	1 - 9	5	- 9	-0.415	-0.702
Item 16	30	7.700	1.291	1 - 9	4	- 9	-1.044	1.064
Item 19	30	7.267	1.388	1 - 9	5	- 9	-0.100	-1.077
Item 21	30	7.300	1.208	1 - 9	5	- 9	-0.249	-0.463
Management	30	7.687	1.019	1 - 9	5.5	- 9.0	-0.674	-0.277
TOTAL TSES	30	7.327	0.958	1 - 9	5.1	- 9.0	-0.470	0.205

displays the descriptive statistics for the sample. The standard error for skew was 0.12 and the standard error for kurtosis was 0.24 for each item and scale. The skew (2.045) and kurtosis (4.044) for the conflict scale was particularly high, which would prevent an analysis of variance from being applicable unless the data was transformed to a normal distribution. The conflict

scale showed positive skew indicating that most scores on the scale were low. This means that teachers report low levels of conflict with most students, an intuitive finding when one considers the classroom context.

Table 8

Descriptive Statistics for the Student-Teacher Relationship Scale (STRS)

	N	M	SD	Range				Skew	Kurtosis
				Potential	Actual				
STRS 1	413	4.174	1.061	1 - 5	1	-	5	-1.273	0.803
STRS 3	413	3.562	1.336	1 - 5	1	-	5	-0.516	-1.027
STRS 4	413	1.814	1.053	1 - 5 (rev)	1	-	5	1.307	1.071
STRS 5	413	4.196	0.977	1 - 5	1	-	5	-1.218	1.097
STRS 6	413	4.547	0.871	1 - 5	1	-	5	-2.485	6.447
STRS 7	413	3.862	1.202	1 - 5	1	-	5	-0.912	-0.293
STRS 9	413	3.630	1.274	1 - 5	1	-	5	-0.611	-0.708
STRS 15	413	3.695	1.333	1 - 5	1	-	5	-0.745	-0.741
Closeness	413	31.852	6.435	8 - 40	12	-	40	-0.699	-0.129
STRS 2	413	1.603	1.094	1 - 5	1	-	5	1.799	1.986
STRS 8	413	1.402	0.808	1 - 5	1	-	5	2.439	6.079
STRS 10	413	1.656	1.148	1 - 5	1	-	5	1.697	1.610
STRS 11	413	1.504	1.021	1 - 5	1	-	5	2.089	3.266
STRS 12	413	1.424	0.923	1 - 5	1	-	5	2.562	6.197
STRS 13	413	1.361	0.811	1 - 5	1	-	5	2.703	7.318
STRS 14	413	1.448	0.976	1 - 5	1	-	5	2.235	3.855
Conflict	413	10.397	5.624	7 - 35	7	-	35	2.045	4.044

To meet the assumptions necessary to analyze variance within the conflict scale, this aspect of the student-teacher relationship was logarithmically transformed to prepare the data for analysis. This log-transformation caused the conflict scale (N=413) to have a mean of 0.972, a standard deviation of 0.181, a range of 0.85 – 1.54, skew of 1.283, and kurtosis of 0.579. This distribution is within the acceptable range for normality to perform an analysis of variance.

Student internalizing and externalizing behaviors. Student behaviors were measured using the CAYCI, which asked each teacher about the internalizing and externalizing behaviors

of each student. Scores on each subscale were calculated by adding all results. Because teachers were asked to rate on a Likert scale whether the student "always" (1) displayed the behavior or "almost never" (5) displayed the behavior, a high score on the original scale indicated a low level of the behaviors while a low score indicates a high prevalence of these behaviors. To facilitate a simpler interpretation of the data, all items were reverse-scored to allow a low score on each scale to indicate a low level of the behavior and vice versa. This change also allowed the distribution to be positively skewed instead of negatively, lending the data more easily to log transformation.

Table 9 includes descriptive statistics for each item and subscale. Both subscales were significantly positively skewed (internalizing = 2.794; externalizing = 2.111) with significant kurtosis (internalizing = 9.036; externalizing = 4.194), as were each of the items except for low attention, indicating that teachers rated most students as low in each behavior.

Table 9

Descriptive Statistics for Student Internalizing and Externalizing Behaviors by Item and Scale

	N	M	SD	Range		Skew	Kurtosis
				Potential	Actual		
Anxious	413	1.400	0.742	*1 - 5*	1 - 5	2.478	7.317
Sad	413	1.200	0.531	*1 - 5*	1 - 5	3.597	16.829
Afraid	413	1.170	0.498	*1 - 5*	1 - 5	4.106	22.045
Lonely	413	1.180	0.506	*1 - 5*	1 - 5	3.448	14.578
Irrelevant	413	1.190	0.519	*1 - 5*	1 - 5	3.368	13.530
INTERNAL	413	2.130	2.196	*5 - 25*	1 - 14	2.794	9.036
LowAttention	413	1.830	1.209	*1 - 5*	1 - 5	1.424	0.922
Hyperactive	413	1.570	1.080	*1 - 5*	1 - 5	2.073	3.396
Impulsive	413	1.460	0.992	*1 - 5*	1 - 5	2.370	4.772
Aggressive	413	1.200	0.659	*1 - 5*	1 - 5	3.919	16.003
BehCorrection	413	1.590	1.050	*1 - 5*	1 - 5	1.996	3.213
EXTERNAL	413	3.650	4.242	*5 - 25*	1 - 21	2.111	4.194

A log-transformation was performed on each of the items and the subscales to prepare the data for statistical analysis. Table 10 shows the descriptive statistics for the resulting data, whose skew and kurtosis more closely represent a normal distribution. Some distribution numbers were still high, and calculations of statistical significance should be interpreted carefully.

Table 10

Descriptive Statistics for Transformed Student Internalizing and Externalizing Behaviors by Item and Scale

Variable	N	M	SD	Range	Skew	Kurtosis
Trans: Anxious	413	0.700	0.104	0 - 0.7	1.438	1.157
Trans: Sad	413	0.700	0.054	0 - 0.7	2.377	5.131
Trans: Afraid	413	0.700	0.046	0 - 0.7	2.687	7.070
Trans: Lonely	413	0.700	0.049	0 - 0.7	2.507	5.509
Trans: Irrelevant	413	0.700	0.050	0 - 0.7	2.499	5.384
Trans: INTERNALIZING	413	1.150	0.199	0 - 1.15	1.310	0.615
Trans: Low Attention	413	0.700	0.190	0 - 0.7	0.836	-0.703
Trans: Hyperactive	413	0.700	0.128	0 - 0.7	1.452	0.787
Trans: Impulsive	413	0.700	0.103	0 - 0.7	1.779	1.864
Trans Aggressive	413	0.700	0.048	0 - 0.7	3.057	8.727
Trans BehCorrect	413	0.700	0.139	0 - 0.7	1.291	0.454
Trans: EXTERNALIZING	413	1.320	0.353	0 - 1.32	0.761	-0.683

Academic indicators. Teachers were asked how many days each student in their class had been absent during the previous semester (a continuous variable), as well as whether each student was at or above grade level in reading and math (categorical variables). Numbers of days absent ranged from 0 to 25. Descriptive statistics for these variables are included in Table 11. The table also includes the descriptive of the absences data after a log-transformation. The original data set was outside of an acceptable level of skew (2.521) and kurtosis (10.421), since teachers reported that most students had a low number of absences.

Table 11

Descriptive Statistics for Student Academic Outcomes

Variable	N	M	SD	Skew	Kurtosis
Absences	413	2.632	2.993	2.521	10.421
Reading	413	0.651	0.477	-0.637	-1.601
Math	413	0.644	0.479	-0.604	-1.643
Trans: Absences	326	0.393	0.328	0.371	-0.681

Testing of Hypotheses

The hypothesis of the study was that classrooms that received the WOWW intervention would demonstrate better teacher sense of efficacy, student-teacher relationships, student internalizing and externalizing behaviors, and student academic outcomes than control classrooms. Because the groups were not equivalent with regards to teacher experience, any significant difference between the conditions needs to exist even without the impact of teacher experience. The analysis of covariance (ANCOVA) statistic evaluates whether group means differ significantly when a third variable—in this case, teacher level of experience—is controlled for. This analysis was used in place of the planned ANOVAs to remove the extraneous influence of the covariate teacher experience on the significance level. However, due to unequal sample sizes between conditions within the teacher experience variable, it is unclear how successful the ANCOVAs were at identifying Type II errors in the data.

Teacher sense of efficacy. One-way ANCOVAs were conducted on the results of the TSES to analyze the difference between treatment and control groups for total score and for each of the subscales: engagement, instruction, and management. As Tables 12-15 indicates, the ANCOVAs found no significant differences between the treatment and control conditions for any of the outcome variables. This means that when controlling for teacher experience, teachers

that received the WOWW intervention had roughly the same teacher sense of efficacy scores as teachers that did not.

Table 12

Analysis of Covariance of the Teacher Sense of Efficacy Scale (TSES)

Source of Variance	Adj SS	df	MS	F	P
Corrected Model	1.386[a]	2	0.693	0.742	0.485
Intercept	300.722	1	300.722	322.044	0.000
TchrExp	0.954	1	0.954	1.022	0.321
Txt	0.025	1	0.025	0.027	0.870
Error	25.212	27	0.934		
Total	1637.000	30			

[a] R Squared = .052 (Adjusted R Squared = -.018)

Table 13

Analysis of Covariance of the Engagement Subscale of the TSES

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	1.260[a]	2	0.630	0.535	0.592
Intercept	280.829	1	280.829	238.439	0.000
TchrExp	0.999	1	0.999	0.848	0.365
Txt	0.000	1	0.000	0.000	0.986
Error	31.800	27	1.178		
Total	1545.360	30			

[a] R Squared = .038 (Adjusted R Squared = -.033)

Table 14

Analysis of Covariance of the Instruction Subscale of the TSES

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	.451[a]	2	0.226	0.193	0.826
Intercept	318.838	1	318.838	272.638	0.000
TchrExp	0.019	1	0.019	0.017	0.899
Txt	0.28	1	0.280	0.239	0.629
Error	31.575	27	1.169		
Total	1601.660	30			

[a] R Squared = .014 (Adjusted R Squared = -.059)

Table 15

Analysis of Covariance of the Management Subscale of the TSES

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	4.013[a]	2	2.007	2.076	0.145
Intercept	304.766	1	304.766	315.256	0.000
TchrExp	3.425	1	3.425	3.543	0.071
Txt	0.016	1	0.016	0.017	0.898
Error	26.102	27	0.967		
Total	1802.660	30			
Corrected Total	30.115	29			

[a] R Squared = .133 (Adjusted R Squared = .069)

Student-teacher relationship. A one-way ANCOVA was conducted on the closeness subscale of the STRS-SF. As Table 16 describes, the analysis was significant at the $p < 0.05$ level ($F(1,410)=18.348$, $p=0.000$). The control group was significantly more likely to score high on the closeness scale (M=33.11) than the treatment group (M=30.56), meaning that students who did not receive the WOWW intervention were more likely to be rated by their teacher as having a close relationship with their teachers than the students who did receive the intervention.

Table 16

Analysis of Covariance of the Closeness Subscale of the STRS-SF

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	745.803[a]	2	372.902	9.373	0.000
Intercept	82367.497	1	82367.497	2070.273	0.000
TchrExp	76.453	1	76.453	1.922	0.166
Txt	729.994	1	729.994	18.348	0.000
Error	16312.187	410	39.786		
Total	436075.000	413			

[a] R Squared = .044 (Adjusted R Squared = .039)

Once the conflict scale of the STRS-SF was transformed to normalize the data, an ANCOVA was performed on that data set as well (see Table 17). The results were not significant at the $p < 0.05$ level, indicating that treatment and control conditions showed a similar level of conflict within the student-teacher relationship. Interestingly, the teacher experience variable was found to significantly influence the variance [$F(1,410)=10.013$, $p=0.002$], suggesting teacher experience may impact whether their relationship with a student is characterized by conflict.

Table 17

Analysis of Covariance of the Transformed Conflict Subscale of the STRS-SF

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	.337[a]	2	0.169	5.237	0.006
Intercept	72.235	1	72.235	2244.038	0.000
TchrExp	0.322	1	0.322	10.013	0.002
Txt	0.022	1	0.022	0.696	0.404
Error	13.198	410	0.032		
Total	404.074	413			

[a] R Squared = .025 (Adjusted R Squared = .020)

Student internalizing and externalizing behaviors. Once data were adjusted for skew and kurtosis, ANCOVAs were conducted on teacher ratings of student internalizing and externalizing behaviors. Among internalizing behaviors (see Tables 18-23), a significant difference existed in anxiety level [F(1,409)=17.41, p=0.000] between treatment and control, with teachers rating students who received the WOWW intervention (M=1.296) as less anxious than those who had not (M=1.493). Teachers also reported that students who received the WOWW intervention felt less like they did not matter, F(1,409)=9.976, p=0.002, Txt M=1.138, Ctl M=1.235. Results were not significant for ratings of student sadness, fear, loneliness or overall internalizing behaviors.

Table 18

Analysis of Covariance of the Transformed "Anxious" Item of the CAYCI

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	.698[a]	2	0.349	12.415	0.000
Intercept	0.098	1	0.098	3.498	0.062
TchrExp	0.525	1	0.525	18.697	0.000
Treatment	0.489	1	0.489	17.410	0.000
Error	11.493	409	0.028		
Total	16.639	412			

[a] R Squared = .057 (Adjusted R Squared = .053)

Table 19

Analysis of Covariance of the Transformed "Sad" Item of the CAYCI

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	.032[a]	2	0.016	0.929	0.396
Intercept	0.117	1	0.117	6.856	0.009
TchrExp	0.031	1	0.031	1.829	0.177
Treatment	0.004	1	0.004	0.216	0.643
Error	6.961	409	0.017		
Total	8.189	412			

[a] R Squared = .005 (Adjusted R Squared = .000)

Table 20

Analysis of Covariance of the Transformed "Afraid" Item of the CAYCI

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	.273[a]	2	0.136	9.59	0.000
Intercept	0.001	1	0.001	0.099	0.753
TchrExp	0.271	1	0.271	19.077	0.000
Treatment	0.041	1	0.041	2.895	0.09
Error	5.817	409	0.014		
Total	6.962	412			

[a] R Squared = .045 (Adjusted R Squared = .040)

Table 21

Analysis of Covariance of the Transformed "Lonely" Item of the CAYCI

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	.314[a]	2	0.157	10.263	0.000
Intercept	0.000	1	0.000	0.018	0.894
TchrExp	0.281	1	0.281	18.351	0.000
Treatment	0.006	1	0.006	0.404	0.525
Error	6.261	409	0.015		
Total	7.568	412			

[a] R Squared = .048 (Adjusted R Squared = .043)

Table 22

Analysis of Covariance of the Transformed "Irrelevant" Item of the CAYCI

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	.247[a]	2	0.123	7.684	0.001
Intercept	0.004	1	0.004	0.265	0.607
TchrExp	0.197	1	0.197	12.282	0.001
Treatment	0.160	1	0.160	9.976	0.002
Error	6.568	409	0.016		
Total	7.842	412			

[a] R Squared = .036 (Adjusted R Squared = .031)

Table 23

Analysis of Covariance of the Transformed Internalizing Subscale of the CAYCI

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	1.466[a]	2	0.733	8.634	0.000
Intercept	0.609	1	0.609	7.171	0.008
TchrExp	1.416	1	1.416	16.681	0.000
Treatment	0.548	1	0.548	6.450	0.011
Error	34.724	409	0.085		
Total	52.501	412			

[a] R Squared = .041 (Adjusted R Squared = .036)

Among externalizing behaviors (see Tables 24-29), student levels of inattention, hyperactivity, impulsivity, and need for behavior correction were different between treatment and control groups after the data were logarithmically transformed. A significant difference were

found in attention level [F(1,409)=3.913, p=0.049] between treatment and control groups, with teachers rating students who received the WOWW intervention (M=1.724) as less inattentive than those who had not (M=1.943). Teachers also reported students were less hyperactive [F(1,409)=3.863, p=0.044, Txt M=1.433, Ctl M=1.694] and less impulsive [F(1,409)=4.085, p=0.044, Txt M=1.370, Ctl M=1.541] if they had received the WOWW intervention. Teachers rated students who received the WOWW intervention as less likely to need behavior correction [F(1,409)=14.544, p=0.000, Txt M=1.419, Ctl M=1.766], and scores on the overall externalizing behaviors subscale were significant different between treatment and control [F(1,409)=5.629, p=0.018], with treatment groups scoring lower (M=3.133) than control groups (M=4.158) on externalizing behaviors. Results were not significant for ratings of student aggression.

Table 24

Analysis of Covariance of the Transformed "Low Attention" Item of the CAYCI

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	.270[a]	2	0.135	2.360	0.096
Intercept	1.931	1	1.931	33.801	0.000
TchrExp	0.165	1	0.165	2.888	0.090
Treatment	0.224	1	0.224	3.913	0.049
Error	23.363	409	0.057		
Total	38.425	412			

[a] R Squared = .011 (Adjusted R Squared = .007)

Table 25

Analysis of Covariance of the Transformed "Hyperactive" Item of the CAYCI

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	.196[a]	2	0.098	2.106	0.123
Intercept	1.231	1	1.231	26.408	0.000
TchrExp	0.006	1	0.006	0.136	0.713
Treatment	0.180	1	0.180	3.863	0.050
Error	19.069	409	0.047		
Total	26.005	412			

[a] R Squared = .010 (Adjusted R Squared = .005)

Table 26

Analysis of Covariance of the Transformed "Impulsive" Item of the CAYCI

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	.173[a]	2	0.086	2.142	0.119
Intercept	0.513	1	0.513	12.739	0.000
TchrExp	0.070	1	0.070	1.734	0.189
Treatment	0.165	1	0.165	4.085	0.044
Error	16.484	409	0.040		
Total	21.036	412			

[a] R Squared = .010 (Adjusted R Squared = .006)

Table 27

Analysis of Covariance of the Transformed "Aggressive" Item of the CAYCI

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	.015[a]	2	0.007	0.365	0.694
Intercept	0.111	1	0.111	5.604	0.018
TchrExp	0.015	1	0.015	0.731	0.393
Treatment	0.003	1	0.003	0.146	0.703
Error	8.123	409	0.020		
Total	9.073	412			

[a] R Squared = .002 (Adjusted R Squared = -.003)

Table 28

Analysis of Covariance of the Transformed "Behavior Correction" Item of the CAYCI

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	0.675[a]	2	0.338	7.606	0.001
Intercept	1.196	1	1.196	26.960	0.000
TchrExp	0.045	1	0.045	1.013	0.315
Treatment	0.645	1	0.645	14.544	0.000
Error	18.149	409	0.044		
Total	26.805	412			

[a] R Squared = .036 (Adjusted R Squared = .031)

Table 29

Analysis of Covariance of the Transformed Externalizing Subscale of the CAYCI

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	.895[a]	2	0.447	2.815	0.061
Intercept	8.177	1	8.177	51.467	0.000
TchrExp	0.199	1	0.199	1.250	0.264
Treatment	0.894	1	0.894	5.629	0.018
Error	64.983	409	0.159		
Total	117.082	412			

[a] R Squared = .014 (Adjusted R Squared = .009)

Academic indicators. After data regarding student absences were transformed to adjust for skew, an ANCOVA was conducted to determine whether significant differences exist

between treatment and control groups (see Table 30) in number of student absences. No significant differences were found.

Table 30

Analysis of Covariance of the Transformed Number of Student Absences

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	.122[a]	2	0.061	0.567	0.568
Intercept	11.232	1	11.232	104.229	0.000
TchrExp	0.014	1	0.014	0.134	0.715
Txt	0.058	1	0.058	0.540	0.463
Error	34.808	323	0.108		
Total	85.189	326			

[a] R Squared = .003 (Adjusted R Squared = -.003)

One-way ANCOVAs were also conducted on student reading and math levels (see Tables 31 and 32). No significant differences were found between the treatment and control groups, although the covariate of teacher experience had a significant impact on the variance of students with regards to reading levels [F(1,410)=4.239, p=0.04].

Table 31

Analysis of Covariance of Student Reading Levels

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	1.943[a]	2	0.972	4.338	0.014
Intercept	26.716	1	26.716	119.257	0.000
TchrExp	0.950	1	0.950	4.239	0.040
Txt	0.198	1	0.198	0.883	0.348
Error	91.848	410	0.224		
Total	269.000	413			

[a] R Squared = .021 (Adjusted R Squared = .016)

Table 32

Analysis of Covariance of Student Math Levels

Source of Variance	Adj SS	df	MS	F	*P*
Corrected Model	.770[a]	2	0.385	1.681	0.188
Intercept	26.880	1	26.880	117.359	0.000
TchrExp	0.766	1	0.766	3.345	0.068
Txt	0.119	1	0.119	0.518	0.472
Error	93.908	410	0.229		
Total	266.000	413			

[a] R Squared = .008 (Adjusted R Squared = .003)

Discussion

The hypothesis was that receiving the WOWW intervention would cause students and teachers to score better on outcome variables. Receiving WOWW seemed to decrease student externalizing behaviors. Students in treatment classrooms were more likely to be rated as lower on inattentiveness, hyperactivity, impulsivity, need for behavioral correction, and overall externalizing behaviors. Students who received WOWW were also less likely to be described as anxious or feeling like they did not matter. A significant difference was found between groups for the closeness subscale of the Student-Teacher Relationship Scale; however, the direction of this significance contradicts the hypothesis. Students in classrooms that did not receive WOWW were more likely to be rated by their teachers higher on closeness than students in who did receive the WOWW intervention. For both these findings, the unequal sample size within levels of teacher experience indicates that attempts to control for the confound of teacher experience may not have had sufficient statistical power. Overall, the hypothesis is only partially supported by these findings, and the conflicting results suggest that more research is needed into the impact of the WOWW intervention on teacher and student outcomes.

Chapter V- Summary, Implications, & Recommendations

Summary

The Working on What Works (WOWW; Berg & Shilts, 2005) school-based intervention applies solution-focused theory and techniques to improve learning at the classroom level. This study evaluated on a classroom level whether a strength-based, solution-focused intervention improves students' emotional, behavioral, and academic outcomes. The purpose of this study was to test the effects of WOWW on teachers' sense of efficacy, teachers' evaluation of their relationships with students, and teachers' assessment of problem behavior. The research question was, "Does the WOWW intervention impact teacher and student outcomes?"

Drawing on the biopsychosocial theory to link mental health, classroom culture, poverty, and academic outcomes, this project provided an arena to explore and test the unique philosophies that inform Solution-Focused Brief Therapy (SFBT): systems theory and social constructionism. MFT theories and techniques have great potential for classroom and school-based application, and the study attempted to link mental health and learning with wide implications for classroom relationships, the effects of poverty, and academic achievement.

This project used a posttest, two-group randomized experimental design as a research design. Thirty classrooms were recruited from public and private schools in San Antonio, Texas. Of these, fifteen—the experimental group—were randomly selected to receive the WOWW intervention over the course of ten weeks. The other fifteen classrooms constituted the control group. This study had a significantly higher sample size than any previous study testing the WOWW intervention in the classroom. It implemented a randomized control design intending to equalize the treatment and control conditions with regards to extraneous variables.

After the intervention occurred, all measures were completed by the teachers in both the experimental and control groups; the absence of a pre-test countered testing bias. The independent variable was whether a classroom received the intervention. The dependent variables were teacher sense of efficacy, student-teacher relationships, student internalizing and externalizing behaviors, and student academic outcomes including attendance and math / reading levels. All dependent variables were measured using surveys administered to teachers after the WOWW intervention occurred in treatment classrooms. Using SPSS, this project conducted analyses of covariance (ANCOVAs) on the data to compare post-intervention differences between the intervention and control group, while attempting to control for the unequally distributed confound of teacher experience.

Upon analysis, the treatment and control groups were found to be equivalent in all variables except for teacher experience. Classrooms randomized to the treatment condition were significantly more likely to have teachers with higher levels of experience than the control group, and levels of teacher experience were distributed unequally between conditions. This finding was particularly concerning, because the levels of teacher experience were unevenly distributed between groups, threatening the statistical power of controlling for this confounding variable.

Analysis of the outcome data found that students in treatment classrooms had fewer externalizing behaviors. They were less likely to be inattentive, had lower hyperactivity, were less impulsive, need less behavioral correction than students in the control classrooms. Students who received WOWW were also less likely to be described as anxious or feeling like they did not matter. Students who received WOWW also scored lower on the closeness scale of the Student-Teacher Relationship Scale. The conflicting nature of these findings suggest that the efficacy of the WOWW intervention warrants further investigation.

Implications

Strengths of this study include a large sample size, recruitment from a wide variety of schools (private / public, class size, income level), a study implementation that made the intervention accessible to diverse populations, and a study design that decreased test-retest bias and randomized classrooms to treatment and control conditions. Previous studies were based on smaller sample sizes and non-randomized designs. In this way, this study demonstrates methods that can be utilized to bridge the practice-research gap regarding WOWW and other classroom interventions, involving educators, practitioners, and researchers in school-based, community-oriented research. In addition, this study considered the efficacy of solution-focused principles within the classroom—a level of analysis that circumvents many barriers to research in a school setting and makes therapeutic intervention accessible to more students at once.

Although pilot studies on WOWW are promising, the results of this study suggest that the intervention needs to be implemented carefully and the student-teacher relationship examined closely to ensure that no negative consequences result in the sense of closeness between teachers and students. The finding that treatment classrooms had less closeness between students and teachers than control classrooms is particularly disturbing. Several possible explanations for this effect exist. First, as with all the results of this study, the unequal distribution of teacher experience among treatment and control groups makes it difficult to control for this variable, and teacher experience may impact the closeness of the student-teacher relationship in several ways. Since WOWW decreased some internalizing behaviors, students in the treatment classroom may have had less emotional strife to share with their teachers, decreasing emotional connection. Teachers who are more experienced may also be more burnt out, decreasing their likelihood of being emotionally available to their students. More experienced teachers may be more focused

on instructional goals, potentially decreasing their focus on emotional dynamics, or, less experienced teachers may be more idealistic, seeing less clearly the breaches of relationship between themselves and their students and thus reporting a closer relationship.

A second possible explanation for the findings is that the very process of implementing an intervention—regardless of how seemingly beneficial—may create stress for teachers that has a negative impact on the student-teacher relationship. Special care needs to be taken to make sure classroom-based interventions integrate easily into the school day and do not add to a teacher's workload. Finally, the act of being observed may create distance between teachers and students, even if—as in the case of WOWW—all feedback is strength-based and positive. As long as it is not found to be harmful to participants (for example, if the positive behavioral impact outweighs the strain on the student-teacher relationship), this effect could be explored further by implementing a control activity that involves a person present in the comparison classrooms, equalizing the observer effect between conditions.

Despite these difficult findings, this study provides some evidence that WOWW may significantly improve student behavior, specifically regarding student anxiety, sense of importance, attention, impulsivity, hyperactivity, and need for behavior correction. The grouping of these behaviors seems to imply that WOWW might be particularly useful to classrooms with students who struggle with Attention Deficit / Hyperactivity Disorder (ADHD). The findings also suggest that the solution-focused principles WOWW utilizes most powerfully impact the classroom by way of behavioral modification, an insight that could be useful as the intervention is further developed. These findings must be applied cautiously, as the lack of ability to fully control for teacher experience calls the significance of these findings into question, but they do provide avenues for future exploration and research.

Recommendations

This study attempted to extend the studies that piloted the WOWW intervention in the classroom context (Berg & Shilts, 2005; Brown, Powell, & Clark, 2012; Kelly & Bluestone-Miller, 2009; Kelly, Liscio, Bluestone-Miller, & Shilts 2012; Lloyd, Bruce, & Mackintosh, 2012). The most concerning finding of this study was a lower closeness in treatment classrooms between teacher and student. To ensure that future implementations of WOWW do not have this effect, the intervention should be systematically implemented in one or two classrooms, paying particular attention to the student-teacher relationships within that class. Once the intervention has been refined in this context, it may be possible to isolate the feature that impacted student-teacher closeness in this study and ensure through training that this aspect is not present in future implementations of WOWW.

By using a randomized control design, this study utilized a method with the potential to generalize findings more than previous literature, potentially contributing to the evidence-base for SFBT in schools. Randomization of the classrooms successfully controlled for within-condition differences in school income level, type of school (public / private), class size, and grade level, but it did not create equivalent groups with regards to teacher experience. In addition to using a randomized control design, future research needs to utilize a stratified random sample to control for all significant confounding variables.

Although teacher experience emerged as an unequal extraneous variable between conditions, an unequal distribution of this variable between conditions caused inadequate statistical power to allow conclusions to be drawn about the impact teacher experience may have had on the outcome variables. This means that any of the significant analyses may not have sufficiently accounted for teacher experience, despite controlling for it as a covariate using the

ANCOVA. Future studies should consider this potential asymmetry between conditions when determining how large of a sample size is necessary to draw conclusions about the data.

The highly-skewed nature of some of the data presented some problems for the statistical analysis chosen. Factors such as internalizing and externalizing behaviors or number of absences were found to be highly skewed, as most students are rated by their teachers as low in these behaviors and have a low number of absences. Although log-transformation allowed the planned analysis to be conducted, some problems exist with this method that make some researchers suggest using analytic methods such as generalized estimating equations (GEE) that are not dependent on the distribution of the data. This study illuminates several variables that might be particularly apt for these newer methods of statistical analysis; future researchers are advised to anticipate the skew and plan their analysis accordingly.

Although this project recruited from a wide range of schools, some sampling bias may have occurred that threatens generalizability. Private schools were highly represented, as were low income schools in the sample. These factors should be considered in future studies, which could explore the impact of classroom-based interventions on a more specific sample, isolating the effect with a specific population, or broaden the exploration beyond the classrooms studied here to increase generalizability. In addition, student distribution between classrooms is often not random within schools, with more challenging students often assigned to more experienced teachers. Future studies may consider this and match classrooms on student demographic, behavioral, and academic variables to ensure maximum equivalence across conditions.

The lack of significance in most of the data collected suggests either that the variables considered were not those most closely impacted by WOWW or that the measures used were not sensitive enough to uncover those effects. Future studies examining WOWW or any other

classroom based intervention need to carefully consider the best way to measure the constructs under consideration, potentially by creating and validating new measures specifically designed to measure classroom-level variables.

Future studies could also be strengthened by the collection of parent- and student-report data to supplement teacher-report as well as by working with schools to compile other academic and behavioral information. Ideally, this data could be compared across schools, a feat that would require similar reporting techniques within or between school districts. Finally, to ensure maximum equivalence between treatment and control, future studies should attempt to provide an alternate intervention in control classrooms, consisting of equal time spent in a non-therapeutic activity to control for the impact of merely having another adult in the classroom.

Future studies. Several possibilities for future studies emerge from this project. First, conducting a study using a stratified random sample of teachers of different experience levels could both eliminate the problems with unequal distribution encountered in this project and gather interesting information about how different levels of expertise are impacted by the WOWW intervention. Such a study would gather a large number of teachers, then randomly select within each experience level which would receive the treatment and which would be the control group. The classroom-based intervention would then be provided to the treatment group, with the control group receiving either a similar, non-therapeutic intervention or no treatment. Analyses would be conducted in a similar way, with the research question being: What impact does WOWW have on classroom-level outcomes with teachers of each level of experience?

Another useful study would be to explore the impact of the WOWW intervention specifically on students with ADHD. In this study, students who struggle with symptoms of ADHD would be identified, either in a special needs classroom or scattered through the general

population of a school that is conducting WOWW. Students' symptoms of ADHD would be measured before and after the WOWW intervention and their academic progress tracked to determine whether WOWW is as useful for these students as this project's results suggest.

Finally, the possibility of training teachers to use the WOWW intervention merits a research study in the future. In this study, teachers would be taught the principles of WOWW and coached to utilize the techniques with the students. Teacher and student outcomes would be measured at the end of the project and compared with classrooms of teachers who had not received training in the WOWW intervention. This study could establish whether the WOWW intervention is successful at improving teacher skill and ability to find strengths in their students. This version of the intervention maximizes the therapist's time, because one coach could impact multiple classrooms by having the teacher implement the intervention.

Based on the conflicting results of this study, WOWW and other classroom based interventions need to be carefully tested to determine the best way to positively impact classroom culture and student academic achievement. Any evidence for WOWW's effectiveness or the impact of other systemic classroom-based therapies may inform the development of a uniquely systemic role for MFTs within the school system. The creation of such a role could increase awareness of MFTs' specialized skill set, illuminate the usefulness of a systemic perspective in education, and ultimately increase demand for MFTs in schools.

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Appendix A: Teacher Sense of Efficacy Scale (TSES)

Teacher Beliefs - TSES

This questionnaire is designed to help us gain a better understanding of the kinds of things that create challenges for teachers. Your answers are confidential.

Directions: Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns on the right side, ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum.

Please respond to each of the questions by considering the combination of your *current* ability, resources, and opportunity to do each of the following in your present position.

	None at all		Very Little		Some Degree		Quite A Bit		A Great Deal
1. How much can you do to get through to the most difficult students?	1	2	3	4	5	6	7	8	9
2. How much can you do to help your students think critically?	1	2	3	4	5	6	7	8	9
3. How much can you do to control disruptive behavior in the classroom?	1	2	3	4	5	6	7	8	9
4. How much can you do to motivate students who show low interest in school work?	1	2	3	4	5	6	7	8	9
5. To what extent can you make your expectations clear about student behavior?	1	2	3	4	5	6	7	8	9
6. How much can you do to get students to believe they can do well in school work?	1	2	3	4	5	6	7	8	9
7. How well can you respond to difficult questions from your students?	1	2	3	4	5	6	7	8	9
8. How well can you establish routines to keep activities running smoothly?	1	2	3	4	5	6	7	8	9
9. How much can you do to help your students value learning?	1	2	3	4	5	6	7	8	9
10. How much can you gauge student comprehension of what you have taught?	1	2	3	4	5	6	7	8	9
11. To what extent can you craft good questions for your students?	1	2	3	4	5	6	7	8	9
12. How much can you do to foster student creativity?	1	2	3	4	5	6	7	8	9
13. How much can you do to get children to follow classroom rules?	1	2	3	4	5	6	7	8	9
14. How much can you do to improve the understanding of a student who is failing?	1	2	3	4	5	6	7	8	9
15. How much can you do to calm a student who is disruptive or noisy?	1	2	3	4	5	6	7	8	9
16. How well can you establish a classroom management system with each group of students?	1	2	3	4	5	6	7	8	9
17. How much can you do to adjust your lessons to the proper level for individual students?	1	2	3	4	5	6	7	8	9
18. How much can you use a variety of assessment strategies?	1	2	3	4	5	6	7	8	9
19. How well can you keep a few problem students form ruining an entire lesson?	1	2	3	4	5	6	7	8	9
20. To what extent can you provide an alternative explanation or example when students are confused?	1	2	3	4	5	6	7	8	9
21. How well can you respond to defiant students?	1	2	3	4	5	6	7	8	9
22. How much can you assist families in helping their children do well in school?	1	2	3	4	5	6	7	8	9
23. How well can you implement alternative strategies in your classroom?	1	2	3	4	5	6	7	8	9
24. How well can you provide appropriate challenges for very capable students?	1	2	3	4	5	6	7	8	9

Appendix B: Student-Teacher Relationship Scale—Short Form (STRS-SF)

STUDENT-TEACHER RELATIONSHIP SCALE – SHORT FORM

Robert C. Pianta

Child: _____ Teacher:_____ Grade:_____

Please reflect on the degree to which each of the following statements currently applies to your relationship with this child. Using the scale below, circle the appropriate number for each item.

Definitely does not apply 1	Not really 2	Neutral, not sure 3	Applies somewhat 4	Definitely applies 5

1.	I share an affectionate, warm relationship with this child.	1	2	3	4	5
2.	This child and I always seem to be struggling with each other.	1	2	3	4	5
3.	If upset, this child will seek comfort from me.	1	2	3	4	5
4.	This child is uncomfortable with physical affection or touch from me.	1	2	3	4	5
5.	This child values his/her relationship with me.	1	2	3	4	5
6.	When I praise this child, he/she beams with pride.	1	2	3	4	5
7.	This child spontaneously shares information about himself/herself.	1	2	3	4	5
8.	This child easily becomes angry with me.	1	2	3	4	5
9.	It is easy to be in tune with what this child is feeling.	1	2	3	4	5
10.	This child remains angry or is resistant after being disciplined.	1	2	3	4	5
11.	Dealing with this child drains my energy	1	2	3	4	5
12.	When this child is in a bad mood, I know we're in for a long and difficult day.	1	2	3	4	5
13.	This child's feelings toward me can be unpredictable or can change suddenly.	1	2	3	4	5
14.	This child is sneaky or manipulative with me.	1	2	3	4	5
15.	This child openly shares his/her feelings and experiences with me.	1	2	3	4	5

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Appendix C: Student Internalizing & Externalizing Behavior questionnaire

[STUDENT'S NAME]

We are interested in learning about your perceptions of this student's internalizing and externalizing behaviors. For each of the following statements, please choose the ONE that best represents your answer.

Almost Always (1)	Frequently (2)	Half of the Time (3)	Sometimes (4)	Almost Never (5)

CAYCI_1 This student is anxious/worried.

CAYCI_2 This student is sad/depressed.

CAYCI_3 This student is afraid.

CAYCI_4 This student is lonely.

CAYCI_5 This student feels like he/she does not matter.

CAYCI_6 This student demonstrates poor attention span.

CAYCI_7 This student demonstrates hyperactivity or restlessness.

CAYCI_8 This student is impulsive.

CAYCI_9 This student acts aggressively towards peers and/or adults.

CAYCI_10 This student requires behavioral correction.

Vita

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Individual & Family Therapist, Private Practice	June 2011 – Aug 2014
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Brief Strategic Family Therapist, Wheeler Clinic	June 2010 – May 2012
Clinical Intern, Southern Connecticut State University	September 2008 – June 2010
Learning Team Leader, Teach for America—Connecticut	Sept 2008 – June 2009
Teacher, Celentano Museum Academy, New Haven Public Schools	June 2007 – August 2010

VOLUNTEER POSITIONS

Elected Member-at-Large, Board of Trustees, Texas Association of Marriage & Family Therapy
Action Team Co-Chair, San Antonio RISE, Leadership for Educational Equity
Collective Impact Fellowship, Excel Beyond the Bell, San Antonio, TX
Student Representative, Pre-Dissertation Doctoral Cohort, St. Mary's University
Conference Committee Member, TAMFT Annual Conference, San Antonio, TX
Volunteer, Texas Association for Marriage and Family Therapy Annual Conference, Austin, TX

PUBLICATIONS

Wallace, L.B. (2016). Teachers, counselors help shape lifesaving anti-bullying legislation. *The Rivard Report*, published online on August 1, 2016, at http://therivardreport.com/school-counselors-help-shape-life-saving-anti-bullying-legislation

Wallace, L.B. (2014). Family therapy & the science of compassion. *Family Therapy Magazine, 13*(5), 32-35.

Working on What Works (WOWW)

GRANTS, SCHOLARSHIPS, & AWARDS

IOSSBR Best Paper Award, International Org of Social Sciences and Behavioral Research
Counseling Department Scholarship, St. Mary's University
Faculty-on-Campus Grant, St. Mary's University
First Place Academic Achievement Award, St. Mary's University's Annual Research Symposium
Research-in-the-Community Grant, St. Mary's University
TX APT Dan E. Homeyer Research Grant
Charles L. Cotrell Graduate Scholarship
Marriage & Family Therapy Department Scholarship, St. Mary's University
Grace Luther Memorial Scholarship, St. Mary's University
AAMFT Minority Fellowship, American Association of Marriage & Family Therapy
Academic Scholarship, St. Mary's University
Marriage & Family Therapy Scholarship, Southern Connecticut State University

ACADEMIC PRESENTATIONS

Wallace, L. B. (Jan - April 2017). *Mental Health in the Classroom.* Three-session professional development presented to beginning educators at Teach for America's Professional Development Saturday, San Antonio, TX.

Wallace, L. B. (Nov 2016). *Working on What Works (WOWW): Classroom-level Impact on Teacher and Student Outcomes.* Presentation for the Education/Social Sciences session of the International Organization of Social Sciences and Behavioral Research (IOSSBR)'s Fall conference, San Antonio, TX.

Wallace, L. B. (Nov 2016). *Teacher Perceptions of Classroom Mental health Support.* Presentation for the Behavioral Sciences session of the International Organization of Social Sciences and Behavioral Research (IOSSBR)'s Fall conference, San Antonio, TX.

Fogarty, S. & Wallace, L. B. (April 2016). *Child teacher relationship training as a social emotional intervention for special education students.* Presentation at the annual conference of the Texas Association for Play Therapy, Austin, TX.

Wallace, L. B., Bocanegra, K., & Fogarty, S. (March 2016). *School-based family therapy: Overcoming the Barriers (Lead Presenter).* Three-hour seminar presented at the annual conference of the Texas Association of Marriage and Family Therapy, Austin, TX.

Wallace, L. B. & Myers, C. D. (Jan. 2016). *School Counseling from a Systemic Perspective (Lead Presenter).* Three-hour seminar presented at the Texas Counseling Association's annual School Counselor Conference, Dallas, TX.

Wallace, L. B. (Jan. 2016). *Mental Health in the Classroom.* Professional development session presented to beginning educators at Teach for America's January Professional Development Saturday, San Antonio, TX.

Myers, C., Moon, J., Zuniga, J., & Wallace, L. (November 2015). *Transforming children's grief through creative interventions.* Workshop presented at the annual Professional Development Conference of the Texas Counselor Association, Corpus Christi, TX.

Wallace, L. B. (Sept. 2015). *School-based family therapy: Toward a uniquely systemic model (Lead Presenter).* Three-hour seminar presented at the annual conference of the American Association of Marriage and Family Therapy, Austin, TX.