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SCHOOL PSYCHOLOGISTS' KNOWLEDGE, BELIEFS, AND PRACTICES REGARDING STUDENT MOTIVATION: AN INTERVENTION STUDY

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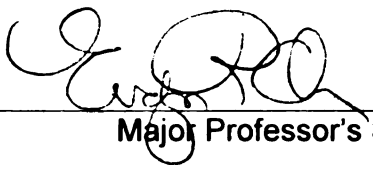

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SCHOOL PSYCHOLOGISTS' KNOWLEDGE, BELIEFS, AND PRACTICES REGARDING STUDENT MOTIVATION: AN INTERVENTION STUDY

By

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ABSTRACT

SCHOOL PSYCHOLOGISTS' KNOWLEDGE, BELIEFS, AND PRACTICES REGARDING STUDENT MOTIVATION: AN INTERVENTION STUDY

By

Cheryl A. Rau

When students perform poorly on tests, fail to complete their work, and show limited gains in achievement, it is important to examine the multiple factors that contribute to their learning and performance. Oftentimes when school psychologists are called upon to assess the nature of such concerns, it is believed that the difficulties represent an academic or emotional impairment of some sort. While these explanations are important to consider, student motivation must also be explored as a potential contributor to student difficulties. A previous study by the author (2001) indicated that school psychologists are not well-prepared to address motivation issues, as they have limited conceptual knowledge, assessment strategies, and intervention recommendations.

This study assessed the effectiveness of a series of professional development seminars designed to enhance the knowledge, beliefs, and skills of school psychologists regarding student motivation. The first seminar focused upon conceptual frameworks, introducing social-cognitive perspectives and achievement goal theory. The second session addressed motivational tools and frameworks, with a particular focus on the TARGET model, a research-based framework for examining the effects of classroom factors on student motivation. The third session provided an opportunity to reflect upon the participants' experiences in using the tools and frameworks. The overarching

research question explored in this study was, how does participation in the workshops influence school psychologists' knowledge and beliefs regarding student motivation?

Participants included fifty school psychologists from four Michigan regional educational agencies. This study employed a waiting-list, control group design with matched group assignment (match based upon years of experience). All participants completed pre- and posttest assessments of their motivation knowledge, their perceptions of competence for addressing motivation issues, and their likelihood of recommending various assessment and intervention strategies when responding to motivation cases. Two (time) by 2 (group) repeated measures ANOVA were conducted to explore the effects of the workshops in each of these areas over time.

Results indicated that the workshops had a profound influence on the knowledge and beliefs of the school psychologists. Participants showed significant gains in their motivation knowledge and rated themselves as more competent in their ability to understand the nature of student motivation problems, assess such concerns, and develop effective individual and classroom-level interventions. In addition, responses indicated that participants were more likely to utilize the tools and frameworks introduced in the seminars and to recommend the strategies that follow from such frameworks.

Taken at its most simplistic level, participation in the workshops provided a new lens through which the participants could understand motivation issues. Grounded in a research-based conceptual framework, such a lens provided an alternative means through which to interpret the adaptive and/or maladaptive practices that take place in schools everyday, thus offering a solid foundation from which to recommend changes that may lead to more adaptive motivational responses by students to their learning experiences.

DEDICATION

I dedicate this dissertation and this degree to my family, without whose constant love and support this would not have been possible.

To Dad, one of my favorite aspects of pursuing this degree has been the opportunity to develop the "professional" side of our relationship. It has been my greatest pleasure to engage in our debates about the state of American education and to explore our opportunities to impact it. May we always play our roles as wise, perhaps pessimistic, veteran and idealistic, perhaps naïve, novice. ☺

To Mom, I wish every child were as lucky to have a mother who showed as much pride in her children and who was as committed to understanding our ever-evolving worlds. I promise to continue to provide "handouts" to explain my professional life to your friends and colleagues. ☺

To Amy Lynn, my first teacher! Your persistence in pursuing your own education has served as an inspiration throughout my graduate career. And perhaps more importantly, your kindness and compassion for others have taught me as much about what it takes to be a successful psychologist as any book or course ever could!! ☺

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Students who perform poorly on tests, fail to complete their work, and show limited gains in achievement *attract* the attention and concern of teachers. These difficulties are typically viewed as potential deficits in academic skills and/or in social-emotional functioning. If these difficulties are believed to be severe enough, the students may be referred for evaluation to determine if their school problems warrant accommodations or special education services. While a learning or emotional problem may or may not be present, it is also important to consider the multiple additional factors that contribute to students' learning and performance in order to more thoroughly understand the academic experiences of struggling students. One such alternative explanation is that students' motivation to learn needs to be fostered.

Why motivation?

While the potential factors contributing to student learning are many (Keith, 1988; Walberg, 1986) and the interactions among such factors are complex, motivation is consistently noted as a vital contributor. DiPerna and Elliott (2002) identified motivation as one of four "academic enablers" that influences student performance in school-related tasks and experiences; others include interpersonal skills, engagement, and study skills. They define academic enablers as the "attitudes and behaviors that allow a student to participant in, and ultimately benefit from, academic instruction in the classroom" (p. 294). Such enablers guide how students approach academic tasks and have a profound influence on student learning and school performance.

DiPerna, Volpe, and Elliott (2002) discuss a model of student academic functioning that suggests that classroom instruction influences the expression of academic enablers, which in turn affects the development of academic skills that lead to an overall experience of academic competence (p. 301). In general, these models indicate that prior achievement and interpersonal skills affect student motivation, which in turn influence study skills and engagement in learning activities. These latter two variables, along with prior academic achievement, have been shown to have a direct effect on current academic achievement. Thus, according to these models, motivation is understood to have an indirect, mediating influence on student learning and performance.

Other models argue for a more direct influence of student motivation. Walberg's Theory of Educational Productivity (1984) and Keith's generic model of school learning (1988) each include motivation amongst a list of personal and contextual factors that directly and indirectly influence learning outcomes for students. Keith (2002) argues that motivation (as well as other factors) is "manipulable," suggesting that interventions can be developed to enhance students' engagement in learning experiences. "If motivation is manipulable and has an important effect on learning across ages and groups, then interventions, techniques, or programs to improve motivation will, if successful, increase learning" (p. 400).

Motivation among low achieving students

From a practitioner's point of view it is particularly important to consider the motivation of low achieving students. Skinner and Wellborn (1997) offer a perspective on motivation as a means of coping with academic stressors. They note that all children

will sometimes fail or experience great difficulty in their attempts to understand academic material. However it is these students' interpretation of and response to such experiences that most profoundly influences their opportunities to learn. This is especially true of those students who experience more substantial, enduring difficulties in school. Without effective coping strategies, lower achieving students can become overwhelmingly frustrated with schoolwork and elect to give up rather than persist in the face of such difficulties. They may begin to view themselves as incapable of learning and anticipate or expect future difficulties with their schoolwork, which will eventually influence how they approach new material as well as how they respond to experiences of difficulty or success.

While such coping responses can be considered a within-child characteristic (i.e., the child either responds effectively or does not), researchers and practitioners must also consider the classroom structures which influence student responses to such situations. Classrooms can be structured in ways that encourage students to interpret and respond adaptively to academic struggles. For example, when students perform poorly on tests or assignments, they can be given the opportunity to revise and resubmit their work rather than simply moving on to new material or the next assignment. When the former approach is taken, students are encouraged to view mistakes and misunderstandings as a natural part of the learning process. Instead of serving as a final, summative evaluation of what is learned (or not), evaluation becomes a part of the feedback process that indicates to students where they need to focus their attention and effort. Essentially, they have an opportunity to learn from their mistakes and develop an increased understanding of previously misunderstood material. Perhaps more importantly, they develop a more

adaptive perspective on learning, recognizing that while difficulties may be encountered, their effort and persistence are what lead them to greater learning.

Social-Cognitive Perspectives on Student Motivation

This coping framework aligns well with the broader theoretical orientation utilized in this study, the social-cognitive perspective. Such perspectives emphasize the role that social-contextual factors play in determining how students cognitively interpret and respond to learning experiences. Students' perceptions of classroom and school environments are seen as central determinants of achievement-related beliefs, affect, and behaviors (Ames, 1992a; Elliott & Dweck, 1988; Roeser, Eccles, & Strobel, 1998). Describing children as active meaning makers within social contexts, Roeser et al. (1998) note that "the meanings children derive from their experiences in school are instrumental in shaping their beliefs about themselves as learners, about the content being learned, and about the goals of the learning process itself" (p. 168). Such meanings influence the effort directed toward learning (Ames, 1992a) and are influenced by their perceptions of the organizational, instructional, and interpersonal features of classroom and school environments.

Linnenbrink and Pintrich (2002) note that "one of the most important assumptions of social cognitive models of motivation is that motivation is a dynamic, multifaceted phenomenon that contrasts with the quantitative view taken by traditional models of motivation" (p. 313). This perspective builds upon the incomplete, quantitative perspective that argues that students are either motivated or not (or have a little or a lot of motivation), instead focusing on the importance of understanding *how* and *why* (as

opposed to strictly the *how much)* students are motivated for school learning. Similarly, rather than viewing motivation as a personal disposition or trait that is only modestly changeable, social-cognitive perspectives view motivation as something that is situated and contextualized. This has important implications for classroom structure and instructional practices in that students' motivation is believed to be responsive to changes in characteristics of the learning environment. This perspective provides educators with a semblance of control in this motivational process, as they have the opportunity to structure learning situations in a way that encourages students to adopt a more adaptive perspective on learning and the educational process.

Today, perhaps the most prominent theory of motivation is achievement goal theory. An achievement goal refers to the goals or purposes of achievement behavior (Ames, 1992a), and is defined by "an integrated pattern of beliefs, attributions, and affect that produces the intentions of behavior, and that is represented by different ways of approaching, engaging in, and responding to achievement-type activities" (p. 261). Achievement goals "provide an organizing framework through which a variety of cognitive and affective responses to achievement situations can be interpreted" (Urdan, Kneisel, & Mason, 1999). Two contrasting achievement goal orientations have been emphasized in the research literature. A student adopting *mastery* (Ames & Archer, 1988) or *learning* (Dweck, 1986) goals is focused on developing new skills and understandings and achieving a sense of mastery based on self-referenced standards. In contrast, students adopting *performance* goals (Ames & Archer, 1988; Dweck, 1986) are focused on gaining or maintaining favorable judgments of their ability or avoiding negative judgments of their ability. In fact, recent developments in achievement goal

theory have distinguished between these different orientations. Students focused on gaining or maintaining favorable judgments of their ability are said to have a *performance-approach* goal orientation. Those with a *performance-avoidance* goal orientation are described as focused upon avoiding negative judgments of their ability or avoiding the demonstration of incompetence.

Research has shown that there are significant consequences to adopting each of these goal orientations. A mastery goal orientation has been consistently linked with positive outcomes for students across multiple developmental levels. In general, students adopting a mastery goal orientation are focused on the influence of effort, as opposed to ability, in determining success or a sense of mastery. Therefore they are more inclined to persist in the face of difficulty (Elliott & Dweck, 1988) and are more likely to take risks and to pursue challenging tasks in their schoolwork (Ames & Archer, 1988), as increased effort will likely lead to favorable outcomes. Furthermore, with a focus on mastering new ideas and skills, the quality of engagement in learning is enhanced, as students employ more effective learning strategies in order to gain a deeper understanding of the material (Ames & Archer, 1988; Nolen, 1988).

In contrast with mastery goal oriented students' focus on learning and improvement, students employing either performance goal orientation are focused on their own and others' perceptions of their ability. Higher levels of ability are demonstrated by either performing better than others or by achieving success with minimal effort. Students adopting a performance goal orientation are more likely to interpret poor performances as indicative of low ability. Early research on performance goals revealed that they were associated with a host of negative outcomes, including poor

grades, the use of ineffective learning strategies (Nolen, 1988), an avoidance of challenging tasks (Dweck, 1986) and a lack of persistence in the face of difficulty (Ames, 1992a).

More recently, however, research has suggested that there may be some positive benefits correlated with performance-approach goals. (Research continues to indicate that performance-avoidance goals are associated universally with negative outcomes.) The vast majority of this research has been done with college-age students, with preliminary results indicating that performance-approach goals are more strongly predictive of course grades (one measure of learning) than are mastery goals (Harackewicz, Barron, & Elliott, 1998). However minimal research has been conducted with school-age youth. Citing research employing a multiple goal perspective, Linnenbrink & Pintrich (2002) suggests that the most adaptive approach may be to be high in both mastery and performance-approach goals. One study with junior high students (Pintrich, 2000) showed that students who rated themselves as high in both goals "were not more anxious, do not experience more negative affect, and are equally motivated as those low in performance-approach goals and high in mastery goals" (Linnenbrink & Pintrich, 2002, p. 321-322). Based on this result, they suggest that performance-approach goals may not have the expected negative affect as long as they are accompanied by mastery goals.

Given the limited research with school age children, Midgley, Kaplan, & Middleton (2001) caution against the universal acceptance that performance goals have positive benefits. They note that there is "some evidence that performance-approach goals are more facilitative for boys than for girls, for older students than for younger

students, in competitive learning environments, and if mastery goals are also espoused" (p. 82). However these interpretations are tentative at best, and further research is warranted before definitive statements can be made. Instead, they suggest that given the potential "cost" of performance-approach and -avoidance goals (in terms of long-term learning and interest), schools should devote their efforts toward developing ways to enhance mastery goals.

One of the most notable and attractive features of the achievement goal theoretical perspective is that both individual and environmental factors are believed to be necessary components of motivation (Urdan et al., 1999). Achievement goal theory research has found that classroom and school learning environments significantly influence the type of goal orientation adopted by students and therefore the way that students approach and respond to school tasks (e.g., Ames, 1992b; Maehr & Anderman, 1993; Turner et al., 2002; Urdan, Midgley, & Anderman, 1998). Urdan et al. (1999) note that,

> situations or contexts can provide information or cues regarding the purposes of achievement. To the extent that individuals in these contexts attend to these messages regarding the purposes of achievement, these messages provide a structure in which individuals form their decisions about the goals they will pursue (p. 125).

The cues or messages represent the *goal structure* of the classroom or achievement context, influencing the *personal goal orientation* adopted by the student.

Research has consistently linked the perception of a *mastery* or *task goal structure* with positive student behaviors and cognitions. A *mastery goal structure* refers to the emphasis on learning and improvement as the primary reason for engaging in academic behavior. Perception of a *mastery goal structure* has been found to correlate with a host of positive outcomes, including higher self-efficacy, increased enjoyment of class, greater

use of cognitive learning strategies, an enhanced sense of belonging in school, and higher achievement (Ames & Archer, 1988; Roeser, Midgley, & Urdan, 1996). Conversely, perception of a *performance goal structure* in the classroom has been linked to a host of negative outcomes. A *performance goal structure* refers to the emphasis on demonstrating ability and outperforming others as the primary purpose for engaging in academic behavior. It has been found to be correlated with a more frequent use of self-handicapping strategies, such as procrastination, fooling around, and taking on too many responsibilities (Urdan et al., 1998), which are understood to represent a desire on the student's part to have alternative explanations, other than student ability, to explain failure or poorer than expected performance. In addition, a perceived *performance goal structure* has been linked with a greater reluctance to seek help when it is needed (Ryan, Gheen, & Midgley, 1998), a perspective that is particularly problematic for students who are experiencing difficulties in school.

More recently, Turner and colleagues (2002) used surveys, classroom observations, and classroom discourse analysis to explore the relationship between students' perceptions of the classroom goal structure and students' reported use of self-handicapping and avoidance strategies. They found that teacher behaviors and discourse have a substantial influence on the expression of self-handicapping strategies and avoidance behaviors in the classroom. Their research indicates that positive motivational benefits ensue when teachers convey a sense that mistakes are a natural part of the learning process and encourage a sense that question-asking and help-seeking are valued learning techniques as opposed to representing inadequacy and/or shame for not understanding the material. These positive benefits held even in classrooms which were

also rated as high in *performance goal structure*. Contrary to previous results as well as the authors' own hypotheses, Midgley & Urdan (1995) found that students' perceptions of a *performance goal structure* were not linked to higher reports of self-handicapping and avoidance behaviors. Turner et al. note that this finding aligns with Ames and Archer's (1988) previous assertion that the fostering a *mastery goal structure* is a more effective approach than reducing a *performance goal structure*.

The question then becomes, how do educators design learning contexts that represent mastery goal structures? The TARGET framework (Ames, 1992b) presents one potential model for analyzing classroom structures and their influence on student motivation. The TARGET framework explores six structures/factors that can be managed in ways that elicit a focus on the individual learning and improvement found with mastery goals. These classroom factors include **T**asks, **A**uthority, **R**ecognition, **G**rouping, **E**valuation, and **T**ime. The *Task* dimension explores how tasks can be developed and structured so as to provide an optimal level of challenge and to emphasize activities that students find interesting and intrinsically engaging. The *Authority* dimension suggests that teachers share authority with students by providing them choice and input on learning activities. The *Recognition* dimension recommends that teachers recognize all students who make progress and show improvement, not just the highest achievers. The *Grouping* dimension suggests that teachers group students in ways that promote cooperative learning and minimize interpersonal competition and social comparison. The *Evaluation* dimension recommends that teachers focus on individualized assessment of progress rather than comparisons of individuals or groups. And finally, the *Time* dimension suggests that teachers use time in creative ways that ease

the constraints of rigid scheduling and allow for more use of valuable learning activities that are hard to fit into shorter class periods. The additional "R" of the TARRGET framework stands for *Resources* and refers to decisions that are made on the use of money, materials, equipment and the provision of opportunities for students and staff.

Student Motivation and School Psychologists

While academic motivation has long been addressed within the fields of teacher education and educational psychology, school psychology has only recently begun to examine the influence of motivation on students' learning and performance in school. In introducing their edited mini-series in *School Psychology Review,* DiPerna and Elliott (2002) note that

> although previous miniseries and numerous individual articles have appeared in *School Psychology Review* exploring empirical and practical issues regarding academic skills, a focused discussion of academic enablers (or nonacademic skills that contribute to academic success) has yet to occur within the field of school psychology (p. 293).

To date, few studies have examined the motivational beliefs and practices of school psychologists. In the school psychology literature, motivation problems are conceptualized in diverse ways and from diverse perspectives. While some explore the cognitive aspects of why students engage in (or disengage from) learning activities as they do, much of school psychology literature takes a behavioral reinforcement perspective, emphasizing classroom management techniques to encourage work production and on-task behavior (e.g., Moore, Waguespack, Wickstrom, & Witt, 1994). Blanco and Bogacki (1988) summarized academic and behavioral interventions recommended by school psychologists and other professional psychologists working with

students who are underachieving as a result of motivation problems. Their suggestions varied considerably and included some cognitively-oriented strategies, such as recognizing increased effort, involving students in developing and monitoring academic goals, and creating individual standards for evaluation as opposed to norm-referenced standards. However, the primary strategies endorsed were more behavioral in orientation, with a particular focus on performance-contingent reward systems as a means of encouraging students to produce more (and better) work.

Similar findings were revealed by a small scale interview study conducted by this researcher (Rau, 2001). While the responses of the three school psychologists interviewed for this study recognized that cognitive and contextual factors influence student motivation, their intervention recommendations did not address such concerns. Instead they relied primarily on behavioral techniques, especially reward systems, with the express focus on increased work productivity. While cognitive factors, such as personal interest and students' beliefs in their ability to do their work, and contextual factors, such as classroom instruction, were noted when discussing the nature of the motivation problems and the factors influencing it, they were abandoned when it came to developing interventions to address the motivation concerns. This has important consequences for the learning experiences of both current and future students. If school psychologists continue to develop and endorse strategies that locate the motivation problem within the child as opposed to exploring the influence of the context, educators will have little incentive to alter the contextual characteristics that are likely contributing to current as well as future students' problems.

So why is it important for school psychologists to have a thorough and complex understanding of student motivation and the factors influencing it? School psychologists are in an excellent position to support teachers in multiple proactive and reactive levels. First, they can serve as resources in school and classroom reform efforts, providing teachers with the necessary connection to research-based practices in motivation as well as the on-site support in restructuring classroom and school policies and implementing new strategies. Second, they can serve as *motivational consultants* to teachers regarding particular student problems that compliments the traditional focus on academic and cognitive concerns. They can offer comprehensive, objective assessment and intervention support designed to enhance the engagement and learning of struggling students. In addition, they can provide much needed insight on severe academic problems, teasing out the distinctions as well as the connections between potential educational disabilities and motivation problems. Finally, their involvement in early identification and intervention serves as a preventive role for more long-term, pervasive, and potentially intractable educational and mental health problems.

Resource for classroom and school reform

In their book *Preventing school problems – Promoting school success* (2000), Minke and Bear identify multiple ways in which school psychologists can prevent school problems by focusing on the promotion of factors and strategies that contribute to school success. As they note, prevention and promotion are simply two sides of the same coin. In doing one, you are almost automatically doing the other. In their chapter on promoting achievement motivation, Morrone and Schutz (2000) discuss the use of the achievement

goal theory and the TARGET framework discussed above as a means of promoting classroom and school environments that encourage students to become effectively and adaptively engaged in the schooling process and ideally prevent the expression of motivation problems.

The overarching goal of the TARGET framework is to promote mastery goals on a classroom and school-wide basis. At a classroom level, this model provides a means of analyzing classroom structures and their influence on student motivation. Such analysis leads to specific suggestions of areas upon which to focus classroom change efforts. Similarly, it presents a framework for analyzing school-wide policies and procedures that can influence classroom efforts to encourage a mastery goal orientation. Maehr and Midgley (1991) note that, "teachers alone cannot carry the burden of significant school change; one must also engage school leaders in school change if the deepest structure of teaching and learning is to change" (p. 405-406). School psychologists can potentially serve as such leaders, providing support to individual classroom teachers as well as administrators, as they attempt to encourage a unified vision for motivating instructional practice. Again, this practice is designed not only to look at individual factors influencing student motivation, but also to consider the contextual factors encouraging adaptive or maladaptive approaches to schooling.

This motivational perspective fits nicely within the broader framework of school psychologists' expanded roles as defined in the *Blueprint for Training and Practice – II*, Ysseldyke et al., 1997). In this document, Ysseldyke and his colleagues note that school psychologists are in an exceptional position to provide the kind of support described above. He calls for school psychologists to be actively involved in supporting effective

instruction and the development and cognitive and academic skills. Further, he highlights their potential role in promoting positive school climates, supporting efforts to organize schools in a way that promote learning and prevent problems. In order to carry out these roles, "school psychologists should be adept at assessing the components of the instructional environment that facilitate or impede learning/behavioral change for students, and they should know how environmental factors and student characteristics interact to affect academic and behavioral outcomes" (p. 13).

Early, targeted intervention

A more common way for school psychologists to address student motivation issues is through their involvement in early identification and interventions for students experiencing academic difficulties in school. While the traditional model of school psychology practice has school psychologists providing formal, standardized assessment and serving as one of the principal gatekeepers of special education services, the field is moving in the direction of providing more preventive and proactive services that address student problems at their earliest stages. To the extent that early motivation problems contribute to student behaviors that may further exacerbate any student difficulties, it is important that educators act early on to change maladaptive learning behaviors.

One way for school psychologists to address such concerns is through child study or prereferral intervention teams (Ross, 1995). The primary goal of such teams is to understand the nature and extent of student difficulties when they are first noted by those adults closest to the student (i.e., the teachers and parents). Such concerns can then be

explored informally, with an emphasis on developing interventions to address the concerns in the regular education context.

> All [student support teams] are support systems for solving problems within the regular classroom. They are intended to provide immediate assistance to students and teachers, to enhance the ability of teachers to effectively serve difficult-to-teach students within regular classrooms and to reduce inappropriate referrals to special education (p. 227).

Such efforts to develop early, targeted interventions are the primary benefit of utilizing student support teams. They are designed to make a direct connection between early conceptualizations of the problem, assessment methods, and intervention strategies. Keith (2002) notes that,

> academic enabler/school learning models, although complex, are also practical. They can lead to an understanding of the variables that should be assessed in preparation for developing a learning intervention, the relative likely influence of different interventions, and the likelihood that different interventions will work separately or in concert (p. 394).

Only when school professionals have a commitment to understanding *why* students are struggling in school can they facilitate the development of interventions that can address such factors. As Stipek (2002) notes, "if we can explain why individuals behave the way they do in achievement settings, we might be able to change their behavior" (p. 8).

The recent push toward functional assessment connects directly with this perspective on understanding and responding to motivation concerns. Batsche & Knoff (1995) distinguish between *administrative assessment*, that which is designed to determine eligibility, placement, and diagnosis for special education services, and *functional assessment*, that which is designed to develop and evaluate interventions. While the former represents the traditional role of school psychologists, this study is designed to explore the latter with regards to student motivation. Achievement goal

theory provides a framework through which school psychologists can explore *why* students are responding to learning situations in ways that make them appear unmotivated or maladaptively motivated. It encourages them to explore the *function* that the behavior or responses serve and provides research-based practices that address the factors in the individual as well as the factors in the context.

Emphasizing the need for school psychologists to be adept at data-based decision-making, Ysseldyke et al. note that "school psychologists always have been responsible for collecting considerable data on individual students and educational programs; increasingly, they are responsible for gathering data on school systems and classroom environments as well" (p. 13). Gone are the days that school psychologists can focus exclusively on the diagnosis of educational and psychological impairments. They must now have at their disposal effective means of understanding the learning environments in which students find themselves. "They need to provide leadership in identification of those instructional environments (school and home), as well as cognitive, emotional, social, and behavioral factors that have a significant impact on school achievement and personal competence, and be able to use this information for the promotion of student competence or the prevention of student difficulties/disabilities" (p. 13). Taking into account this additional information allows school psychologists to not only better understand the factor contributing to students' difficulties, but also to better develop intervention and prevention plans that are designed to truly enhance the learning experiences of these students.

This move towards a more contextual approach to understanding the nature of problems and the factors influencing them has potential consequences for school

psychologists. As noted before, traditional school psychology practice has school psychologists conducting *administrative assessment,* in which efforts are devoted to determining whether or not a student meets the criteria for an educational disability. School psychologists, teachers, and administrators alike have become comfortable with this role, and some have been slow to embrace the functional assessment role for school psychologists. Ysseldyke et al. (1997) note that,

> the move to an ecological framework to help explain student performance requires school psychologists to understand and use this framework effectively. It also requires school psychologists to renegotiate informal contracts with teachers who for years were told that problems are located in students rather than in a mismatch between the characteristics of the learner and those of the instructional environment or the broader home/school context (p. 11).

In order for school psychologists to become adept at utilizing this framework, they will not only have to understand themselves how contextual factors influence the expression of student motivation, but also be able to persuade teachers and administrators alike that this approach offers greater promise in addressing the motivational problems suspected in their students.

Accurate identification – motivation problem versus educational disability

School psychologists must have a thorough understanding of student motivation and the factors influencing it in order to accurately identify the nature of student academic difficulties. School psychologists are often called upon when students are experiencing academic difficulties. And while students may experience academic difficulties despite their ability, these problems may not represent an academic disability. Instead, it may be that students are not effectively and adaptively capitalizing on learning

opportunities in the classroom. Similarly, learning opportunities may not be being presented in the most effective and adaptive manner and may be alienating students from the learning process. If school psychologists are better able to identify motivation problems (especially at their earlier stages), they can work towards address such concerns, ideally preventing academic and motivational difficulties from developing into more severe problems.

Further, by providing school psychologists with the skills and strategies for addressing and responding to student motivation concerns, they can more effectively distinguish between such problems and those that may require more intensive and remedial efforts such as that afforded via special education. If school psychologists have the requisite skills and perspectives to recognize and respond to such problems that are likely motivational in nature, unnecessary, costly, and time-consuming evaluations for special education may be avoided.

In addition, it must also be understood that for many students, it may not be an either-or situation. Even if an academic disability is identified, it cannot be assumed that changes in academic instruction, placement, and expectations will be sufficient for encouraging students to be more adaptively motivated. While the research is limited, the evidence indicates that students with educational disabilities, such as learning disabilities, are more likely to also exhibit motivation problems than their non-disabled peers. Chapman (1988) found that learning disabled students "had lower self-perceptions of ability, showed signs of learned helplessness, and reported lower achievement expectations" (p. 357). Similarly, Grolnick and Ryan (1990) compared learning disabled students with three other groups of students: matched-IQ non-disabled peers, a randomly

selected non-learning disabled group of students, and low achievers. They found that learning disabled students have lower perceived competence and academic self-regulation than their non-LD peers. To the contrary, no difference was found between the LD students and low achievers. Compared to all groups, the learning disabled students exhibited the most external locus of control for academic outcomes.

Why might this be so? One possibility is that students are often not identified as eligible for special education services until after they have been experiencing problems for a substantial period of time. School psychologists interviewed in the previously-described interview study (Rau, 2001) expressed the effects of this long-term struggle, noting that,

> they don't come to the team until, um, they're clearly failing at something... if you have a student who has been struggling in learning reading since kindergarten and we team 'em in third grade, that's a student who's had a lot of failures in reading. So that student is now actively often trying to avoid reading (p. 43).

Therefore, by the time students are provided services to address their academic disability, the problems may be so severe that the student has also developed maladaptive approaches to not only learning, but also motivation.

Prevention of long-term, severe consequences

Finally, educators (including school psychologists) must address motivation issues early on as they have the potential to affect broader, long-term academic and mental health functioning and outcomes. Roeser et al. (1998) note that early academic problems, such as poor motivation and declining academic performance, are correlated with behavioral and emotional difficulties that emerge in later adolescence, such as

school dropout, drug use and abuse, and delinquency. In this sense motivation problems may represent the early stages and/or precursors to more serious academic and behavioral concerns. Roeser et al. further argue that school professionals need to better understand the school and classroom level practices that affect students' learning opportunities and motivation to learn. This necessarily includes how support personnel, particularly school psychologists, understand and interpret school difficulties and are able to support classroom teachers in responding to such concerns.

School psychologists and student motivation – Needs assessment

The previously described research study conducted by this author (Rau, 2001) explored school psychologists' beliefs and practices regarding student motivation issues. While limited by the number of participants, this study revealed important factors that were limiting these school psychologists' opportunities and abilities to address motivation concerns that were raised in their practice. First, the participants' responses indicated that they had a restricted knowledge base from which to draw when such concerns were brought to their attention. They conceptualized motivation as a "drive" or "desire" to learn or perform, and listed behavioral strategies (with particular emphasis on rewards) as their primary recommendation to address the problem. The primary goal of such interventions was to increase the work production of the student. Little, if any, attention was given to either the cognitive aspects of student motivation or the contextual factors that may have influenced it, both of which are emphasized in achievement goal theory.

Not only did the participants identify few strategies to address motivation problems, they also indicated that they lacked specific tools and organizing frameworks

to assess student motivation. One psychologist, in particular, regretfully noted that he did not "really have a formal way to assess motivation" (Rau, 2001, p. 26). While they capitalized on some data sources (primarily student-focused behavioral observations) to find evidence of motivation problems, they did not seem to have either a guiding framework through which to understand student motivation or specific methods to investigate such concerns. The professional development seminars included in this research study are designed to provide such a guiding framework as well as specific tools that can be utilized to understand student motivation and the classroom-level factors influencing it.

Motivation Intervention

Much of the recent research in the area of student motivation is focused upon the examination of teacher beliefs and practices and how they influence student motivation (e.g., Ames, 1992a; Blumenfeld, 1992; Meece, 1991; Patrick, Anderman, Ryan, Edelin, & Midgley, 2001; Turner et al., 2002). Such research has explored teachers' instructional and management practices and how they affect students' motivation to learn and engage in their schoolwork. This study is designed to build upon that research by exploring the effects of a research-based intervention. Based on solid theoretical development and empirical research findings, this study attempts to explore not what is effective motivation practice, but how effective are the series of professional development seminars in encouraging school psychologists to adopt best practices in responding to student motivation issues.

One apparent contribution of the above research on teacher practices is the revelation that many teachers are practicing and classrooms are structured in ways that are not in line with current motivation theory and research (Patrick et al., 2001; Turner et al., 2002). Assuming that this lack of alignment is, at least in part, a result of insufficient knowledge regarding effective practices, there are several ways that this situation could be remedied. For instance, teachers could enroll in graduate course work or participate in professional development workshops to enhance their understanding of best practices with regards to motivation. Alternatively, researchers could engage in intervention research designed to introduce practicing teachers to new ways of thinking about, responding to, and encouraging adaptive student motivation in their classrooms. This study takes a slightly different route by addressing the knowledge and skills of support professionals (in this case, school psychologists) who have an opportunity to collaborate with teachers on student motivation problems. Brophy and Rohrkemper (1981) suggest that this is a productive means of responding as they found that, "teachers' confidence in their ability to effect change often assumed help from other adults (either the parents or school support services)" (p. 305).

Assessing student motivation

The subjective nature of student motivation presents challenges to educators attempting to assess the construct and determine its influence on student performance. DiPerna and Elliott developed an assessment tool that can be used by practitioners to explore the academic functioning of students. Using both teacher and student survey measures, the Academic Competence Evaluation Scales (2000) was designed to assess

"the skills, attitudes, and behaviors of a learner that contribute to academic success in the classroom" (p. 1). These include academic skills in the area of reading/language arts, mathematics, and critical thinking as well as the academic enablers identified previously (motivation, interpersonal skills, engagement, and study skills). While the ACES tool offers a systematic means of assessing factors that influence students' academic functioning, there are a few important limitations to this tool and its utility for school psychology practice.

First, it focuses exclusively on student skills and behaviors, while ignoring the influence of the learning context on their expression. "What are seen as students' motivation problems are often problems with the context" (Stipek, 2002, p. 17). Christenson and Anderson (2002) note that, "academic enablers, which are within-student variables, are essential for understanding student achievement; however, missing from this picture is the influence of context on the development and application of students' academic enabler skills" (p. 378). Without an examination and understanding of both individual and contextual factors and the reciprocal influence on one another, motivation problems may continue despite considerable efforts to change individual student characteristics.

Of course, this problem is not unique to this particular assessment tool, but instead connects with a larger concern that has been raised by the leaders in the field of school psychology. Ysseldyke & Elliott (1999) and Roberts (1995) note the importance of using assessment tools and procedures that analyze the functional relationship of academic problems to the critical variables in the classroom. While their focus has been centered on instructional practices that influence student learning, a similar argument can

be made for the investigating the influence of the classroom structures and instructional practices that affect student motivation.

In addition to the absence of contextual influences in their model, DiPerna and Elliott's scales are also limited in their conceptions of student motivation. While they claim to be interested in exploring the attitudes and behaviors that contribute to student learning, the ACES measure focuses almost exclusively on student behaviors. While this has advantages from a measurement and assessment perspective, this narrow perspective offers only a superficial glimpse into the motivation of students. The motivation subscale of the ACES assesses initiative and persistence regarding academic subjects, including items which address student responsibility for their learning, preference for challenging tasks, and goal-directed behavior. Its exclusive focus on student behaviors explores *what* students do to enhance their learning, however it does not explore *why* students approach academic tasks as they do. As noted previously, the function of these behaviors is equally important to consider as students may engage in the same behaviors for different reasons. Furthermore, these reasons have a profound influence on how students approach tasks, the intensity of their efforts, their response to experiences of difficulty and/or failure and a host of other factors.

Research Questions

This study explores the effects of a series of professional development workshops on the knowledge, beliefs and practices of school psychologists with regards to student motivation issues. Specific research questions and hypotheses include the following:

1. How does participation in a series of professional development seminars affect knowledge of motivation constructs and their application?
    - Treatment group participants will significantly improve their knowledge of motivation concepts
2. How does participation in a series of professional development seminars affect perceptions of competence in understanding and responding to motivation issues?
    - Treatment group participants will significantly improve the perceptions of competence in conceptualizing, assessing, developing interventions, and communicating this information to teachers in a persuasive manner.
3. How does participation in a series of professional development seminars affect motivational assessment practices?
    - Treatment group participants will rate themselves as more likely to utilize assessment techniques designed to understand the motivational beliefs and behaviors of students as well as the motivational characteristics of classroom learning environment, including those recommended by the TARGET framework.
4. How does participation in a series of professional development seminars affect motivational intervention practices?
    - Treatment group participants will rate themselves as more likely to recommend (to teachers) strategies emphasizing effort, improvement, and choice.

- Treatment group participants will rate themselves as less likely to recommend (to teachers) strategies emphasizing competition, public recognition, and punishment.

METHODS

Research design

This study utilized a quasi-experimental design (Kazdin, 1999) to explore the effects of a series of professional development workshops on the beliefs and practices of school psychologists with regards to student motivation problems. The quasi-experimental design included comparison between participants in a treatment group and a waiting-list control group on a variety of outcomes. Any differences between the two groups are assumed to be attributable to the participation in the intervention. One primary benefit of this design over a simple no-treatment control group design, is that it increased the overall likelihood of participation. All participants were ensured of the opportunity to complete the series of workshops. Presumably both groups of participants were equally interested in the content of the workshops, thus controlling, to some extent, this contributing factor. In addition, potential participants were more likely to be willing to participate in the potentially time-consuming assessment process than individuals who would not receive any direct benefit.

Participants

All school psychologists employed within four Michigan regional educational agencies (otherwise referred to as "districts") were offered the opportunity to participate in a series of professional development workshops described below. These districts were selected based on several pragmatic criteria. First, they were selected based on location. All districts were located within approximately one hour of the researcher, thus allowing

a reasonable travel time to conduct the workshops and to complete post-assessment data collection. Second, each district had at least one individual in a leadership or supervisory position who was familiar professionally to the researcher. These individuals either assisted with the date and time selection and location scheduling or connected the researcher with someone who could fulfill this role. Finally, each district had a sufficient number of potential participants so as to warrant conducting two separate series of workshops. The minimum number utilized for this selection criteria was 8. It should be noted that a representative from one additional district was contacted. However after two weeks of discussion and exploration, it was decided that there was insufficient interest from potential participants due to concerns that the workshops would be conducted too late in the school year when professional schedules (in this district) were less flexible. The district representative indicated an interest in conducting the seminars during the fall of the following school year.

For two of the four districts, a workshop flyer and a letter explaining the research study (see Appendix A) were sent to all potential participants at the professional addresses provided by the support staff at the district offices. A reminder post-card (see Appendix B) was sent to all potential participants in the second district who had not yet enrolled in the workshops, as the initial response rate was lower than expected. To sign up for the workshops, participants were asked to either call or e-mail the researcher at the contact information provided in the flyer or postcard. For the remaining two districts, a senior school psychologist or special education supervisor was contacted via phone and the workshop flyer and research letter were sent electronically. Copies of the flyer and research letter were then distributed by the original contact person to all other school

psychologists employed by each district. A list of interested participants was then reported to this researcher. The following information was collected from all participants at the time of enrollment: name, school district, number of years of experience, and degree level.

Of the invited participants across the four regional educational agencies, thirty-seven percent enrolled in the workshops (see Table 1). It should be noted that the response rate varied considerably across the districts, with as low as nineteen percent in the second district and as high as eighty-six percent in the fourth district. The low response rate for the second district may, in part, be explained by the fact that the first workshop of the first series of seminars was mistakenly scheduled when several schools in that district were on vacation. This oversight was found too late to make any changes.

Table 1. Participant information and workshop dates

		District #1	**District #2**	**District #3**	**District #4**	**Total**
Potential Participants		N=42	N=72	N=9	N=14	137
Total Participants		N=17 (40.4%)	N=14 (19.4%)	N=7 (77.8%)	N=12 (85.7%)	50 (36.5%)
Treatment		N=7	N=7	N=5	N=7	26
Workshop Dates	#1 #2 #3	2/3/03 2/20/03 3/3/03	2/17/03 3/10/03 3/25/03	4/25/03 5/9/03 5/16/03	5/2/03 5/23/03 5/30/03	
Control		N=10	N=7	N=2	N=5	24
Workshop Dates	#1 #2 #3	3/19/03 4/28/03 5/19/03	4/1/03 4/14/03 5/5/03	10/17/03 11/1/03 11/21/03	Scheduled for 1/04	

Initially, all potential participants were informed that they would be randomly assigned to either the treatment group or the waiting-list control group. Random assignment had to be abandoned at the outset given personal and professional constraints noted by several potential participants. These included such constraints as future professional meetings in conflict with workshop dates, scheduled school vacations in conflict with selected workshop dates, and impending personal leaves of absence due to pregnancy. In place of random assignment, groups were arranged so as to balance the average number of years of experience in each group while also taking into account the personal and professional constraints of the potential participants. Essentially those participants with personal and professional constraints were assigned to the requested series. Those with the flexibility to attend either series were placed so as to balance the number of years of experience in each group.

Chi-squared analysis or independent samples t-tests were conducted to determine if the two groups were similar in terms of the gender, degree level, and years of experience of the participants (see Table 2). The majority of the participants were female, including a total of thirty-six females (72%) and fourteen males (28%). Twenty-two females and four males were assigned to the treatment group, while the control group included fourteen females and ten males. Chi-squared analysis indicated the there was a significant difference in the number of females and males in each group ($\chi 2 = 4.276$, $p < .039$). In contrast, chi-squared analysis indicated that there was not a significant difference in the number of masters, specialist, and doctoral level psychologists in the two groups ($\chi 2 = 2.018$, $p < .364$). One masters-level, twenty-two specialist level, and three doctoral level participants were assigned to the treatment group, while the control

group included three masters level, twenty specialist level, and one doctoral level participants. And finally, results from an independent samples t-test indicated that the treatment (mean = 12.31, S.D. = 9.05) and control (mean = 13.08, S.D. = 10.21) groups were approximately equivalent in terms of the average number of years of experience of their participants ($t = .331$, $p < .742$).

Table 2. Descriptive information on professional training and experience

		Treatment	Control	Total	
Gender	Female Male	22 (84.6%) 4 (15.4%)	14 (58.3%) 10 (41.7%)	36 (72%) 14 (28%)	$\chi^2 = 4.276$* $p < .039$
Degree	M.A./M.S. Ed.S./S.Psy.S. Ph.D.	1 (3.8%) 22 (84.6%) 3 (11.5%)	3 (12.5%) 20 (83.3%) 1 (4.2%)	4 (8.0%) 42 (84%) 4 (8.0%)	$\chi^2 = 2.018$ $p < .364$
Years of Experience	Mean (S.D.)	12.308 (9.0455)	13.229 (10.5294)	12.750 (9.6955)	$t = .331$ $p < .742$

Those assigned to the treatment group participated in the series of seminars in between pre- and post-assessment data collection. An additional series of professional development seminars were offered to the waiting-list control group participants upon completion of the data collection for this study. Two of the four groups completed the control group seminars in the spring, while the other two districts were offered the workshops the following fall. See Table 1 for the total number of participants from each regional educational agency as well as specific workshop dates for each group.

The professional development workshops were offered to all interested parties in each of the chosen districts, regardless of whether or not they chose to participate in the research study. All workshop participants initially agreed to participate in the data collection for the research, including the pre-, post-, and delayed-post assessment

(treatment group only), however one control group participant for the third district did not return the consent form or research measures.

For the most part, the participants in this research study all have relatively traditional school psychological roles. As shown in Table 3, they spend a great majority of their time on formal assessment activities related to evaluation and diagnosis for special education services. This ranged from as high as 80 percent to as low as 20 percent, with an average of 50.7 percent. Comparatively, they spend, on average, a relatively low percentage of their time on consultation (mean = 12.4) and intervention (mean = 5.1) activities. These role definitions can, in part, be explained by the relatively high number of students the school psychologists are expected to serve. Excluding from the calculation one outlier, a participant who serves the majority (N = 20) of the parochial schools in her large urban district, the participants, on average, were responsible to 4.1 schools (elementary, middle and high) and center-based programs, serving 1904 students. Furthermore, these participants worked in high caseload districts, with an average school psychologists-to-student ratio of 1:1614. This number far exceeds the National Association of School Psychologists' (NASP) recommendation of one school psychologist for every one thousand students.

Table 3
Descriptive information on current professional assignment and activities

		Mean (SD)
Number of assigned schools and center-based programs		4.10 (2.156)
Number of students in assigned schools		1904.46 (1231.76)
District Level School Psychologist-Student Ratio		1:1614
Percentage of Time in Various Professional Actvities	Adminstration	6.48 (6.70)
	Staffings	18.37 (9.68)
	Formal Asmt.	50.67 (13.21)
	Informal Asmt.	4.86 (6.46)
	Consultation	12.41 (7.03)
	Intervention	5.08 (5.38)
	Supervision	1.05 (2.63)
	Other	1.21 (6.56)
Approximate percentage of cases involving motivation issues		42.85 (23.35)
Factor motivation issues into major educational decisions		3.72 (0.882)
Teacher seek support re: motivation issues		2.80 (.7284)

Procedures

Intervention

The intervention included a series of three professional development workshops designed to enhance the skills and competencies of the school psychologists with regards to student motivation difficulties. The workshops took place over the course of a three-to six-week period, with a minimum of one week between each session. Pretest data were

collected prior to the start of the first session for the treatment group. Posttest data was collected within one week after the conclusion of the third session for the treatment group. Finally, delayed posttest data were collected from the treatment group participants *only* approximately three to six weeks after completion of the third session. Additional details on data collection procedures are described in the *Overview of Research Measures* section of this chapter.

The professional development workshops were offered for State Board Continuing Education Units (SB-CEUs). The application for SB-CEUs was completed by the researcher and submitted to the State of Michigan by the administrative staff of the first Intermediate School District involved in the study. Participants were required to attend all three sessions (totaling 10.0 hours of instructional time) in order to receive the (1.0) SB-CEUs. There was no cost for participation in the series of workshops, however those desiring the SB-CEUs paid a $5 administrative fee to the Intermediate School District to get the certificate of participation. In addition to the opportunity to earn SB-CEUs, all research participants were entered into a drawing for one of six copies of the motivation text, *Motivating Students to Learn* (1998), by Dr. Jere Brophy, as an incentive for participating in the workshops. The workshops were presented in conference rooms at the main campuses of the regional educational agency offices, so as to offer maximum convenience to the participants. Administration officials at each district assisted in finding adequate meeting space, determining workshop times, and providing refreshments to the participants.

The workshops strategically moved from familiar theoretical perspectives (e.g., behavioral) on motivation to an introduction of new conceptual/theoretical perspectives

to an exploration of assessment tools and interventions strategies grounded in these theoretical foundations. In addition, the participants were provided an opportunity to explore the use of these perspectives and tools in their practice, posing questions and discussing challenges with consulting on student motivation issues.

Workshop: First session.

The primary goal of the first session was to provide a research-based theoretical lens through which to understand student motivation. As Stipek (2002) notes, "motivation theories are important to discuss because everyone has them. And consciously or unconsciously, people rely on their theories of what causes behavior when they try to change their own or another's behavior." This session began with a discussion of current perceptions and practices of the participants regarding the student motivation issues they find in their own schools. This was followed by a structured discussion of why student motivation is important to consider when attempting to understand students' learning experiences and why school psychologists are particularly well-suited to take on this role. The effects of student motivation on academic achievement, learning beliefs, learning behaviors, and responses to experiences of success and failure were presented.

The remainder of the first session was devoted to an exploration of theoretical and conceptual perspectives on student motivation. A general introduction to both behavioral and social-cognitive perspectives of student motivation was presented, with substantial attention given to achievement goal theory. Participants were provided examples of the beliefs systems and behaviors of students adopting different achievement goal orientations, and the research on the benefits and consequences of adopting these goal

orientations was presented. Moving beyond personal goal orientations, the session ended with an introduction of the concept of classroom goal structures and a discussion of how classrooms can be structured in ways that encourage or elicit various goal orientations in students. Participants were divided into two groups and asked to create the most "extreme" mastery or performance oriented classroom. They were asked to consider the policies and procedures as well as the physical appearance of the classrooms. After describing their classrooms to the larger group, all participants were assigned one of four student roles (Star, Struggling, Inconsistent, and Hopeless; see Appendix C for descriptions). This was followed by a discussion of how these types of students might respond to the various conditions of the extreme classrooms. This discussion was designed to serve as a lead-in for the following session when intervention frameworks were introduced. Throughout the course of the sessions, participants were encouraged to ask questions and offer input as they desired. In addition, handouts were provided that can be used for future reference and can be distributed to teachers and parents as deemed appropriate (See Appendix D). Furthermore, notes from the classroom goal structure activity were sent to all participants via e-mail, and participants were encouraged to consider these ideas as they worked with individual students and observed in various classrooms prior to the next workshop.

Workshop: Second session

The second session focused on assessment tools and intervention frameworks that the participants could utilize in their own practice when responding to student motivation concerns. This session began with a brief review of the theoretical and conceptual

perspectives introduced in the first session. Participants discussed the extent to which they had been able to apply the ideas learned in the previous session to better understand the motivational issues experienced by students with whom they worked and the motivational climates of the classrooms within which they observed. These ideas were then explored further through the introduction of the TARGET intervention framework, the *Observing Patterns of Adaptive Learning* (OPAL) observation protocol (Patrick et al. 1997), and the *Patterns of Adaptive Learning Scales* (PALS) (both the student and teacher versions) (Midgley et al., 2000). More information on these tools and frameworks is provided below. This session utilized primarily lecture format, however as with the first session, participants were strongly encouraged to ask questions and offer input as they desired. All participants were provided numerous handouts, including descriptions of the TARGET model (see Appendix E), selections from the OPAL and PALS manuals, and PALS surveys as well as description and scoring sheets (see http://www.umich.edu/~pals for copies of these surveys and complete manuals). Prior to the next session, participants were asked to consider the utility of achievement goal theory, the TARGET model, the OPAL observation protocol, and the PALS surveys in conceptualizing and responding to one or more current cases in their practice.

Workshop: Third session

The third and final session provided participants with an opportunity to discuss their experiences in using the assessment tools and intervention frameworks listed above. Similar to the previous workshop, this session began with a brief review of the theoretical and conceptual perspectives introduced in the first session. Then, data from those

participants who had the chance to utilize the PALS surveys were used to illustrate the survey databases created by the researcher. A detailed example case (see Appendix F), including PALS information from a case student and his classmates as well as OPAL/TARGET observational data from his classroom, was discussed in small groups, followed up by a large group discussion of how to communicate this data to teachers in a consultation relationship. General consultation principles were discussed as well as how to convey the specific motivational data provided by these tools. In addition, approximately one-third of this session was devoted to the exploration of ways of extending the above tools and frameworks beyond the individual student case and/or classroom to the entire school. The TARRGET model was introduced and specific examples of policies and practices of each of the dimensions were discussed (see Appendix G). Finally, in small groups participants were asked to develop their own personal "plans of action", exploring how they could apply the knowledge and tools learned in the series of workshops to their own practice. They were asked to explore who they would involve at the initial stages (e.g., individual teachers, entire staff, administrators) and how they might present the information and employ the tools (e.g., staff meeting, full classroom administration, individual cases).

Instructional Design Principles and Procedures

Each workshop session was developed and conducted with several instructional design principles in mind. Table 4 illustrates how the order and way in which the content was presented reflects these various design principles.

Table 4. Summary of Instructional Strategies Utilized During Professional Development Workshops

Instructional Strategies	Session #1	Session #2	Session #3
Present organizing framework for session, including specific learning objectives (What is the goal for the session? What, specifically, can participants expect to learn?)	Theoretical/Conceptual Lenses for Motivation • Behavioral perspectives • Social-Cognitive perspectives • Achievement Goal Theory	Tools and Frameworks • Review Session #1 • Introduce TARGET framework • Introduce OPAL Observation protocol and PALS surveys	Review and Extension to School-Wide Framework • Review Sessions #1 & 2 • Discuss participant and facilitator-provided cases • Introduce TARRGET framework for school-wide intervention
Activate prior knowledge and experience (How are motivation issues currently addressed in practice? How do new concepts and strategies connect to current practice?)	• Why student motivation? • Why school psychologists? • Current practice – what are teachers doing now about motivation issues? What are participants suggesting? • Classroom goal structures – solicit examples of current practice that aligns with achievement goal theory	Within each TARGET dimension, solicit participants' perspectives on … • how that dimension affects student motivation, • how that dimension is currently manifested in the classrooms in which they work. Goal – explore current practice and the extent to which it is line with this TARGET framework. • Also discuss current motivation assessment practices and their effectiveness	Solicit participants' perspectives on school-wide policies and practices that influence student motivation (in general). • More specifically, within each TARRGET dimension, begin discussion by soliciting participants' perspectives on how that dimension is currently manifested in the policies and practices of the schools in which they work.

Table 4 (cont'd)

Instructional Strategies	Session #1	Session #2	Session #3
Review concepts learned in previous sessions	[Not applicable]	Review definitions/ descriptions of... • Achievement goals • Classroom goal structures Review research on achievement outcomes and behaviors associated with each goal orientation	Briefly review definitions/ descriptions of... • Achievement goals • Classroom goal structures Review research on achievement outcomes and behaviors associated with each goal orientation Briefly review TARGET framework, OPAL protocol, PALS surveys
Introduce new content	Primarily "lecture" style with opportunity for participants' to pose questions • See above for new content/specific learning objectives • Cite research on achievement outcomes and behaviors associated with each achievement goal orientation	Primarily "lecture" style with opportunity for participants' to pose questions • See above for new content/ specific learning objectives	Primarily "lecture" style with opportunity for participants' to pose questions • See above for new content/ specific learning objectives

Table 4 (cont'd)

Instructional Strategies	Session #1	Session #2	Session #3
Apply concepts (What do these ideas look like in practice?)	• Examples of cognitions and behaviors associated with each achievement goal orientation • Classroom Goal Structure Activity - in small groups, participants create "extreme" mastery and performance oriented classrooms	TARGET model • Provide examples of classroom policies and practices associated with effective and ineffective manifestations of each TARGET dimension OPAL protocol & PALS surveys • Provide directions/protocol for each assessment tool	Review of TARGET, OPAL protocol and PALS surveys • Example Case (Appendix F) TARRGET framework • Provide examples of school-wide policies and practices associated with effective and ineffective manifestations of each TARRGET dimension
Discuss potential impediments or constraints (What may get in the way of utilizing this content?)	• Primarily participant generated • Presenter begins discussion of teacher resistance to changing classroom practices	• Primarily participant generated • Within discussion of each TARGET dimension, discuss potential receptiveness of teachers to changing practices in that area	• Primarily participant generated • Structured discussion of how to effectively present motivation data o Data-based decision-making o Linking assessment to intervention o Teacher choice for intervention o Ongoing support o Ongoing data collection to monitor intervention effects

Table 4 (cont'd)

Instructional Strategies	Session #1	Session #2	Session #3
Put the ideas into practice (including development of a plan of action)	Homework: • Consider ideas introduced in the workshop and whether or not they enhance the participant's ability to understand the motivational issues involved with particular students or manifested in particular classrooms • Look for examples of how achievement goals are shaped in classrooms in which they work	Homework: • Use the TARGET framework and OPAL protocol to analyze the motivational climate of one or more classrooms • Select one student and one teacher with whom to complete the PALS survey • Bring data to following session	Plan of Action: Small group and whole group discussion of how psychologist will apply the concepts learned into their school psychology practice • Who will they approach o Individual Teachers o Full Staff o Administrators • How will they present the information o At staff meeting o In consultation with individual teacher o With regards to the specifics of an individual case

Provide organizing framework and clear learning objectives.

First, each session began with a broad overview of the material to be covered during that workshop. In addition, the first session included a broad overview the topics and skills to be covered during the series. This was designed to establish expectations for the session and to foreshadow expectations for future sessions. In addition specific learning objectives were outlined and participants were provided an opportunity to ask questions about what they could expect to learn in each session.

Activate prior knowledge regarding student motivation.

Given that all participants indicated that motivation issues play a role in a substantial proportion of the cases in which they are involved, it was important to acknowledge and activate participants' prior knowledge and perceptions of the nature of motivation issues, how these issues were currently assessed, and what types of strategies were currently being recommend to address such concerns. In addition, given that the participants had chosen to enroll in the series of seminars, they likely had at least some tentative ideas as to why it was important for school psychologists to have well-developed skills to address motivation issues. Based on each of these assumptions, the beginning of each session was devoted to a structured discussion of why the concepts and strategies were relevant to pursue. Participants' ideas were discussed and then connected with the researcher's previously-determined perspectives on the issue at hand. For instance, during the first session, the researcher/workshop facilitator lead a structured discussion of why it is important to address motivation issues in the first place, and why school psychologists are particularly well suited and situated to provide support on such

issues. During the second session, this discussion centered on the utility of data-based decision making in general, addressing such issues as the link between assessment and intervention and the need to explore both personal and contextual factors in order to fully understand and respond to motivation concerns. During the third session, the discussion was focused upon the limitations of working at the classroom level without acknowledging the broader systemic issues that may afford or constrain teachers' opportunities to make changes to their classroom structures that will lead to more adaptive motivational patterns in their students. While discussions varied somewhat depending on the input of the participants, each group explored several common points that had previously been developed by the researcher.

Review concepts presented in earlier sessions.

Prior to the introduction of new material and strategies at each session, previously known or presented material was reviewed. This essentially served two purposes. First, it provided an additional opportunity for the concepts and their application to be processed. Second, it served as an opportunity for participants to pose any questions that had developed since the previous meeting. In the first session, this included a review of behavioral theory and its application to motivational issues in schools. Behavioral reinforcement concepts were presented, including the conceptual foundations behind their use and research-based recommendations for how and when such techniques should be employed. For the second and third sessions, this component was devoted to a review of social-cognitive perspectives on motivation and achievement goal theory. Similar to the format for the initial introduction at the first session, terms were defined and explored in

relation to the potential belief systems and behaviors of students. In addition, research on the learning and behavioral outcomes associated with each achievement goal orientation were presented.

As part of this review process during the second and third session, participants were asked about the extent to which they had been able to apply the concepts and assessment and intervention strategies to the motivational issues they see in their own practice. For instance, participants were asked to discuss how the personal achievement goals and classroom goal structures introduced in the first session were manifested in the students with whom and classrooms in which they had worked since the previous session. Participants cited examples of students who were putting forth little effort and offering multiple excuses and how this could be interpreted as evidence of a performance-avoidance orientation. They talked about how they now recognition the plethora of public recognition systems posted in the school and individual classrooms and how those systems might have a negative impact on students who were not performing at the top of their class.

Introduce new content... theoretical and conceptual frameworks.

Building upon prior knowledge and previously introduced concepts, each session included an introduction of new content. Lecture was the primary means by which this information was conveyed to the participants. Several key points need to be made about how this material was presented. First, each introduction started out with an overarching connection to the broader theoretical concepts being explored. For instance, during the second session when the Evaluation structure of the TARGET model was introduced, it

was explained that the overarching goal was to structure evaluation procedures so that they provide feedback to students about what they have learned, what they have not yet learned, and how students can correct any misconceptions or insufficient understandings. In this way the evaluative feedback elicits a *mastery goal* in that it encourages students to focus on their own individual improvement and progress toward instructional goals.

Applying new concepts.

The theoretical connection was followed up by specific examples of how the concept could be translated into practice. Continuing with the Evaluation dimension of the TARGET framework, specific exemplar practices include providing opportunities to improve by allowing students to retake tests or revise and resubmit papers, projects, and other assignments. These policies and practices provide a great example of how teachers can convey to student the broad overarching principle that the most important priority in the classroom is that students learn the materials. (See the TARGET handout in Appendix E for additional examples.)

The most thorough application of the concepts learned in the first two workshops is the example case that was explored in small groups in the third session (see Appendix F). This case was introduced with general information about the student and his classroom. The 5th grade student was described as struggling primarily in the literacy domains. While he was a well-liked, popular, athletic young man, his teacher expressed concerns that he was not producing much in-class work nor much homework and she interpretation his actions as evidence that he was beginning to give up due to frustration with his struggles. His teacher was described as well-liked by the students. There were

few behavior management problems in her classroom, and she was described as having solid instructional skills. OPAL observational data and PALS survey responses were provided to all participants and they were asked to work together with their colleagues to interpret the data and make recommendations for changes to the classroom practices. Finally, they were asked to justify how those changes would likely affect the achievement goal orientation of the student.

Discussing potential impediments and constraints to implementation.

In addition to presenting new information, each session included ample opportunities for the participants to ask questions regarding how these ideas apply to their own professional experience. Participants raised concerns about how willing teachers might be to make changes to their classrooms based on feedback from the school psychologist. During the second and third sessions, general consultation principles were discussed. These included the following: 1) identifying and acknowledging the effective as well as ineffective practices that are occurring in the classroom, 2) identifying an appropriate "starting point" in which changes will have the greatest influence and that teachers will find acceptable, 3) working in small increments rather than trying to endorse an overhaul of classroom practices, and 4) documenting the effects of the changes through anecdotal records and/or formal assessment.

Translating learning into action... homework and plans of action.

Finally, each session ended with a homework plan or an activity that provided participants an opportunity to put the ideas into practice. "Homework" for the first

workshop called for participants to explore the extent to which personal achievement goals and classroom goal structures introduced in the first session were manifested in the students with whom and classrooms in which they had worked prior to the second session. These observations and interpretations were then discussed near the start of the second session. "Homework" for the second workshop called for participants to use the TARGET framework and OPAL protocol to analyze the motivational climate of one or more classroom. Further, they were asked to select at least one student and one teacher with whom to complete the PALS survey. This data was brought to the third session, where one participants' data was used to illustrate the PALS database and the whole group worked together to interpret the data. The final activity of the third workshop provided participants an opportunity to plan how they will apply the concepts learned into their school psychology practice. They were asked to consider who they will approach (e.g., individual teachers, full staff, administrators, parents) and how they will present the concepts learned in the workshops along with their classroom application (e.g., with regards to a specific student case, in consultation with an individual teacher regarding his/her classroom practices, or at a school-wide staff meeting). Participants were encouraged to consider their own orientation and typical school psychological practice in order to determine how they might be most effective in conveying this information to their fellow professionals.

Observing Patterns of Adaptive Learning: A Protocol for Classroom Observations (OPAL) (Patrick et al., 1997).

The *Observation Patterns of Adaptive Learning* observation protocol was designed to guide and assist in documenting observations of characteristics of school classrooms. The OPAL is grounded within an achievement goal orientation view of motivation, with additional attention given to current research on classroom instruction and teacher behaviors. It is structured to draw the observer's attention to particular classroom features that current research and theory development have indicated would likely influence the quality and nature of student motivation.

Building on the TARGET framework, the first six of the nine observational categories are the TARGET dimensions (described above). Additional dimensions include the Social dimension, operationalized as the student-student and teacher-student interactions, especially those that represent endorsement of social responsibility (for the individual or group) and conflict resolution; the Help-seeking dimension, operationalized as any behaviors or statements designed to seek help from the teacher, other students, or available resources; and finally, the Messages dimension, which generally include comments from the teacher indicating his/her beliefs and assumptions about school, expectations for work, and student behavior, but that are not linked to a specific academic activity (*OPAL Manual*, p. 3). The manual includes a detailed description of each category, including a thorough explanation of how the categories are operationalized and specific examples of each category and recommended classroom features that address each dimension. Similar to the PALS surveys described below, this observation protocol was designed for and had been used exclusively for research purposes up to this point.

For the purposes of the professional development workshops, only the original six TARGET dimensions and the Help-Seeking dimension were presented to the participants.

Patterns of Adaptive Learning Scales (PALS) (Midgley et al., 2000).

The *Patterns of Adaptive Learning Scales* is a set of surveys developed with an achievement goal theory perspective of motivation in mind. These surveys are designed to examine the relation between the learning environment and students' motivation, affect, and behavior. The student scales assess personal achievement goal orientations, perceptions of teacher's achievement goals, perceptions of the goal structures in the classroom, achievement-related beliefs, attitudes, and strategies, and perceptions of parents and home life. For the purposes of the professional development seminars, only the first four areas were presented to the participants. Teacher scales assess their perceptions of the goal structure in the school, their goal-related approaches to instruction, and personal teaching efficacy. For the purposes of the professional development seminars, the latter area (personal teaching efficacy) was excluded from the workshops. The surveys use a five-point Likert-type scale. Items on the student scales are anchored at 1= "Not at all true," 3 = "Somewhat true," and 5 = "Very true." Items on the teacher scales are anchored at 1 = "Strongly disagree." 3 = "Somewhat agree," and 5 = "Strongly agree."

Psychometric properties: Up to this point in time, the surveys had been used exclusively for research purposes. Over the last decade the PALS survey has been used in numerous research studies conducted in nine school districts across three Midwestern

states. (See PALS Manual for a listing of the specific studies.) It has been administered to students and teachers at the elementary, middle, and high school levels. The socioeconomic status of the participating districts has ranged from low- to middle income. In addition, it has been administered to students enrolled in and teachers working in coeducational public schools. The proportion of male and female student respondents has been approximately equal. The various research samples have been ethnically diverse, with up to fifty-five percent minority participation (primarily African-American) in the student samples and up to thirty percent minority participation (primarily African-American) in the teacher samples. Reliability data listed in the PALS Manual indicates that each of the subscales has acceptable internal consistency (all greater than or equal to 0.69). Subscale reliabilities range from 0.70 to 0.89 for the student subscales and from 0.69 to 0.81 for the teacher subscales.

Overview of Research Measures

Prior to the start of the intervention, all participants were asked to respond to a series of surveys and questionnaires that explored the school psychologists' knowledge and beliefs with regards to student motivation. Table 5 provides a list of the research outcomes, the measures utilized to assess them, and a data collection timeline for each measure. The *Motivation Knowledge Quiz* was administered to collect an objective measure of the participants' knowledge of the motivation concepts introduced in the workshops. The *Perceptions of Competence* survey provided insight into the participants' subjective ratings of their skills in understanding and responding to student motivation concerns. The *Assessment of Motivation* survey explored the participants'

likelihood of utilizing various assessment techniques to explore student and contextual characteristics when attempting to understand student motivation. In addition, it provided data on the extent to which participants attended to the influence of the six TARGET dimensions on student motivation when observing in classrooms. And finally, the *Motivation Strategies* survey assessed the likelihood of recommending particular types of strategies to enhance student motivation, including strategies focused on effort/improvement/choice, competition/public recognition, and punishment.

Table 5. Research outcomes, research measures, and administration timeline

Research Outcome	Research Measure	# of items	Administration Timeline		
			Pretest	Posttest	Delayed posttest
Content Knowledge of Motivation	*Motivation Knowledge Quiz*	13	X	X	
Perceptions of Competence Subscales: - Conceptualization - Assessment - Intervention - Communication/Persuasion	*Perceptions of Competence* survey	21 (3) (8) (4) (6)	X	X	X
Assessment Strategies – Student characteristics	*Assessment of Motivation* survey	5	X	X	
Assessment Strategies – Contextual characteristics	"	5	X	X	
Assessment Strategies – TARGET dimensions	"	6	X	X	
Intervention Strategies – Effort/Improvement/Choice	*Motivation Strategies Survey*	10	X	X	
Intervention Strategies – Public Recognition/Competition	"	10	X	X	
Intervention Strategies – Punishment	"	5	X	X	

All treatment group participants completed these pre-surveys and questionnaires during the first forty-five minutes of the first session. The pre-assessment survey/questionnaire packets for the control group participants were either mailed in time to arrive the day of the first treatment group session (districts #1 and #2), or they were left that afternoon on the participants' desks at work (districts #3 and #4). Participants in the latter two districts were called that day and informed that the packet of surveys had

been left at their work location. A self-addressed, stamped envelope was included with the packet in order for these control group participants to return their measures free of charge. Reminder phone calls were made to all control group participants approximately three to five days after the surveys were distributed so as to ensure that the pre-measures were completed in a timely manner.

With the exception of the participant information form, all surveys and questionnaires were repeated upon completion of the first series of professional development seminars (after the treatment group had completed the seminars but prior to the control group's participation in the workshops). All treatment group participants were given their packet of surveys at the end of the final workshop in their series. The post-assessment survey packets for the control group participants were either mailed in time to arrive the day of the last treatment group session (districts #1 and #2), or they were left that afternoon on the participants' desks at work (districts #3 and #4). Participants in the latter two districts were called that day and informed that the packet of surveys had been left at their work location. All post-assessment packets included instructions asking that the packets be completed in one sitting and returned within a week. In addition, each packet included a self-addressed, stamped envelope for return of the post-measures free of charge. Reminder phone calls were completed approximately three to five days after the surveys were distributed so as to ensure that the post-measures were completed in a timely manner. A brief description of each measure is included below.

Participant Information Form.

All participants were asked to fill out a brief questionnaire (see Appendix H) describing their professional training and role as a school psychologist and the extent to which they address motivation issues in their practices. The professional training questions included the following: degree level, years of experience as a school psychologist, and additional experiences with children, youth, and families. In addition, the participants were asked to provide information regarding their number of years working at in their current district. Professional role questions were designed to solicit descriptive information on the participants' current professional assignments including the number of schools they serve, at which levels, and approximately how many students are enrolled in such schools. Finally, the participants were asked to estimate the percentage of time they spend in various professional activities, including administrative responsibilities, meetings, formal and informal assessment, consultation, intervention, supervision, and any other activities not included on the list.

In addition, all participants were asked to provide some general information about the extent to which they believe motivation issues are present in the cases in which they are involved. First, they were asked to estimate the percentage of cases in which they are involved for which motivation is an important contributing factor to the student's academic difficulties. Second, they were asked to rate the extent to which they consider student motivation when making major educational decisions (e.g., referral for assessment, eligibility for special education). And finally, they were asked to make a judgment regarding the extent to which the teachers with whom they work seek their support for motivation issues.

Motivation Knowledge Quiz.

As a means of assessing the content knowledge gained as a result of participating in the professional development seminars, all study participants (treatment and control) completed a thirteen-question assessment of their motivation knowledge (see Appendix I). This assessment was created by the researcher and was designed to be closely linked to the instructional goals of the professional development workshops, with a heavy emphasis on the application of achievement goal theory to student motivation problems. The format included both multiple-choice and true false questions.

Perceptions of Competence.

As a result of participating in the series of seminars, it was expected that treatment group participants would develop an enhanced sense of competency in conceptualizing and responding to motivation problems. Therefore, all participants completed a 21-item questionnaire (see Appendix J) assessing their perceptions of competence in four related areas. This measure was developed by the author for the purposes of this research study. The first area, conceptualization of motivation issues, explored the extent to which the participants believe they are capable of understanding the nature of motivation problems and the factors influencing them (N = 3 items). The second area, assessment of motivation, explored the participants' ratings of their competence in assessing individual students' motivation as well as the motivational climate of the classroom. It further explored the participants' sense of competence in utilizing particular assessment tools, such as interviews, observations, and surveys, to

assess student motivation problems (N = 8 items). The third area, motivational interventions, explored how competent the participants rated themselves in developing, monitoring, and evaluating the effectiveness of both individual-level and classroom-level interventions (N = 4 items). And finally, the fourth area, communication and persuasion, examined the participants' judgments of their competence in communicating with teachers regarding student motivation issues. This subscale explored the extent to which they felt competent in persuading teachers to implement individual and classroom-level changes as well as how competent they feel in communicating an overall message to their teachers regarding establishing an adaptive motivational climate in their classrooms (N = 6 items). Each item was rated on a 5-point Likert-style format, with the following anchors: 1 = Not at all competent, 3 = Somewhat competent, and 5 = Very competent.

As expected, the full scale (including all items) had the strongest internal reliability (pretest α = .9477; posttest α = .9692). Alpha reliabilities for the subscales were as follows: conceptualization (pretest α = .7423; posttest α = .8580); assessment (pretest α = .8896; posttest α = .9237); intervention (pretest α = .9007; posttest α = .9136); and communication and persuasion (pretest α = .8635; posttest α = .9086).

All participants (including both treatment and control group) completed the *Perceptions of Competence* survey prior to and immediately upon completion of the series of professional development seminars. In addition, treatment group participants completed the survey a third time, approximately three to six weeks after conclusion of the workshops. This final administration served as the delayed posttest, assessing the continuing influence of the series of seminars. All treatment and control group

participants completed both the pre- and posttest, and 25 of the 26 treatment group participants completed the delayed posttest. Twelve of the 25 treatment group participants completed their delayed posttest survey prior to an in-depth interview designed to explore the effects of the workshops on the psychologists' practice. The interviews were conducted by a research associate, a fellow graduate student at Michigan State University, in order to minimize response bias and to encourage candid responses. (The data from these semi-structured interviews were not included in this study because they could not be completed within the dissertation timeframe.) For the remaining 13 control group participants, the delayed posttest survey was mailed to them along with a self-addressed stamped envelope.

Surveys for Analog Motivation Cases.

Participants were asked to read three different motivation profiles and respond to a set of surveys after each one. The individual student profiles and subsequent surveys were counterbalanced so as to eliminate any bias due to their order of presentation. The three profiles (see Appendix K) all describe a 5th grade, male student who has academic difficulties in school. Generally, he is not performing well on class assignments and assessments. The profiles were designed to capture the range of potential motivational cases that would typically present themselves to school psychologists. These cases essentially differ in the pervasiveness of the poor academic performance (with some experiencing global academic difficulties while others are performing poorly in just a few subjects) as well as the perceived ability of the student. Profile 1 describes a student who is performing poorly in one specific area. He is believed to be capable, but is not putting

forth much effort and is thus not performing up to expectations. Profile 2 depicts a student who is struggling generally in school. His performance in all coursework is substantially below that of his classmates. It is not known whether or not he is capable of doing his work as he rarely puts forth much effort in school. The third profile portrays a student who is believed to be capable overall, yet he puts forth minimal effort in his schoolwork except when he is interested in the material. The results from each of these measures were pooled across subjects, leading to total scores in each subscale.

For each profile the participants were asked to complete a 16-item survey, entitled *Assessment of Motivation* (see Appendix L). This measure was created by the author for the purposes of this study. Specific items were developed with goal theory perspective in mind, emphasizing the role that individual and contextual factors play with student motivation. In general, the measure required participants to rate how likely they were to use various assessment techniques to understand the motivational aspects of the cases. The techniques (the first 10 items) were equally divided between a focus on student characteristics (pretest $\alpha = .5850$; posttest $\alpha = .4884$) and classroom/contextual characteristics (pretest $\alpha = .7212$; posttest $\alpha = .7828$). In addition, participants were asked to rate how likely they were to gather information about each of the six TARGET dimensions pretest ($\alpha = .9255$; posttest $\alpha = .9335$). Each item was rated on a 5-point Likert-style format, with the following anchors: 1 = Not at all likely, 3 = Somewhat likely, and 5 = Very likely.

The *Motivation Strategies Survey*, developed by Ames and Rau (2001) (see Appendix M), was used to assess how likely the participants would be to recommend that teachers employ various strategies to motivate the hypothetical students described in the

profiles above. Based on factor analysis completed with a large sample of pre-service teachers in an introductory educational psychology course, it was determined that the 25 items in this survey cluster into three subscales. The first subscale had 10 items and included strategies focused upon effort, improvement, and choice (pretest α = .7908; posttest α = .7603). The second subscale is made up of 10 items emphasizing public recognition and competition as the primary means of motivating students (pretest α = .8441; posttest α = .9439). And finally, the third subscale includes 5 strategies focused upon the use of punishment as a motivational technique (pretest α = .6479; posttest α = .7865). Each item was rated on a 5-point Likert scale with the following anchors: 1 = Not at all likely, 3 = Somewhat likely, and 5 = Very likely.

Program evaluation.

In addition to the surveys and questionnaires designed by the researcher, all participants were asked to complete a questionnaire evaluating the effectiveness of the series of workshops. This form was designed by the district that awarded the State Board Continuing Education Units, and included survey questions and open-ended response items. Survey items included an overall evaluation of the program and the participants likelihood of being able to use the information presented to enhance their job effectiveness. In addition, specific questions addressed the clarity of the program objectives, the quality of the instructional skills, the relevancy and helpfulness of the materials, and the extent to which the program captured and held the participants' interests. Each survey item was rated on a 5-point Likert scale with the following anchors: 1 = Poor and 5 = Excellent. Open-ended questions asked for feedback on what

could be done to improve the workshops and solicited input on recommendations for future workshops. See Appendix N for a copy of this evaluation instrument.

RESULTS

The overarching research question that guided this study was how did participation in the professional development seminars affect school psychologists' beliefs and strategies for addressing motivation concerns? To answer this question, results were analyzed for group differences between treatment and control group participants. All survey data were analyzed using SPSS. Composite data were calculated for each participant on the competence scale and subscales, the assessment subscales, and the strategy subscales. For the latter two sets of subscales, results for each of the three hypothetical motivation cases were combined into composite scores.

Analysis of results indicated that there were no significant differences between treatment and control groups on any of the pre-test outcome measures (see Table 6). In addition, because participants were not randomly assigned to treatment and control group, pre-test results for both groups were combined and analyzed to determine if they differed significantly in relation to years of experience as a school psychologist, degree level, and gender. Regression analyses revealed that years of experience were not significantly predictive of any outcomes. Similarly, one-way analysis of variance (ANOVA) revealed no significant pre-test differences for degree level (see Table 7). Finally, independent sample t-test revealed that there were no significant pretest differences for gender (see Table 8). Given the non-significant results for each of these variables, all results were analyzed with 2 (time) by 2 (treatment group) repeated measures, analysis of variance (ANOVA). Table 9 shows the mean scores of the treatment and control group participants on pre- and post-test assessments of their knowledge, perceptions of competence, assessment practices, and intervention strategies.

Table 6

Analysis of Group Differences on Pre-test Measures by Group Assignment

	Condition		
Pre-test	Treatment	Control	T-test
Motivation Knowledge			
M	5.35	5.35	t = .004
SD	1.65	1.67	p< .997
Perceptions of Competence			
M	2.68	2.77	t = .461
SD	0.69	0.66	p< .647
Assessment – Student characteristics			
M	3.39	3.58	t = 1.289
SD	0.54	0.51	p< .204
Assessment – Contextual characteristics			
M	2.95	3.25	t = 1.525
SD	0.76	0.59	p< .134
Assessment – TARGET dimensions			
M	3.34	3.49	t = .630
SD	0.98	0.63	p< .532
Intervention Strategies – Competition and Public Recognition M	3.59	3.81	t = 1.632
SD	0.52	0.39	p< .109
Intervention Strategies – Effort, Improvement, and Choice M	1.81	1.97	t = 1.231
SD	0.49	0.47	p< .224
Intervention Strategies – Punishment			
M	2.25	2.51	t = 1.645
SD	0.56	0.57	p< .107

Table 7

Analysis of Group Differences on Pre-test Measures by Degree Level

Pretest	Degree Level			F-test
	Doctoral	Specialist	Masters	
Motivation Knowledge				F = 1.637
M	6.75	5.22	5.25	p < .206
SD	2.21	1.62	0.50	
Perceptions of Competence				F = .238
M	2.95	2.71	2.70	p < .789
SD	0.44	0.71	0.31	
Assessment – student characteristics				F = .330
M	3.28	3.50	3.55	P < .721
SD	0.52	0.54	0.47	
Assessment – contextual characteristics				F = .898
M	3.25	3.09	3.05	p < .898
SD	0.69	0.70	0.79	
Assessment – TARGET dimensions				F = .624
M	3.39	3.37	3.86	p < .540
SD	0.80	0.85	0.68	
Intervention Strategies – Competition and Public Recognition				F = .213
M	3.62	3.69	3.83	p < .809
SD	0.36	0.49	0.48	
Intervention Strategies – Effort, Improvement, and Choice				F = 2.505
M	1.60	1.96	1.51	p < .092
SD	0.38	0.49	0.11	
Intervention Strategies – Punishment				F = .642
M	2.07	2.40	2.43	p < .531
SD	0.96	0.54	0.54	

Table 8

Analysis of Group Differences on Pre-test Measures by Gender

Pre-test		Gender		T-test
		Female	Male	
Motivation Knowledge	M	5.56	4.47	t = 1.501
	SD	1.68	1.43	p< .140
Perceptions of Competence	M	2.68	2.86	t = .872
	SD	0.70	0.59	p< .387
Assessment – Student characteristics	M	3.50	3.45	t = .284
	SD	0.51	0.58	p< .778
Assessment – Contextual characteristics	M	3.12	3.03	t = .394
	SD	0.69	0.72	p< .695
Assessment – TARGET Dimensions	M	3.45	3.30	t = .611
	SD	0.86	0.77	p< .544
Intervention Strategies – Competition and Public Recognition	M	3.37	3.59	t = .990
	SD	0.46	0.52	p< .327
Intervention Strategies – Effort, Improvement, and Choice	M	1.87	1.95	t = .547
	SD	0.49	0.47	p< .587
Intervention Strategies – Punishment	M	2.38	2.37	t = .065
	SD	0.64	0.33	p< .948

Table 9

Means (and Standard Deviations) for Pre- and Posttest Assessment of Treatment Outcomes for Treatment and Control Groups

Variable	Treatment		Control	
	Pre-test	Post-test	Pre-test	Post-test
Motivation Knowledge	5.346 (0.325)	9.308 (0.327)	5.348 (0.346)	5.652 (0.348)
Perceptions of Competence (overall)	2.686 (0.132)	3.674 (0.111)	2.774 (0.137)	2.776 (0.116)
Perceptions of Competence – Conceptualization	3.038 (0.129)	4.051 (0.112)	3.097 (0.134)	3.028 (0.117)
Perceptions of Competence – Assessment	2.813 (0.149)	3.827 (0.115)	2.813 (0.155)	2.854 (0.119)
Perceptions of Competence – Intervention	2.760 (0.172)	3.615 (0.137)	3.052 (0.179)	2.885 (0.142)
Perceptions of Competence – Communication and Persuasion	2.292 (0.142)	3.321 (0.128)	2.375 (0.148)	2.472 (0.134)
Assessment – Student Characteristics	3.395 (0.103)	4.113 (0.083)	3.586 (0.107)	3.461 (0.086)
Assessment – Contextual Characteristics	2.954 (0.135)	3.992 (0.102)	3.250 (0.140)	3.131 (0.106)
Assessment – Observations	3.692 (0.131)	4.186 (0.110)	3.899 (0.136)	3.684 (0.115)
Assessment – Interviews	3.417 (0.155)	3.596 (0.142)	3.760 (0.161)	3.729 (0.148)
Assessment – Surveys	1.654 (.660)	3.690 (.985)	1.771 (.894)	1.938 (.884)
Assessment – TARGET dimensions	3.342 (0.164)	4.244 (0.124)	3.491 (0.170)	3.449 (0.129)
Interventions – Effort, Improvement, & Choice	3.594 (0.092)	4.137 (0.092)	3.811 (0.096)	3.961 (0.095)
Interventions – Competition & Public Recognition	1.812 (0.094)	1.282 (0.097)	1.979 (0.098)	2.168 (0.101)
Interventions – Punishment	2.254 (0.111)	2.049 (0.120)	2.517 (0.115)	2.628 (0.125)

Repeated measures analysis of variance (ANOVA) were conducted on each outcome measure separately as well as on the full model including all outcome measures. This statistical test allowed for an exploration of the main effects of the within subjects (time) and between subjects (group) variables, as well as the interaction between them. Overall, the research hypotheses called for significant interaction terms on each outcome variable. Essentially, significant interaction terms indicate that the treatment group made gains in the hypothesized direction between pre- and post-assessment while the control group remained virtually the same (or digressed).

Overall model

One control group participant did not complete either the pre- or posttest knowledge quiz. As a result the multivariate analysis of the overall model, including all outcome measures, is based upon data collected from the remaining 23 control group participants along with the full contingent of treatment group participants (N=26). As would be expected, the univariate analysis of the changes in participants' knowledge is based on the same participants. And finally, the univariate analyses of all other individual outcomes are based on the full complement of participants, including 24 control group participants and 26 treatment group participants.

The overall model explores the collective effects of the professional development seminars over time. The eight outcome variables included in this model were knowledge, perceptions of competence (composite score), the three assessment foci (student, context, and TARGET dimensions), and the three types of intervention recommendations

(effort/improvement/choice, competition/public recognition, and punishment). Results from the repeated measures analysis of variance (ANOVA) revealed a significant time by treatment interaction ($F(8, 40) = 13.783$, $p < .0001$). Furthermore, analysis of the overall model yielded a partial eta-squared of 0.734, indicating a large effect size according to Cohen's (1988) classification. Essentially, participation in the series of professional development seminars significantly enhanced the knowledge, beliefs and practices of the school psychologists who participated in the professional development seminars.

To explore the unique effects of the workshops on the treatment group participants, individual univariate analysis were conducted for each outcome variable listed above. These results are described below.

Knowledge of Motivation Concepts and their Application

Table 9 shows the total knowledge scores on the motivation quiz at pre- and posttest. An ANOVA was conducted on the total knowledge scores with repeated measures on time of testing. A significant time by treatment interaction ($F(1, 47) = 81.615$, $p < .0001$) revealed support for the knowledge hypothesis. Participation in the series of professional development workshops resulted in a significant increase in the treatment group participants' knowledge of motivation constructs and their application, with scores on the knowledge quiz nearly doubling from pre- to posttest (from 5.35 to 9.31). To the contrary, control group participants' knowledge did not change significantly over time (see Figure 1). In addition, the effect size (partial eta-squared = .502) fell within the medium range according to Cohen's (1988) recommended criteria, indicating that the increase in knowledge was not only statistically significant, but also

substantial. While certainly an important finding, such a result should be expected given that the treatment group participants had a unique learning opportunity to explore a brand new area of knowledge, while the control group participants simply continued with their regular professional activities.

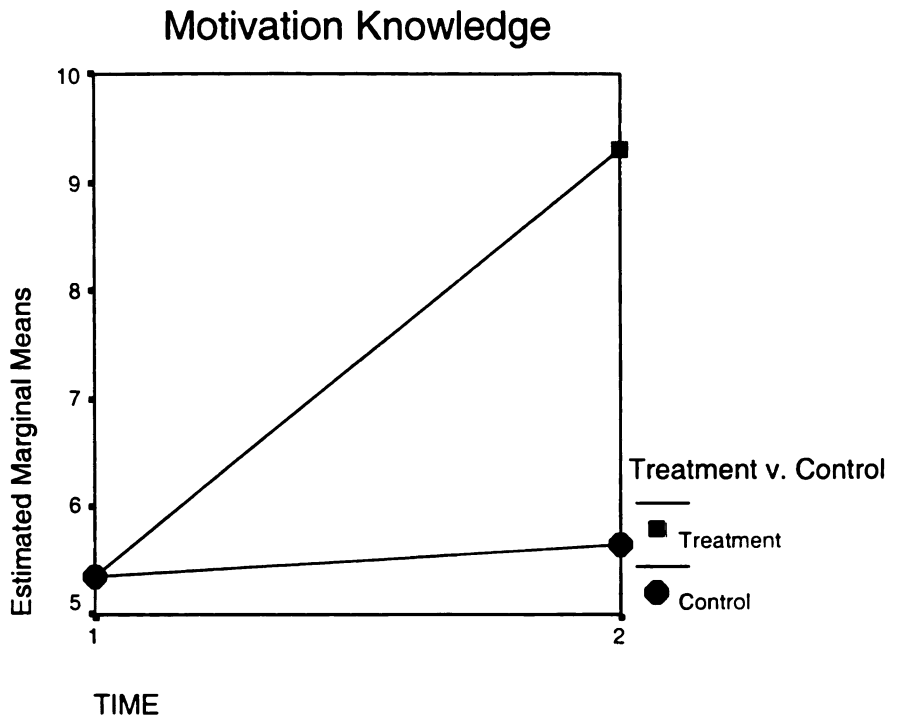


Figure 1. Graph of treatment and control group means for motivational knowledge at pre- and posttest

Perceptions of Competence

Table 9 shows the means and standard deviations for the treatment and control participants' perceptions of competence, including overall as well as subscales, at the time of pre- and posttest. ANOVAs were conducted on the overall and subscale scores with repeated measures on time of testing. A significant time by treatment interaction was found for each, thus confirming the perceptions of competence hypothesis.

Analysis of the overall perceptions of competence scores yielded a significant time by treatment interaction ($F(1, 48) = 30.421$, $p < .0001$). Essentially participation in the professional development workshops resulted in a significant increase in the treatment group participants' perceptions of their competence to understand and respond to student motivation concerns. In contrast, control group participants' perceptions remained virtually the same (or even decreased slightly). Group averages for both treatment and control group participants fell slightly below the *somewhat competent* descriptor (3.0), with both groups averaging approximately 2.7 on the 5.0 scale. Upon completing the series of workshops, treatment group participants rated themselves, on average, nearly a point higher than their pretest scores, while control group participants remained virtually the same.

Similar effects were found for each of the perceptions of competence subscales. Significant time by treatment interactions were found for each subscale, including conceptualization ($F(1, 48) = 27.586$, $p < .0001$), assessment ($F, 1, 48) = 23.345$, $p < .0001$), intervention strategies ($F(1, 48) = 19.972$, $p < .0001$), and communication and persuasion ($F(1, 48) = 24.425$, $p < .0001$), with small to medium effects sizes of 0.365, 0.327, 0.294, and 0.337, respectively. (See Figures 2-6 for graphs of treatment and control group means at pre- and posttest). Each subscale is explored in detail below.

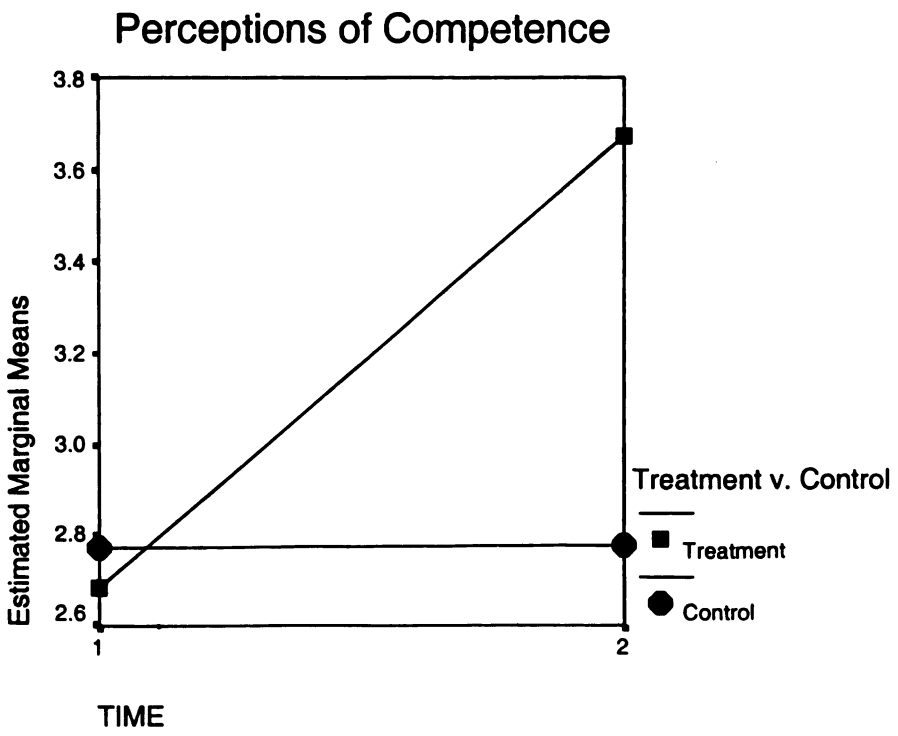


Figure 2. Graph of treatment and control group means for perception of competence in understanding and responding to motivation issues (overall) at pre- and posttest

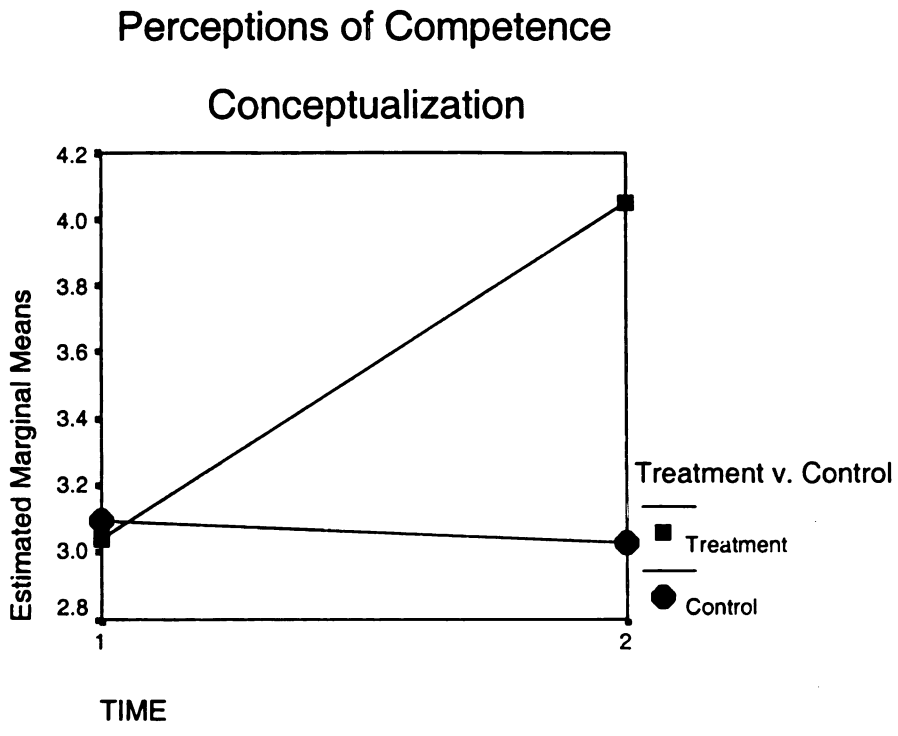


Figure 3. Graph of treatment and control group means for perception of competence in conceptualizing motivation issues at pre- and posttest

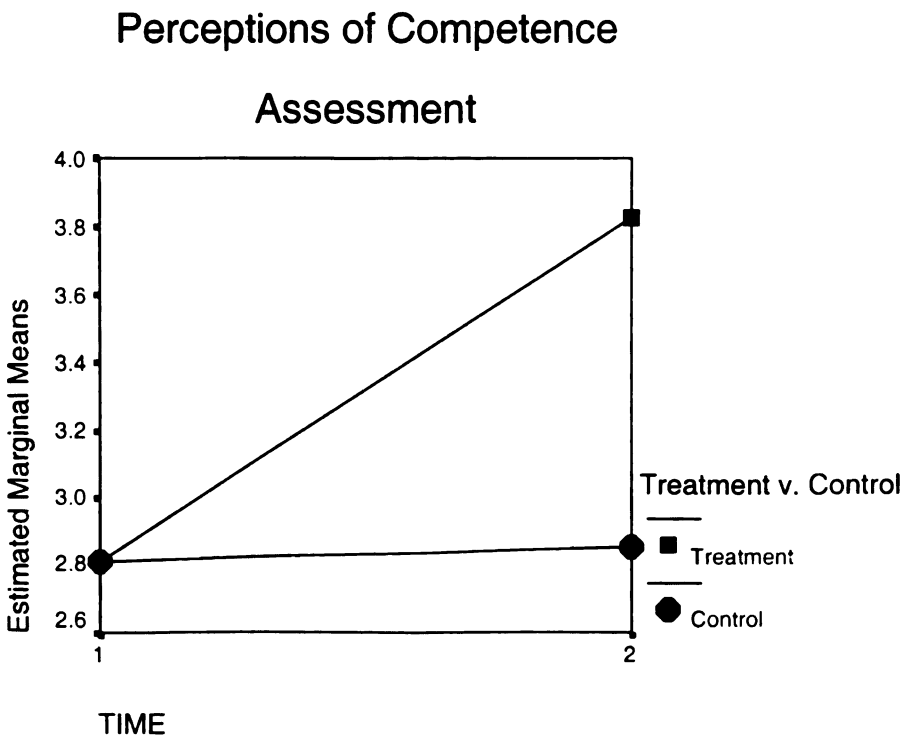


Figure 4. Graph of treatment and control group means for perception of competence in assessing motivation issues at pre- and posttest

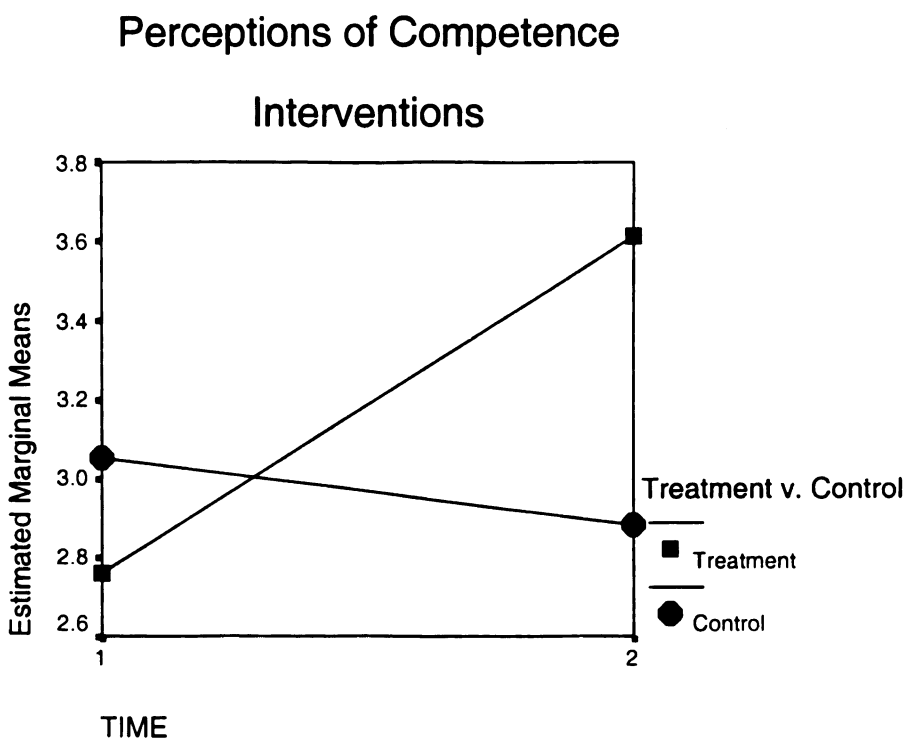


Figure 5. Graph of treatment and control group means on perception of competence in developing and evaluating the effects of intervention for student motivation issues at pre- and posttest.

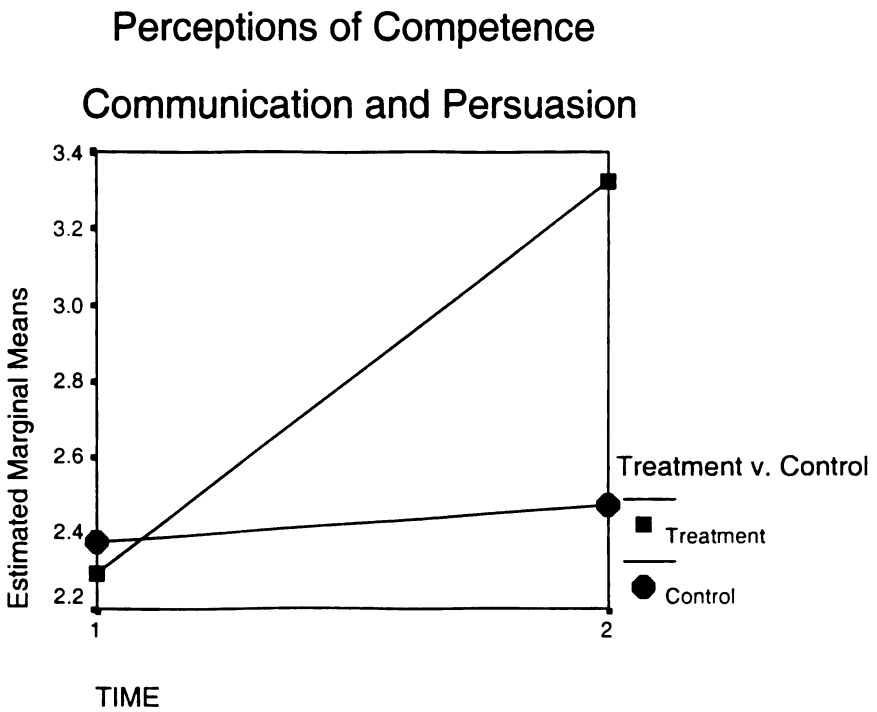


Figure 6. Graph of treatment and control group means for perception of competence in explaining motivational data and persuading teachers' to implement interventions at pre- and posttest

Of the four perceptions of competence subscales measured in their surveys, participants started out, in fact, believing themselves to be most competent in their ability to simply understand the nature of student motivation problems. This subscale received the highest ratings across treatment and control groups at the pretest stage. In general, both treatment and control group participants rated themselves as *somewhat competent* (~3.0-3.1) prior to the start of the treatment groups' workshops. While control group participants' ratings remained virtually the same at posttest, scores for treatment group participants were substantially higher upon completing the series of seminars. In fact, their ratings jumped a full point from pre- to posttest, indicating that these participants

believed themselves to be significantly more competent in ability to understand the nature of students' motivational beliefs and their effect on learning and behavior.

Similarly, treatment and control group participants rated themselves below the *somewhat competent* threshold with regards their beliefs about their competence in assessing motivation concerns (~2.8 for both groups). While the self-ratings of the control group participants changed an insignificant amount from pre- to posttest, treatment group participants again rated themselves more than a full point higher (~3.8) upon completion of the seminars. In general, participation in the series of professional development workshops resulted in a significant enhancement of the treatment group participants' beliefs about their ability to assess the motivational beliefs of students and the motivational climate of classrooms, and more specifically, to use observation, interview, and surveys to do so.

A slightly different pattern was revealed in the analysis of changes in participants' perceptions of competence in developing and evaluating the effectiveness of motivational interventions. Pretest ratings indicated that there was no significant difference between treatment and control group participants' self-evaluations (~3.0 and ~2.8, respectively). Control group participants' ratings remained virtually the same at the posttest stage, while treatment group participants rated themselves as significantly more competent (nearly a full point improvement over their pretest scores) in developing and evaluating the effectiveness of individual- and classroom-level intervention strategies to address student motivation concerns upon completion of the series of professional development workshops.

And finally, in comparison with the other perceptions of competence subscales, both treatment and control group participants were most critical of their abilities to persuade teachers to implement changes in their classroom that could impact student motivation. Both groups initially rated themselves fairly low in this area (~2.3 and ~2.4, respectively). While the self-ratings of the control group participants remained essentially unchanged at posttest, the treatment group participants' averages improved more than a full point (to 3.3). While these statistically significant results represent a substantial improvement over the pretest ratings, it is important to note that treatment group participants still rate themselves as merely *somewhat competent* in this area even after completing the series of professional development seminars.

Follow-up Measures: Delayed Post Test Results

The above results represent the participants' ratings immediately following the culmination the professional development seminars. While the significant improvements suggest that the professional development seminars were effective in enhancing the participants' beliefs about their abilities to understand and respond to motivation concerns, it is important to consider whether these ratings were sustained over time. In general, treatment group participants maintained their overall sense of confidence in their ability to address motivation issues. Table 10 shows the means and standard deviations for the treatment group participants' overall perceptions of competence at the time of pre-, post- and delayed posttest. (One treatment group participant did not return the delayed post-test measure and therefore the following analysis was based on 25 of the 26 treatment group participants.) A repeated measures ANOVA revealed a significant main

effect for time ($F(2, 23) = 32.988$, $p < .0001$), with a medium effect size (partial eta-squared = .579). Treatment group participants showed a substantial increase in their perceptions of competence from pre- to posttest ($F(1, 24) = 38.673$, $p < .0001$), and maintained that elevated sense of confidence in their skills through delayed post-test, as indicated by the lack of significant differences between post- and delayed posttest ($F(1, 24) = 1.045$, $p < .317$). See Figure 7 for graphs representing the change over the three data collection points.

Table 10

Means (and standard deviations) for Pre-, Post-, and Delayed Post-Test Perceptions of Competence for Treatment Group Only

Variable	Pre-test	Post-test	Delayed Post-test
Perceptions of Competence	2.706 (.692)	3.688 (.475)	3.619 (.416)

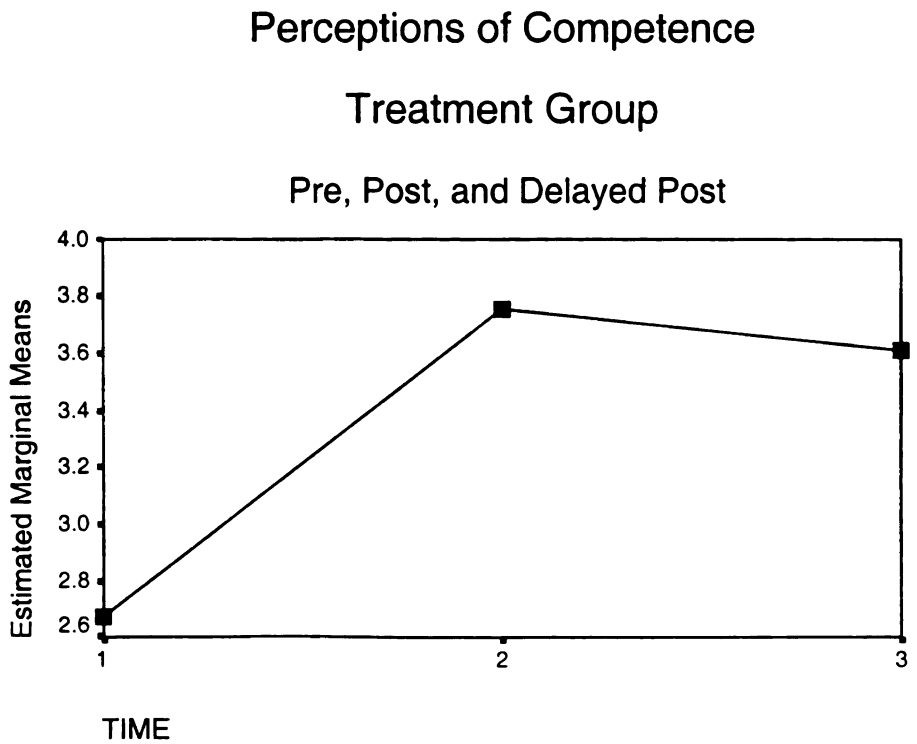


Figure 7. Graph of pre-, post-, and delayed-post means for treatment group participants' perception of competence (overall)

Assessment Practices

Table 9 shows the means and standard deviations for the treatment and control group participants' assessment practices. Three subscales were explored in the initial analyses. These included, 1) a collection of assessment practices and techniques designed to understand student beliefs and behaviors related to motivation, 2) a collection of assessment practices and techniques designed to understand the contextual factors influencing student motivation, and 3) classroom dimensions in line with the TARGET model. Separate 2 (Group) X 2 (Time) ANOVAs were conducted on the overall and subscale scores with repeated measures on time of testing (pre- and post-). A significant time by treatment interaction was found for each, thus confirming the assessment hypotheses.

Research hypotheses were confirmed for each of the areas of motivation assessment. Analysis of the data addressing assessment of student characteristics, including motivational beliefs and behaviors, yielded a significant time by treatment interaction ($F(1, 48) = 29.082$, $p < .0001$) with a small to medium effect size (partial eta-squared = .377). While treatment group participants showed a significant increase in their likelihood of utilizing a variety of assessment techniques to explore students' motivational beliefs and behaviors, control group participants' ratings remain unchanged from pre- to posttest. See Figure 8 for a graph of this change over time and across participant groups.

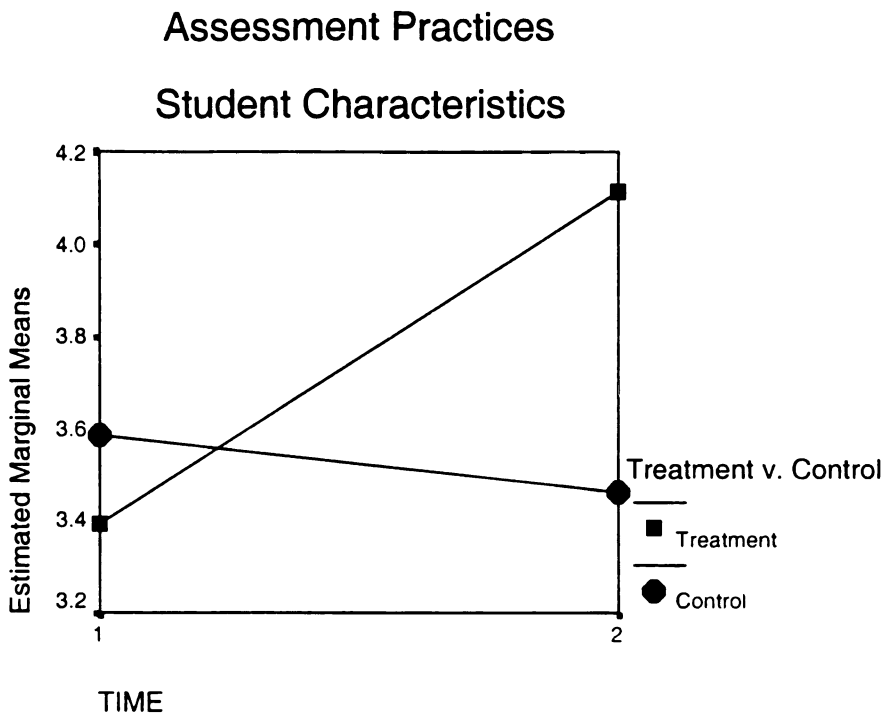


Figure 8. Graph of treatment and control group means for assessment of student characteristics at pre- and posttest

Similarly, there was a significant time by group interaction for contextual characteristics ($F(1, 48) = 38.954$, $p < .0001$), indicating that participation in the series of

professional development workshops had a significant effect on the likelihood of exploring contextual factors and their influence on student motivation (medium effect size – partial eta squared = .446). While control group participants' ratings stayed the same, treatment group participants showed a substantial increase in their likelihood of exploring the contextual factors influencing the motivation issues represented in the hypothetical student cases. (See Figure 9 for a graph of treatment and control group means for contextual assessment at pre- and posttest.)

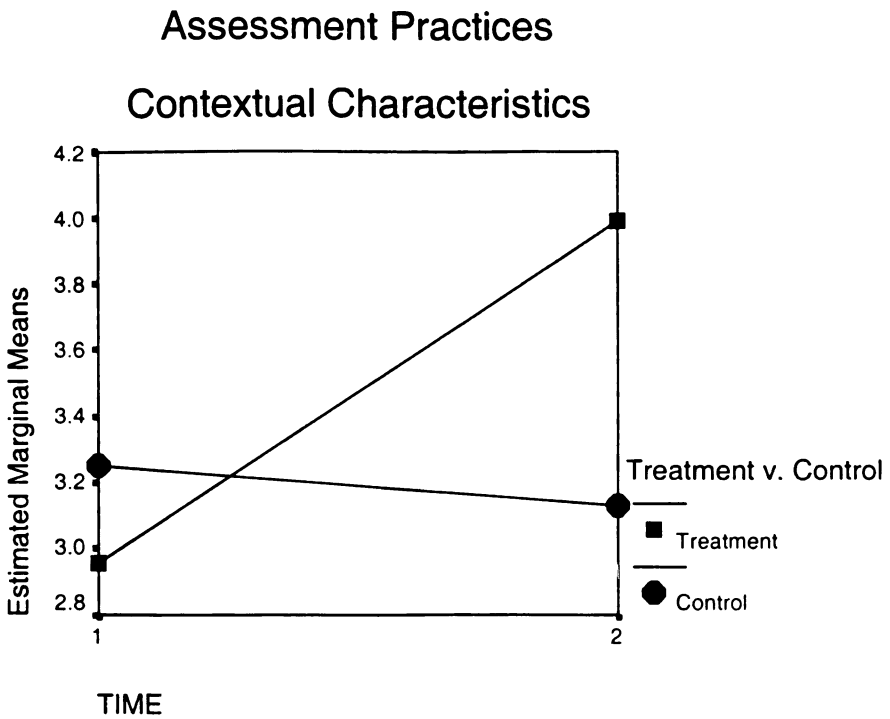


Figure 9. Graph of treatment and control group means for assessment of contextual characteristics at pre- and posttest

In relation to this contextual focus, a small effect size (partial eta-squared = .295) was found for changes in the participants focus on the TARGET dimensions. Essentially, treatment group participants showed a significant increase in their likelihood of attending to the TARGET dimensions when trying to understand the role that the classroom context

plays in shaping students' motivational beliefs and behaviors (time by group interaction, $F(1, 48) = 20.092$, $p < .0001$), while control group participants ratings remained nearly the same. (See Figure 10 for a graph of these changes.)

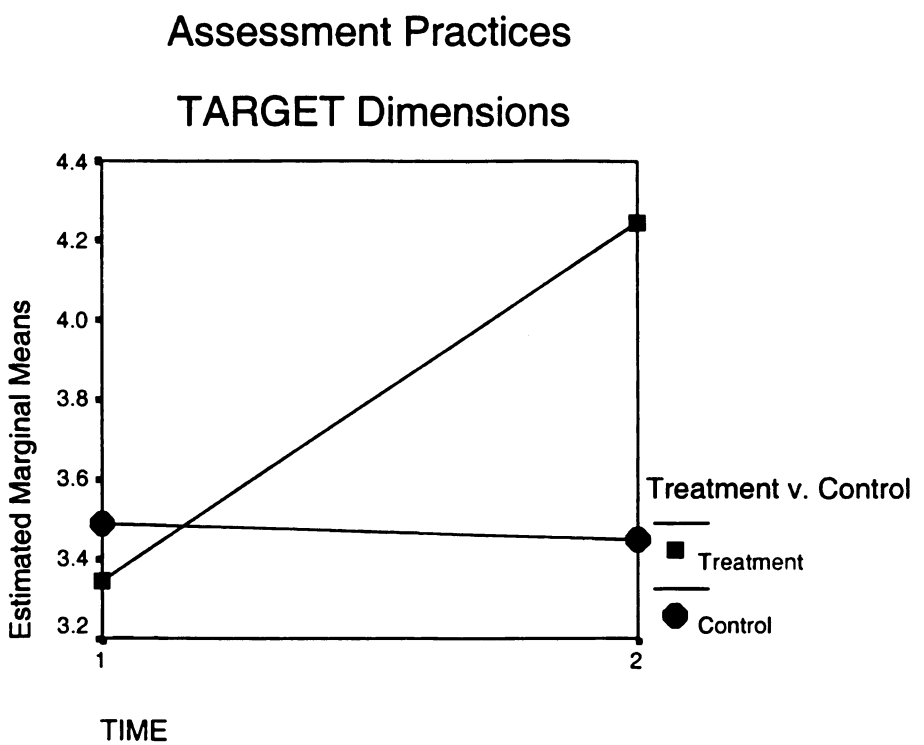


Figure 10. Graph of treatment and control group means for assessment of TARGET dimensions at pre- and posttest

Subsequent analyses were conducted in order to determine if there were substantial and specific changes in particular types of assessment practices that were endorsed by the participants, regardless of their focus on student characteristics or contextual characteristics. In general, one goal of the intervention was to enhance both the quality and quantity of assessment techniques. As noted previously, an earlier study by this author revealed that school psychologists did not believe that they had sufficient "formal" assessment techniques. Pretest results indicated that observations and

interviews were used most frequently, while surveys were utilized only minimally. The items utilized in the student and contextual assessment subscales (the first 10 items of the *Assessment of Motivation* survey) were re-sorted by type of strategy (observations, interviews, and surveys) rather than focus of assessment (student vs. context). Alpha reliabilities for pre- and posttest data for each of these assessment techniques were as follows: observation (pretest $\alpha = .7269$, posttest $\alpha = .6935$), interview (pretest $\alpha = .7987$, posttest $\alpha = .7884$), and survey (pretest $\alpha = .8116$, posttest $\alpha = .9353$). Each of these subscales are based on relatively small numbers of items (N = 4, 4, and 2, respectively), so results should be interpreted with caution.

Table 9 shows the means and standard deviations for the treatment and control participants' endorsement of specific assessment techniques in response to the hypothetical motivation cases. An ANOVA was conducted on the assessment technique subscales with repeated measures on time of testing. Each analysis yielded significant time by treatment interactions: observation ($F(1, 48) = 21.655$, $p < .0001$), interview ($F, 1, 48) = 17.653$, $p < .0001$), and survey measures ($F(1, 48) = 36.207$, $p < .0001$), with small to medium effects sizes of 0.311, 0.269, and 0.430, respectively. (See Figures 11-13).

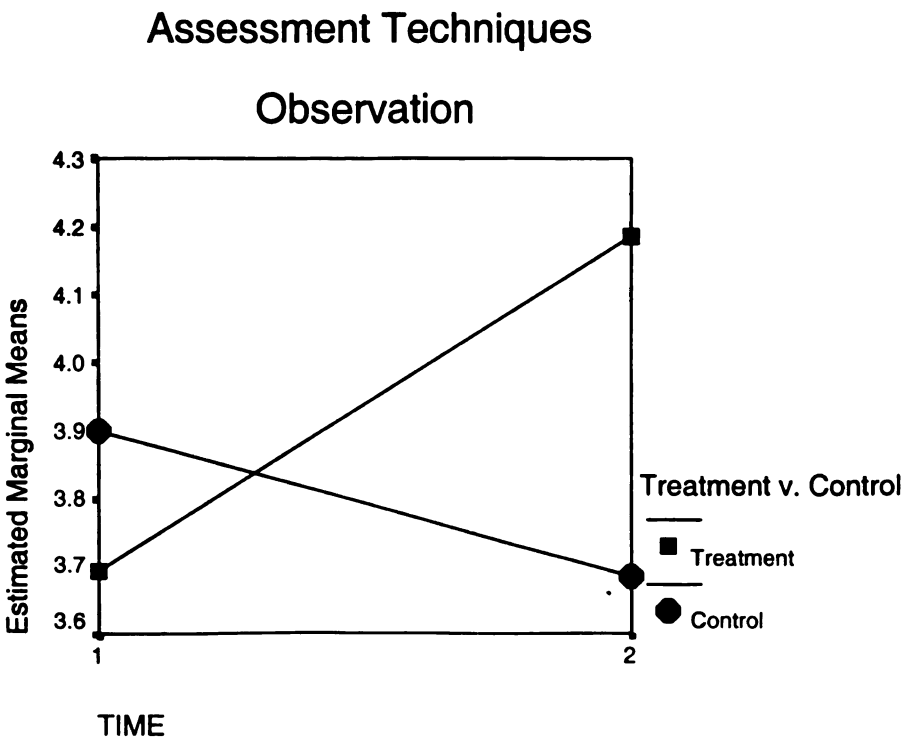


Figure 11. Graph of treatment and control group means for likelihood of conducting observations to assess student motivation at pre- and posttest

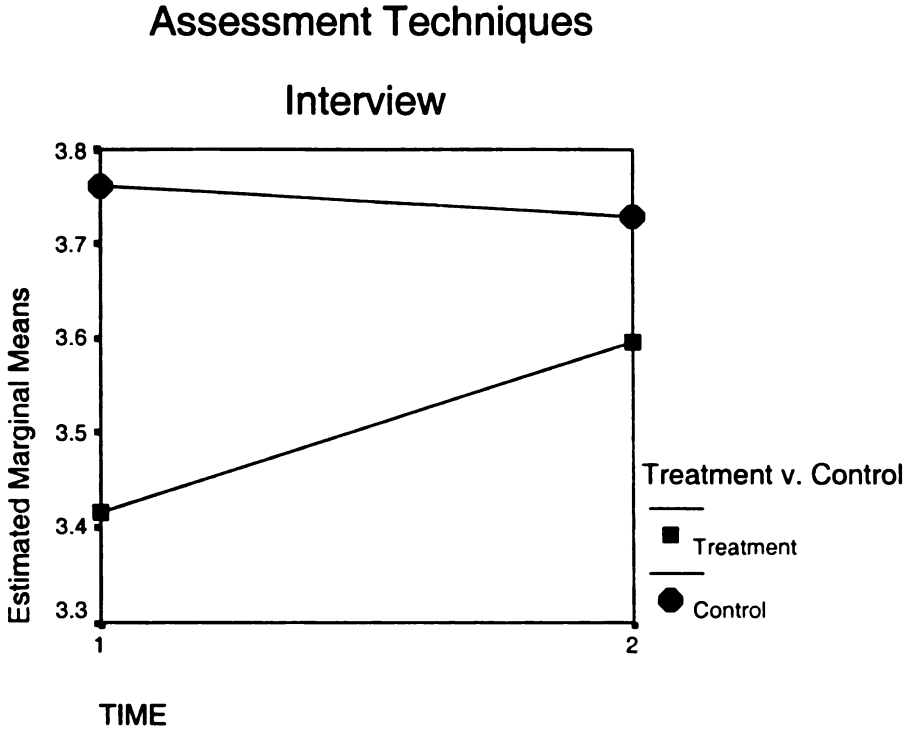


Figure 12. Graph of treatment and control group means for likelihood of conducting interviews to assess student motivation at pre- and posttest

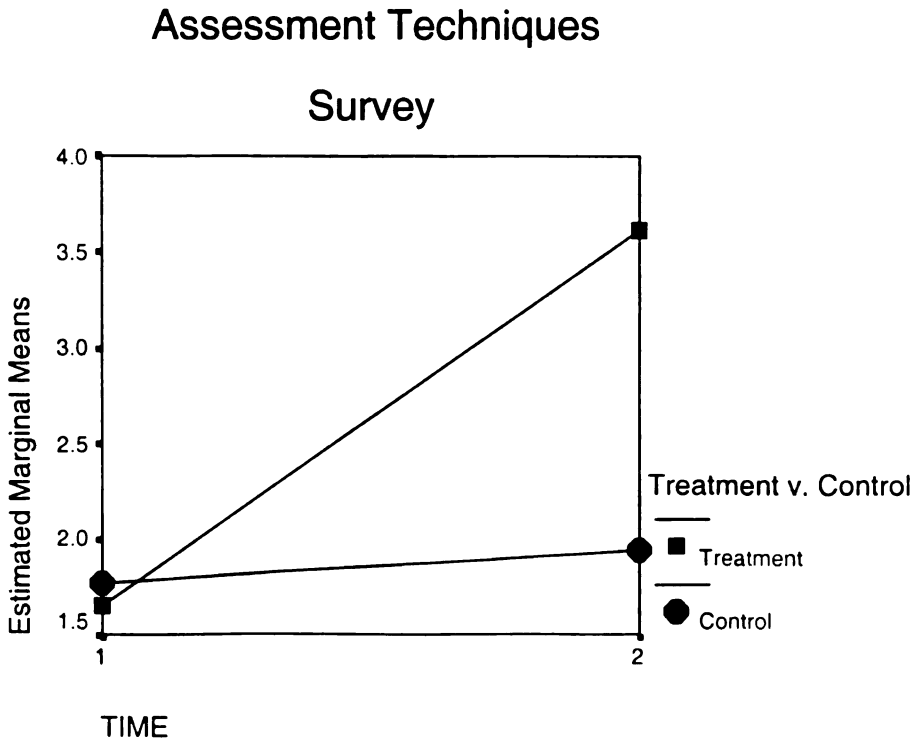


Figure 13. Graph of treatment and control group means for likelihood of administering surveys to assess student motivation at pre- and posttest

Intervention Strategies

Table 9 shows the means and standard deviations for the treatment and control participants' intervention recommendations. As noted earlier, three broad categories of motivation interventions were explored in these analyses. These included 1) an emphasis on effort, improvement, and choice, 2) the use of competition and public recognition, and 3) a reliance on punishment to enhance students' motivation to learn. Separate 2 (Group) by 2 (Time) ANOVAs were conducted on each subscale with repeated measures on time of testing (pre- and post-). Research hypotheses were confirmed for two of the three types of intervention strategies.

Analyses revealed a significant time by group interaction for strategies emphasizing effort, improvement, and choice ($F(1, 48) = 9.776$, $p < .003$), indicating that

participation in the series of professional development workshops had a significant effect on the likelihood of recommending such strategies in response to the hypothetical student motivation cases. While control group participants' ratings of the effort/improvement/ choice strategies remained virtually the same from pre- to posttest, treatment group participants' ratings revealed a significant increase (see Figure 14), suggesting that this group of psychologists are highly likely to utilize such strategies when faced with similar motivation concerns. It is important to note that, though these results were statistically significant, they yielded a relatively small effect size (partial eta squared = .169). This may, in part, be due to the fact that these strategies were already rated fairly high prior to the intervention (~3.6 and ~3.8 for the treatment and control groups, respectively), and therefore did not have as much room for improvement.

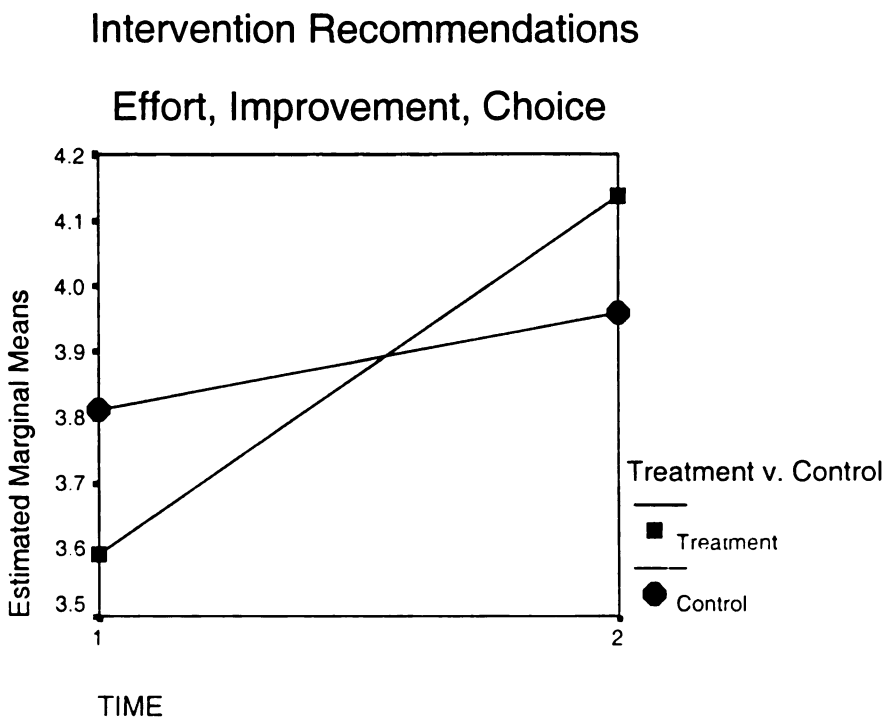


Figure 14. Graph of treatment and control group means for likelihood of recommending intervention strategies emphasizing effort, improvement, and choice at pre- and posttest

As expected, treatment group participants were less likely to endorse strategies associated with encouraging a performance orientation in their classroom. There was a significant time by group interaction for the strategies focused on competition and public recognition ($F(1, 48) = 28.766$, $p < .0001$), with control group participants reporting virtually no change while treatment group participants reporting a sharp decline. The effect size for this interaction (partial eta-squared = .375) fell within the small to medium range. (See Figure 15)

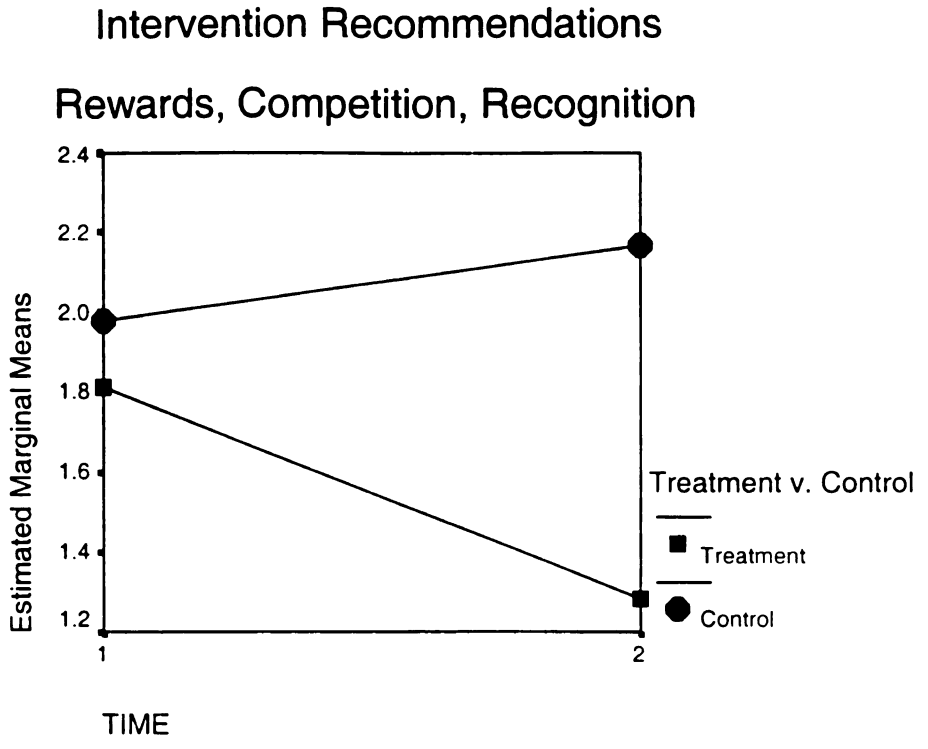


Figure 15. Graph of treatment and control group means for likelihood of recommending intervention strategies emphasizing rewards, competition, and recognition at pre- and posttest

Finally, the research hypothesis was not confirmed for the punishment subscale of the intervention recommendations. Overall, there was a significant main effect for group ($F(1,1) = 8.865$, $p < .005$), yet not for time ($F(1, 48) = 0.282$, $p < .598$). Examination of the pre- and posttest means for each group revealed that, while the treatment group's

mean ratings were substantially lower than the control group's at posttest, there was a substantial, though not statistically significant, difference at the outset as well. Therefore, while the posttest ratings indicated that treatment group participants were slightly less likely to recommend punishment strategies in response to motivation concerns (dropping from ~2.3 to ~2.1) and the control group participants slightly more likely (increasing from ~2.5 to ~2.6), the differences at posttest cannot necessarily be attributed to participation in the series of professional development seminars. (See Figure 16) It is important to note that the time by group interaction approaches significance ($F(1,48) = 3.195$, $p < 0.08$), however does not quite reach the strict standard of .05 level significance.

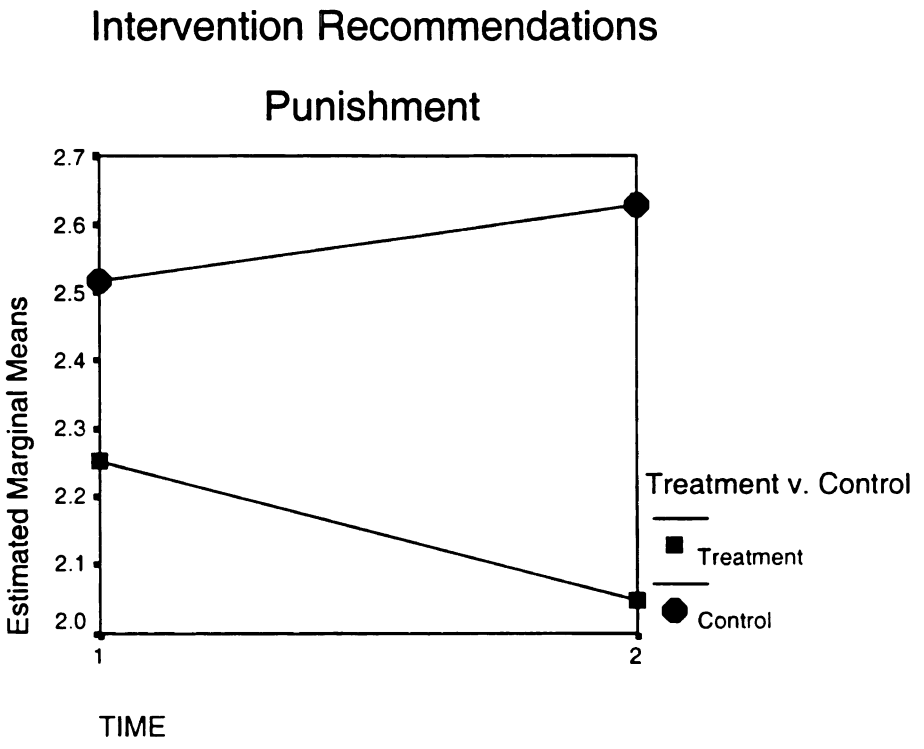


Figure 16. Graph of treatment and control group means for likelihood of recommending intervention strategies emphasizing punishment at pre- and posttest

Program evaluation

While all previous results include data from all study participants, only those participants who completed the series of workshops were eligible to complete the program evaluation survey (N=43). This includes both the treatment and control group participants from the first two districts and only the treatment group participants for the remaining two districts. The professional development workshops for the latter two districts were scheduled too late in the school year to allow time for two complete series of workshops to be conducted. Therefore, the treatment group seminars were completed for school districts #3 and #4, however, as noted previously, the control group sessions for these districts are in the process of being completed this fall (2003). Forty-one of the 43 participants who took part in the workshops actually completed the program evaluation form.

Overall, the workshops were rated highly by the participants. Using a scale ranging from 1 = poor to 5 = excellent, the average overall program rating was 4.78, with a standard deviation of 0.423. Participants indicated that the objectives of the program were clearly evident (mean = 4.83, SD = 0.447) and the materials were relevant and helpful (mean = 4.73, SD = 0.554). The researcher's instructional skills were rated as excellent (mean = 4.93, SD = 0.267) and the program held their interest (4.50, SD = 0.555). Finally, the participants indicated that they would be able to use the information and skills acquired through the program to improve their job effectiveness (mean = 4.45, SD = 0.645).

In response to the open-ended question regarding what could be done to improve the training experience, twenty participants provided additional feedback beyond the

quantitative ratings. Of these responses six participants indicated that no changes were needed and/or that the workshops were excellent. Two participants provided pragmatic suggestions, including providing all the handouts at once, rather than session by session. Another participant recommended that the information should be shared with other school professionals, including teachers and principals.

Two participants suggested that more practice was needed with case studies (N=1) and the PALS surveys and TARGET framework (N=1). Similarly two responses indicated a need for more specific examples and strategies to apply the concepts, with one participant recommending that videos be used to illustrate performance and mastery oriented classrooms. Another recommended that more practical input was needed with regards to what to expect when attempting to consult on motivation issues. One participant called for "more relevant data with respect to norms." Presumably this individual was looking for normative information on secondary level students, as the PALS manual only provides data from elementary level students.

Five participants suggested that the timeframe could be improved. Two of these responses indicated that the sessions should be scheduled earlier in the school year when schedules were less stressed and more permissive of trying out new ideas and skills. Another suggested that the session length could be shortened with more sessions scheduled. Two participants suggested that more time could be scheduled between the second and third sessions in order for participants to have more time "to try out the skills learned." Finally, one participant indicated that a follow-up session should be scheduled in six months that provides an opportunity to "share ideas of how to incorporate in daily psych world." Similarly, in response to the question requesting input for future sessions,

three participants indicated that second set of workshops on student motivation should be scheduled, including more information on "how to consult effectively now that we know theory."

DISCUSSION

The primary purpose of this study was to explore the effects of a series of professional development workshops on the knowledge, beliefs, and practices of school psychologists with regards to student motivation issues. Overall results suggested that the series of seminars was effective in enhancing the knowledge and beliefs of the participating school psychologists, however it is important to consider additional findings as well as any research limitations revealed by the study.

The starting point...

The need for these professional development workshops was, at least in part, predicated on the assumption that school psychologists did not already have a great deal of knowledge about achievement motivation, did not already believe that they were sufficiently competent to respond to concerns in this area, and were not already utilizing research-based assessment tools and interventions strategies. The fact that they chose to spend valuable professional time in participating in the workshops affirms this assumption in part. Pretest data from all participants (across treatment and control groups) provided persuasive confirmation of these assumptions.

Results from the pretest knowledge quiz suggested that participants had minimal knowledge of motivational concepts prior to their involvement in the professional development workshops. Focused primarily on achievement goal theory and its application in the classroom, participants (treatment and control group alike) correctly answered, on average, slightly more than a third of the pretest questions (mean = 5.35).

While somewhat better than chance, pretest results indicated that the workshop participants did not exhibit sufficiently complex understandings of student motivation, in general, and achievement goal theory, in particular. Such results suggest that, at least for the psychologists who chose to participate in the workshops, exposure to this material through training programs and/or other ongoing professional development opportunities has been minimal.

Similarly, prior to participating in the series of motivation workshops, participants did not rate themselves as very competent in their ability to understand and respond to motivation issues. Looking across treatment and control group responses and combining survey items exploring participants' perceptions of competence in conceptualizing, assessing, developing interventions, and persuading teachers to follow through on such interventions, participants rated themselves overall as *somewhat competent* (mean = ~2.7) in addressing motivation issues. Subscale scores indicated that they felt *most competent* in their abilities to understand the nature of motivation problems (mean = ~3.0), followed by the assessment of motivation (mean = ~2.8) and the development and monitoring of motivational intervention strategies (mean = ~2.9). Perhaps most importantly, they perceived themselves to be *least competent* in their abilities to communicate to teachers their understanding of student motivation issues and to persuade such teachers to implement strategies that will likely impact the students' motivation (mean = ~2.3). Overall, pretest results indicated that the research participants believed themselves to be *somewhat competent* at conceptualizing student motivation issues, assessing the nature of such concerns and developing individual and classroom level interventions to address the issues. In contrast, their responses indicated that they were skeptical about their ability to

communicate to teachers their findings regarding student motivation concerns and more importantly, their ability to persuade teachers to implement strategies aimed at both individual-level and classroom-level changes.

With regards to their endorsement of particular assessment and intervention practices, pretest responses indicated that participants were *somewhat likely* to examine student factors (e.g., behaviors, beliefs, etc.) prior to their participation in the workshops (mean = ~3.5). Similarly, they were *somewhat likely* to explore the role that contextual factors play in influencing student motivation (mean = ~3.1), including the specific TARGET dimensions (mean = ~3.4) that were introduced in the second workshop. With regards to the specific assessment techniques, pretest results indicated that participants relied primarily on interview and observation strategies prior to their involvement in the workshops (mean = ~3.6 and ~3.7, respectively), while few (mean = ~1.7) utilized formal survey measures to understand the nature of student motivation problems.

Finally, pretest ratings indicated that participants were most likely to recommend to teachers the use of strategies that emphasized effort, improvement, and student choice (mean = ~3.7). They were much less likely to recommend punishment strategies (mean = ~ 2.4) and strategies emphasizing competition and public recognition (mean = ~1.9). These trends are in line with the theoretical perspectives explored in the professional development workshops, in that the first set of strategies encourage a focus on learning while the latter two sets of strategies center more on developing student compliance with adult expectations. Therefore, while on the right track, participation in the workshops offered an opportunity to explore in great detail the benefits and costs *for students* when teachers employ each type of strategy.

In summary, overall pretest results indicate that, prior to their involvement in the professional development seminars, participants had little formal knowledge of achievement goal theory and its application and rated themselves as *somewhat competent* to address such concerns in their daily practice. They relied primarily on informal interview and observation to assess motivation issues, paying attention to some degree to both student and contextual characteristics and factors. And finally, they were more likely to endorse the use of intervention strategies emphasizing effort, improvement, and choice, rather than strategies focused on competition and public recognition or punishment, though the latter strategies were still rated as slightly below *somewhat likely* to be used. Essentially, pretest results indicated that participants were "on the right track" in certain aspects of understanding and responding to motivation issues, yet still had a great deal to learn from the professional development workshops.

Impact of the professional development workshops

The majority of the hypothesized effects of the professional development workshops were supported, suggesting that participants' knowledge, beliefs, and practices were enhanced significantly by their participation in the seminars. Specific results are explored in detail below.

Changes in participants' knowledge.

Treatment group participants showed a sharp increase in their knowledge of motivation concepts covered in the seminars. In fact, the number of items correct on the posttest nearly doubled from the pretest scores. Given that the quiz focused primarily on

application of achievement goal theory concepts, treatment group participants displayed substantially more complex understandings of the beliefs and behaviors associated with various motivational orientations and the ways in which classrooms can be structured to influence such motivational beliefs. Treatment group participants were much better able to define achievement goals and the behaviors and beliefs associated with mastery, performance-approach, and performance-avoidance goals. Further, they improved significantly in their distinctions between adaptive and maladaptive classroom practices and their influence on students' achievement goals. In particular, they were much better able to predict how certain classroom practices may lead to particular goal orientations in students.

While the improvement in quiz performance from pre- to posttest was substantial, it is important to note that treatment group participants still missed, on average, nearly one third of the items. Furthermore, performance on the quiz varied considerably across participants, with posttest scores of treatment group participants ranging from 6 to 12 (out of a possible 13). While some participants demonstrated a thorough and complex understanding of the content upon completion of the series of workshops, others were still struggling to apply the ideas introduced in the seminars. Though the overall knowledge of the group improved significantly over the course of their participation, participants still showed some gaps in their ability to connect the concepts introduced in the seminars to hypothetical application scenarios presented in the quiz.

To some extent this variability is predictable as all participants cannot be expected to move from minimal understanding to "complete" understanding, no matter how effective the seminars were. Participants certainly varied in the extent to which they truly

engaged in the seminars and attempted to apply the ideas outside of the sessions, both of which would be expected to have an influence on their quiz performance. Other factors may also influence the degree to which participants were able to internalize and apply the content taught in the workshops.

While reasons for this "gap" were not studied explicitly as part of this research project, program evaluation responses interpreted from a constructivist learning theory perspective offer a possible explanation. Treatment group participants attended several hours of professional development training. They were systematically introduced to motivation theory and its application. The assessment measures and intervention strategies provided in the workshops not only served as tools that could be used in their practice upon completion of the seminars, but also functioned as learning tools, helping them to develop a deeper understanding of the concepts in practice. The content was stretched over three sessions, and participants were allowed multiple opportunities to ask questions to clarify their understanding of the new theoretical perspectives and their application.

Nevertheless, many participants acknowledged that they had minimal opportunity to actually apply the concepts learned in the workshops to the context of their daily, professional lives. While it was recommended that participants try out the assessment tools and intervention strategies between the second and third sessions, several could not take the time to do so, given other "required" job responsibilities that took precedence. For many "learners," simple exposure to new information is not sufficient for developing complex understandings. Instead they must take the time to develop their own personal

understanding, to do their own personal meaning making, based on opportunities to try out ideas in their own professional lives.

Perceptions of competence – enhanced beliefs about professional skills.

In addition to showing significant improvement in their knowledge of achievement goal theory and its application, treatment group participants also judged themselves to be far more competent in their ability to understand and respond to student motivation concerns upon completion of the seminars. Treatment group participants' ratings increased nearly a full point from pre- to posttest, while control group scores remained virtually constant. A similar trend was revealed for each of the four subscales, with treatment group participants rating themselves as substantially more competent in understanding the nature of student motivation issues (conceptualization), assessing individual and contextual factors contributing to such concerns (assessment), developing and monitoring individual and classroom level interventions (interventions), and persuading even the most resistant teachers to follow through on such data and recommendations (communication and persuasion).

In addition to exploring the net changes from pre- to posttest, it is also useful to consider the actual ratings. In general, posttest results for treatment group participants indicate that the school psychologists believe themselves to be most competent in the first three subscale areas (4.05, 3.83, and 3.62, respectively). Overall participants appeared to be much more confident in their ability to understand motivation problems. Upon completion of the workshops, they believed themselves to be much more capable of effectively assessing the personal and contextual factors influencing student motivation

issues. Further, they were substantially more confident in their ability to develop effective individual and classroom-level interventions designed to encourage a more adaptive orientation to schooling.

To the contrary participants rated themselves as only *somewhat competent* (3.32) in the communication and persuasion subdomain, even after completing over ten hours of professional development in this area. This trend of scores might be expected as each successive subscale requires more sophisticated understanding and involvement on the part of the school psychologists. In addition, this subdomain more so than the others relies heavily on colleagues being open to hearing the ideas presented by the psychologist. In particular, many questions asked participants to rate their persuasiveness with even the most "resistant/difficult" teacher. Rating themselves high on these types of questions requires not only that the psychologists believe themselves to have a thorough understanding of the issues and quality recommendations that are likely to make a difference, but also persuasive, perhaps even coercive, skills that can chip away at opposition to change and resistance to recognizing the role that the teacher him- or herself may play in the motivation issues.

Given that fact that school psychologists provide motivational support on an indirect basis, via consultation with teachers, the latter subscale is perhaps the most critical of all. In essence, participants can judge themselves to be professionally competent to understand, assess, and develop interventions with student motivation concerns, however unless they are (or see themselves as) capable of effectively persuading the direct service provider, the teacher, to actually make changes in his or her classroom or to implement appropriate interventions, the professional gains may hold

little value in the motivational lives of students. The treatment group participants did indeed make substantial growth in this area, and those gains must be recognized and applauded. Perhaps with more time to consider the ideas and more opportunity to try out their newfound skills, participants will continue to feel more confident in their ability to make a difference in the motivational lives of students.

Change in reported choices of assessment and intervention strategies.

As noted in the introduction chapter, one of the goals of the professional development workshops was to encourage participating school psychologists to explore not only individual level factors influencing student motivation and behaviors, but also to examine the contextual factors which may be influencing or shaping students' motivational beliefs and behaviors. Taking into account both personal and contextual factors when exploring motivation issues allows the psychologists to consider the environmental and systemic influences on the beliefs and cognitions of students, and to explore ways to alter the context to produce more desirable outcomes for students in terms of learning and engagement. In general, many in the motivational research community have argued that a contextual or interactional perspective provides a more accessible point of entry for school psychologists (Stipek, 2002) as well as one that has the potential to reach multiple students beyond those who might meet the threshold of being called a "motivation problem."

Results indicate that treatment group participants rated themselves as significantly more likely to explore both student and contextual characteristics upon completion of the professional development seminars than they were at the outset of the workshops. They

were more likely to look to both students and teachers to get a better understanding of the motivational beliefs of the students as well as their (students' and teachers') perceptions of the contextual factors influencing such beliefs and behaviors. Building upon their own enhanced knowledge and understanding of motivation they were more likely to take their now "more informed," perhaps "more critical," lens to their observations of classroom environments and their assessment of the motivational climate of such classrooms. This was made particularly clear in the increased ratings of their likeliness of taking into consideration the specific TARGET dimensions during classroom observations.

In examining the specific types of assessment strategies, the results indicate that the greatest gain was made in their endorsement of the use for formal survey techniques as a means of understanding student motivation issues. As school psychologists in a previous study (Rau, 2001) had acknowledged that they didn't "really have a formal way to assess motivation," the introduction of the PALS surveys appears to have filled a gap in the "psychological assessment toolbag." While much of the growth was in the use of survey measures, treatment group participants also rated themselves as much more likely to utilize interview and observation techniques upon completion of the series of professional development seminars. This increased likelihood to utilize these latter two common assessment techniques may represent not only a better understanding of *how* to collect relevant information, but also may result from a better understanding of *what* they are indeed looking for when utilizing such techniques.

With regards to intervention techniques for student motivation concerns, pretest-posttest differences indicate that two of the three research hypotheses were confirmed. In

general, the series of professional development seminars centered around motivational techniques which encouraged students to focus on their learning and development. Instead of pushing a typical compliance agenda where students are engaging in learning activities in order to earn an extrinsic reward, gain public recognition, or to avoid punishments or unpleasant consequences, the achievement goal perspective emphasized in the seminars suggests that students who are focused on their own individual improvement and progress will show more adaptive patterns toward learning.

In responding to the hypothetical profiles in the research measures, treatment group participants were more likely to recommend instructional and management strategies that encouraged students to focus on their own improvement and progress and that provided more choice and autonomy with their learning experiences after completing the series of professional development workshops. Given that both the treatment and control groups initially rated such strategies rather high at the outset of the series of professional development seminars, the fact that the treatment group still made substantial gains suggests that the workshops had a strong effect on their motivational belief system.

Similarly, treatment group participants' posttest responses for strategies emphasizing public recognition and competition also showed a marked change in the expected direction. While both treatment and control group participants initially rated such strategies rather low even before the workshops began (1.8 and 2.0 respectively), treatment group participants' posttest responses indicated that they were substantially less likely to encourage teachers to employ such strategies. In fact, posttest responses of treatment group members approached the lowest possible threshold, averaging ~ 1.3 on a

scale of 1.0 to 5.0. This small, yet significant, change, despite initially low ratings as it were, suggests that treatment group participants fully accepted the philosophies endorsed by achievement goal theory, in general, and the TARGET model, in particular.

Finally, while the time by group interaction for punishment strategies did not meet the criteria for statistical significance, treatment group participants' responses did at least show a trend in the appropriate direction. While control group ratings of their likelihood of recommending punishment strategies in response to motivation concerns increased slightly, treatment group participants were somewhat less likely to recommend such strategies.

Implications for practice

Taken together, the results explored above indicate that the professional development seminars had a clear and substantial effect on the knowledge and beliefs of the participating school psychologists. The performance on the quiz indicates that they have a much more solid grasp of the concepts introduced in the workshops. In addition, the psychologists themselves acknowledged that they believed they were more competent in their ability to understand the nature of student motivation problems, assess such concerns, and develop effective individual and classroom-level interventions that will ideally lead to more adaptive student motivation. Further, the enhancement in knowledge and beliefs were reflected in the participants' responses to the hypothetical cases, in which they were more likely to utilize the tools and frameworks introduced in the seminars and to recommend the strategies and practices that follow from such frameworks.

This growth in professional knowledge and beliefs has the *potential* to lead to change in professional practice. Taken at its most fundamental level, participation in the professional development seminars provided a new lens through which the participating school psychologists could understand student motivation issues. Grounded in a solid conceptual and theoretical framework, such a lens provides an alternative means through which to interpret students' behaviors and beliefs as well as the adaptive and/or maladaptive practices that take place in schools everyday.

When working with an individual student, the participating school psychologists can now better understand the motivational factors contributing to academic and behavioral difficulties. In conjunction with valid and reliable tools for assessing cognitive, academic, and behavioral skills, the psychologists can now bring an equally informed set of knowledge and tools to understand the motivational factors. This provides the research participants a better means of distinguishing the academic impairments from the motivational factors contributing to their negative effect. In addition, it also provides the participants with a means of exploring the contextual factors contributing to the motivational, and in turn, academic difficulties.

Such a contextual focus also provides the psychologists with an opportunity to extend their reach beyond the individual children with whom they are asked to work. Given achievement goal theory's focus on how the learning context shapes the motivational beliefs of students, intervention recommendations designed for one student have the potential to impact others in the class. Even if teachers/consultees do not initially see the benefits of implementing intervention recommendations on a larger,

class-wide scale, results from individual students may lead to increased confidence that such changes could lead to positive benefits in other students as well.

Limitations

While results from this study indicate that the treatment group showed significant improvement in their knowledge and beliefs regarding student motivation issues, it is important to acknowledge the limitations of the study and therefore the ability to make definitive claims based on the results.

Non-random group assignment.

As noted in the methods chapter, the original intention was for participants to be randomly assigned to either treatment or control group. Random assignment is preferred in that it provides a measure of control over other factors which could potentially influence the effectiveness of the intervention (i.e., the professional development workshops), by attempting to evenly distribute such characteristics across both groups. However, "the likelihood that groups are equivalent increases as a function of the size of the sample" (Kazdin, 1992, p. 87). The equivalence of groups may not be assumed with small samples, as individual differences have a greater impact on the overall group averages. In the case of relatively small participant samples, such as those used in this study, Kazdin suggests that it is important to control for potential initial differences by conducting thorough pretest measurement on a variety of variables that may impact the ability to attribute group differences to treatment effects.

When it became evident that random assignment would not be feasible, this latter point was taken into consideration in determining matched assignment. Professional experience and preparation were the primary factors presumed to affect the outcomes, and thus the groups were balanced for years of experience and degree level. While these factors were taken into consideration and every attempt made to balance the distribution of these factors across the two groups, there is still a chance that additional factors, unmeasured in this study, may have contributed to the resulting group differences.

Nevertheless, it is important to note that the treatment and control group participants did not differ significantly on any of the pretest outcomes. This suggests that the matched assignment to treatment and control groups was successful. While random assignment would have been preferable from the standpoint of scientific rigor, it was not pragmatically possible for this study. The lack of significant pretest differences suggests that posttest differences can be more confidently attributed to the effect of the workshops.

Control groups – alternate research designs.

In addition, it is important to consider the potential of alternate designs in answering the research questions of the study. This study utilized a no-treatment, waiting list control group. The choice of this design over a simple no-treatment control group ensured that all participants were equally interested in participating in the seminars. However, as Kazdin (1992) notes, "a simple comparison of treatment and no-treatment control groups does not establish what facet of "the intervention" led to change" (p. 129). In order to answer this question, alternate treatment groups must be included in the design, thus allowing the researcher to determine if the specific intervention or specific

characteristics of the professional development are particularly important in producing change in the participants. For instance, control group participants could be provided with a motivation text, thus allowing for comparison of the effectiveness of various instructional methods.

While future studies ought to explore this important issue in order to understand how *best* to provide professional development for motivation issues, this study provides a preliminary answer regarding the possibility of growth when professional development is provided on student motivation issues. While the research questions specifically note that this study explores the effects of participating in the professional development seminars, the seminar format itself was not necessarily in question. Instead, this study explored the effects of exposure to these particular motivational concepts, frameworks, and tools. Clearly the results indicated that participants' knowledge and beliefs were enhanced significantly. Future studies may explore the effectiveness of alternate formats and content on the knowledge and beliefs of school psychologists.

Self-Report Measures.

This study relied primarily on self-report measures. The knowledge quiz served as an objective measure of the growth in understanding of the motivation concepts, however all other measures relied on subjective self-evaluation of personal changes in beliefs and hypothetical practices. This reliance presented a challenge to documenting the "true" growth of the participants. Most importantly, there is an inherent response bias present in all self-report measures. The participants spent upwards of ten hours in professional development workshops in addition to the time spent thinking about and

attempting to apply the concepts that were introduced in the sessions. Therefore, it is reasonable to assume that they would be inclined to rate themselves higher after participating in the professional training.

To some extent the consistency in amount of improvement across perceptions of competence subscales, combined with the moderate posttest rating in the communication and persuasion subscale (i.e., persuading teachers to make changes in their motivational practices), lends credibility to their overall self-evaluations. While ratings for each subscale improved nearly the same (i.e., ~1.0 point higher at posttest), they did not all result in a universally positive judgment of their skill development in each subdomain. In particular, they were initially most skeptical about their ability to persuade teachers to make changes. And despite significant improvement, they were still tentative in their judgment of their competence in this area. This variability in final ratings suggests that the participants were thoughtful and critical in evaluating their skill development over the course of the seminars.

Hypothetical vs. "real-life" cases.

It is also important to consider the fact that participants responded to hypothetical cases developed by the researcher. The three cases were designed to capture a range of motivational problems that could potentially be brought to the attention of school psychologists. The use of hypothetical cases provided some measure of control and predictability to the experimental design, as all participants, including both treatment and control, considered the same data when interpreting and responding to cases. While necessary for the purposes of this experimental design, it is also important to note that

they do not represent actual cases that the participants themselves have experienced. For instance, for measurement purposes, all three hypothetical cases described 5th grade male students. Many of the workshop participants work with middle and high school students and therefore may not have the experience of working with elementary-aged students and may be inclined to endorse different assessment and intervention strategies for the secondary level students. Future studies should examine the extent to which participants similarly endorse the motivational assessment techniques and strategies across different grade levels.

Measurement issues.

Most of the measures utilized in this study were not validated in prior studies. With the exception of the *Motivation Strategies Survey*, all other measures were developed for the purposes of this study. In general, analyses indicated that each scale and subscale had acceptable internal consistency reliabilities. Nevertheless, the measures need to be validated in future studies with other populations (e.g., additional school psychologists, teachers, and other educational professionals) as well as be validated against other motivation measures.

In addition, the survey instruments designed for this study required participants to evaluate their likelihood of utilizing particular assessment techniques, paying attention to particular classroom characteristics, and recommending particular intervention strategies. Assessment and intervention techniques could also be explored in a more naturalistic way. Instead of providing a list of potential assessment and intervention strategies, participants could be asked to describe how they approach specific motivation cases that

are brought to their attention. This latter approach provides a more authentic evaluation of the extent to which participants have internalized the concepts and strategies introduced in the professional development workshops.

Workshop Timeline.

Another limitation of the study involved the timing of the professional development workshops. The study began in early February and the final workshop was not completed until the end of May. Especially as the school year progressed, participants noted that their schedules were so intense that they were struggling to find the time to employ new strategies and tools into their daily practice. Participants may not have been able to devote substantial time and professional energy to interpreting the data, developing recommendations for changes in the classroom learning environments, and then evaluating both the response of those teachers and effects of the changes.

To some extent the increases in participants' perceptions of competence may be largely based on knowledge increases and the expectation that this knowledge will lead to consultation success, rather than actual personal experiences of success. In this regard, though, it is important to note that treatment group participants' perceptions of competence remained high at the delayed post-test follow-up when many of the participants had had more time to implement the strategies and techniques introduced in the professional development workshops. While the timeframe for the delayed posttest was short (three to six weeks after completion of the seminars), the consistency of the data across the four sites, each ending at different times in the school year, lends support to the claim that participants maintained their sense of competence. Additional follow-up

assessment would lend credibility to the assertion of sustained growth, confirming the long-term effects of the workshops.

Future directions

As noted above, this study explores the direct effects of the workshop on the participating school psychologists' knowledge, perceptions of competence, and likelihood of using particular assessment techniques and recommending particular intervention strategies. Future studies should address some of the limitations of this study noted above, by examining the impact of the psychologists' participation in these workshops beyond the self-report measure, with "real" cases in addition to hypothetical cases. Exploration of changes (or lack thereof) in *actual* practice will provide more clear understanding of the lasting effects of the workshops. It is one thing to be better able to analyze cases in the abstract, however the "real" test of the effects of the workshop lie in the ways that it impacts the participating school psychologists' practices.

Further, while this study explored changes in the knowledge, beliefs, and practices of the participating school psychologists, it did not address the ancillary effects of these changes in the knowledge, beliefs, and, most importantly, practices of the target audience – the teachers and students with whom the school psychologists' work. In effect, while the study may demonstrate positive changes in the school psychologists, such changes may only be determined worthwhile if they eventually result in the development of more adaptive motivational climates in classrooms and schools and more adaptive motivational beliefs and behaviors in students.

While school psychologists may bring more effective knowledge, beliefs and strategies to the consulting relationship, the school psychologists themselves provide indirect service to students by attempting to affect the knowledge, beliefs, and most importantly, the actions and behaviors of the consultant teachers. Success depends on the consultee's (i.e., the teacher's) willingness to engage in consultation and to act upon school psychologists' recommendations that will eventually produce changes in student motivation. In fact, participants' pretest responses indicated that teachers were only *somewhat likely* (mean = 2.80, SD = 0.728)) to seek school psychologists' support on student motivation issues. Future studies should explore teachers' beliefs about the effectiveness of school psychologists in providing support on student motivation issues. In addition, students' motivational orientations as well as their perceptions of the motivational characteristics of the classroom environment should be examined in the future. Changes in the beliefs and practices of these two groups would lend great support to the claims regarding the effectiveness of the professional development seminars in providing meaningful and far-reaching change for student motivation issues.

Finally, results from this study also yield recommendations for changes in the professional development workshops themselves. In particular, results from the study suggest that participants gained a great deal of knowledge about motivation constructs and their application and learned valuable new methods for assessing motivation concerns and effective strategies for developing more adaptive classroom learning environments. However, participants still rated themselves as only *somewhat competent* in their ability to actually persuade teachers to implement such changes. One interpretation of this finding is that more time may need to be devoted to specific

consultation skills. In addition to exploring *what* types of assessment techniques should be utilized and *what* the data reveal about the adaptiveness of students' motivational beliefs and the motivational climate of the classroom (i.e., *how* to interpret the data), more time may need to be devoted to *how* to convey such data to teachers in ways that they will understand and respond productively. Similarly, in addition to exploring *what* types of intervention strategies are most effective for developing adaptive motivational beliefs and behaviors, more times may need to be devoted to *how* to effectively describe and recommend such strategies in ways that encourage teachers to see the value despite any additional work it may require of them. While this was done to a limited extent in the workshops, results suggest that greater emphasis may need to be placed in this area. Several participants called for follow-up sessions which may provide just such an opportunity.

Nevertheless, even with changes in the professional development seminars, professional constraints may yield limited opportunities to implement the strategies learned, regardless of the substantial effects on the knowledge, beliefs, and potential practices of the school psychologists. The psychologists who participated in this study indicated that they already spend a relatively small percentage of their time on consultation (12.4 percent) and intervention (5.1 percent) activities. These percentages themselves provide support for the need for more expanded roles for school psychologists. While preparation programs and ongoing professional development provide the educational foundation to support teachers, staff, and students on a multitude of educational, behavioral, and mental health issues, there is still the struggle to break from the traditional role of assessment and diagnostic services.

The gains made as a result of participating in these workshops at least provide psychologists with the knowledge and expertise to address student motivation concerns as they present themselves in their daily practice. Participants must now find the time to address such concerns, thus capitalizing on their professional growth. Perhaps the enhanced knowledge and perceptions of competence will lead to opportunities to advocate for such role change, yielding benefit for the students and staff whom they serve. As school psychologists act upon the knowledge gained in these professional development seminars, utilizing meaningful data that informs recommendations for changes in classroom practices, they illustrate the potential of asking for and getting *more valued service* from their school psychologists. Successful consultation efforts provide the opportunity to not only make positive changes for that student or classroom, but also to yield allies (e.g., teachers, administrators, and parents) in their efforts to expand the roles of school psychologists for the betterment of students. It is hoped that the knowledge and training provided in these seminars serves as an impetus for change, and that momentum is slowly gained in recognizing the possibilities that school psychologists provide for supporting teachers and students alike.

APPENDICES

APPENDIX A

Enhancing School Psychologists' Knowledge and Skills Regarding Student Motivation

'I know she could do it if she just tried.'

'He's so concerned with looking 'dumb' that he won't even make an attempt.'

Concerns like these about motivation are commonly expressed by both teachers and parents alike. School psychologists can be valuable resources for addressing these problems, however many would like more resources to address such concerns. The goal of this series of three workshops is to provide school psychologists with effective ways to think about motivation and empirically-supported strategies for assessing and intervening with such concerns.

Workshop Objectives:

- To enhance participants' knowledge of motivation concepts
- To enhance participants' knowledge and use of assessment tools for motivation
- To enhance participants' knowledge and use of empirically-supported intervention strategies

Workshop Content:

Workshop 1: Exploring Current Practice... Introducing New Perspectives
Workshop 2: Tools and Frameworks: Evidence-Based Assessment and Intervention Strategies
Workshop 3: Exploring Participants' Experiences Using Tools and Frameworks
Systems Change: Moving Beyond Individual Cases and Classrooms to School-wide Reform

*** ***Participants who complete all three workshops will be eligible for (1.0) SB-CEUs*** ***

Workshop Format:

Concepts, assessment tools, and intervention strategies will be introduced via lecture and large-group discussion and developed in small group discussions focused primarily on case-based application activities.

Research Connection:

While not required, all participants are encouraged to participate in the research study accompanying these professional development workshops. (See enclosed letter)

Workshop Dates and Times:

All participants, regardless of their participation in the research component, will be randomly assigned to one of two series of workshops. In addition to providing comparable treatment and control groups for the research study, it will also ensure a manageable number of participants in each series.

Series A:	[Session #1 date & time]	Series B:	[Session #1 date & time]
	[Session #2 date & time]		[Session #2 date & time]
	[Session #3 date & time]		[Session #3 date & time]

Unless otherwise noted, all workshops will be conducted at the [location]. If necessary, please call [person, phone number] for directions. Snacks and refreshments will be available at all workshops. In addition, lunch will be provided for the second workshop of each series of workshops. Please indicate if a vegetarian lunch is preferred.

RSVP:

If interested in participating in the professional development workshops, please contact [person] of [school district] at [phone number] by [date].

Presenter information: Cheryl Rau is an advanced doctoral candidate in the School Psychology Program at Michigan State University. Ms. Rau is a certified school psychologist who earned her Educational Specialist degree at MSU, including internship experiences at the Secondary Learning Center of Ingham ISD and Plymouth-Canton Public Schools. She completed additional doctoral-level internship training with Ann Arbor Public Schools. Ms. Rau has been studying student motivation throughout her graduate career at MSU and has presented at numerous national conferences, including the annual meetings of the National Association of School Psychologists and the American Educational Research Association. In addition, she has taught a Masters-level motivation course (CEP802) for teachers and administrators and has served as sole instructor, teaching assistant, and/or field supervisor for several courses in the School Psychology Program at MSU.

If you have any questions about these workshops, please feel free to contact the presenter at [home phone] or [work phone]. She can also be reached via e-mail at [email address].

APPENDIX B

REMINDER!!! SB-CEU Opportunity!!

Professional Development Workshops at [School district]

Enhancing School Psychologists' Knowledge and Skills Regarding Student Motivation

Objectives:

- To enhance participants' knowledge of motivation concepts
- To enhance participants' knowledge and use of assessment tools and empirically-supported intervention strategies for motivation

Workshop Dates and Times:

All participants will be randomly assigned to one of two series of workshops.

Series A:	[Session #1 date & time]	Series B:	[Session #1 date & time]
	[Session #2 date & time]	Series B:	[Session #2 date & time]
	[Session #3 date & time]	Series B:	[Session #3 date & time]

Participants who complete all (3) workshops will receive 1.0 SB-CEUs

Deadline: Please call or email by [date]
[phone number] or [email]

APPENDIX C

Goal Structure Activity – Student Descriptions

Struggling Student

- School does not come easy to you, though you've gotten by over the years because of your solid work ethic.
- Though you earn passing grades in most of your classes, it takes a great deal of effort and extra support from teachers, friends, and parents.
- You are beginning to get frustrated with the extra time and effort necessary for moderate success and have recently begun reducing your workload.

Star Student

- You are star student in the class
- You are respected by your teachers and classmates as one of the brightest in the class
- You always earn top grades, turning in all assignments and doing well on all tests
- Despite your abilities, you do not always challenge yourself as much as you could.

Hopeless Student

- School has never come easy to you
- After years of difficulties and failure, you have come to believe that you are just not a "school person" and have essentially given up.
- Your teachers try to help you as much as they can and have made an effort to ask other students to work with you as a tutor. While you can do the work when they are around to help you, you can't seem to do it on your own.

Inconsistent Student

- You are believed to be a very capable student, however you don't seem to care much about school.
- In particular, you do not like the routines of school and seem bored with most of the traditional curriculum.
- When interested, you turn in stellar work, however when not interested, you rarely bother to turn anything in at all.

APPENDIX D

Enhancing School Psychologists' Knowledge and Skills Regarding Student Motivation

Workshop #1 – Conceptual Foundations

Facilitated by:
Cheryl A. Rau
School Psychology Doctoral Candidate,
Michigan State University

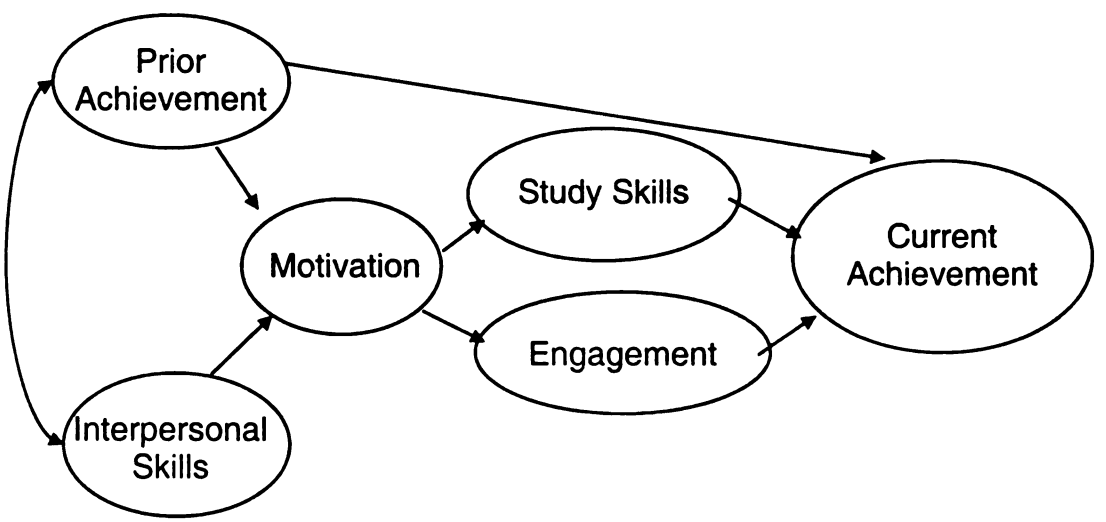
with financial and administrative assistance from
[School District]
[Date]

Why is Student Motivation important to consider?

Influence on student learning

- Direct (Keith, 1988; Walberg, 1986)
  - Others include previous achievement, ability/aptitude, quality and quantity of instruction, and more
- Indirect (DiPerna, Volpe, & Elliott, 2002)
  - Academic Enablers – "attitudes and behaviors that allow a student to participant in, and ultimately benefit from, academic instruction in the classroom" (p. 294).
    - Motivation: assesses initiative and persistence regarding academic subjects (includes responsibility, preference for challenging tasks, and goal-directed behavior)
    - Interpersonal skills: assesses communication and cooperation behaviors necessary to interact with other people in the classroom (including social interaction, work interaction, and responsive behavior)
    - Engagement: assesses level of active participation in classroom instruction (including asking questions, volunteering answers, and assuming leadership in groups)
    - Study Skills: assesses behaviors, strategies, and skills that facilitate the processing of new materials (including work preparation, work completion, and work review)

Model of Student Learning



Taken from DiPerna, Volpe, and Elliott, 2002

- Motivation has a mediating role
- What's missing from the DiPerna, Volpe and Elliott model?
  - Where's the context?
    - Only explores within-student characteristics without acknowledging contextual influences on the expression of those characteristics
  - Where's the "attitudes and beliefs"?
    - Limited inclusion of cognitive components; primary focus on behaviors

Coping Mechanism

- All students will experience academic difficulty at some point
- Response to that experience is key to effective learning

****

Behavioral Perspectives on Student Motivation

Behavioral approaches to motivation are the most common approach used in schools.

- These approaches are based on the idea that through the provisions of additional incentives, students will be more likely to produce the desired behavior.

Overall goal = increase behavior

Behavioral Mechanism:
Offer incentives that are desired by the student in order to encourage behaviors that are desired by the teacher/parents/adults

Some motivation scholars argue that rewards undermine students' intrinsic motivation to learn.

- Intrinsic motivation theorists posit that human beings are naturally inclined to want to learn and develop competence
- They believe that this natural inclination can be supplanted by rewards
  - Discounting Principle - If one possible explanation for an individual's behavior is particularly salient, all other explanations are discounted
    - Student Interpretation – if you must give me a reward to engage in a behavior, then that behavior must not be all that desirable in the first place!!
  - If extrinsic reward is no longer available, then students will show a reduction in the behavior because the "new reason" for engaging in the behavior is no longer present. Results in the student...
    - Putting forth less effort
    - Pursuing less challenging tasks

      If certain tasks will earn the reward, what's the point of challenging myself to pursue more difficult tasks that won't offer much in the way of additional rewards?

Major question –
Is it the rewards that are the problem or is it the way that reward systems are structured that reduces intrinsic motivation?

- Reward systems can be structured in various ways:
  - Informational – conveys competence and increases intrinsic motivation
  - Controlling – conveys external locus of control and undermines intrinsic motivation

- Overarching question to consider…
  - To what extent do students interpret the use of rewards as informational vs. controlling?

- If you choose to use rewards, use them effectively.
  - Make explicit the connection between the desired behavior and the reward
  - Deliver rewards in ways that provide informational feedback on progress
    - Emphasize instructional goals that serve as criteria for earning reward
  - Avoid competitive reward structures
    - Focus on improvement
    - Individualize goals/standards
  - Make rewards less salient
    - Keep focus on learning rather than reward

Social-Cognitive Perspectives on Student Motivation

Social-cognitive perspectives on student motivation emphasize the role that social-contextual factors play in determining how students cognitively interpret and respond to learning experiences.

- Students' perceptions of classroom and school environments are seen as central determinants of achievement-related beliefs, affect, and behaviors (Ames, 1992; Elliott & Dweck, 1988; Roeser, Eccles, & Strobel, 1998).
- Children are active meaning makers within social contexts

  "the meanings children derive from their experiences in school are instrumental in shaping their beliefs about themselves as learners, about the content being learning, and about the goals of the learning process itself" (Roeser et al, p. 168).
- Such meanings influence the effort directed toward learning (Ames, 1992a) and are influenced by their perceptions of the organizational, instructional, and interpersonal features of classroom and school environments.

"One of the most important assumptions of social cognitive models of motivation is that motivation is a dynamic, multifaceted phenomenon that contrasts with the quantitative view taken by traditional models of motivation"

(Pintrich and Linnenbrink, 2002, p. 313).

Key Tenets of Social-Cognitive Perspectives

- Qualitative perspective on motivation
  - more important to understand ***how*** and ***why*** (rather than ***how much)*** students are motivated for school learning
- Situated and contextualized
  - Motivation is more than personal disposition or trait that is only modestly changeable
  - Student motivation is responsive to changes in characteristics of the learning environment
  - Thus school professionals have an opportunity to structure learning situations in a way that encourages students to adopt a more adaptive perspective on learning and the educational process

Achievement Goal Theory

Achievement goals refer to students' beliefs about the goals or purposes of engaging in achievement-related behavior.

> "Students who approach the same lesson or activity with different achievement goals may engage in it quite differently and emerge with different outcomes" (Brophy, 1998, p. 27).

Research over the last 20 years has identified two distinct achievement goals, *mastery goals* and *performance goals* (Ames, 1992).

- *Mastery goal orientation*
  - Students are focused on developing new skills and understandings and achieving a sense of mastery based on self-referenced standards.
- *Performance goal orientation*
  - Students are focused on (their own and others') judgments of their ability
  - Distinction between *perf-approach* and *perf-avoidance goals*
    - *Performance-approach* – students are focused on gaining or maintaining favorable judgments of their ability
    - *Performance-avoidance* – students are focused on avoiding negative judgments of their ability
- Research has explored the extent to which these goal orientations have positive, adaptive effects on student learning. In general...
  - *mastery goals* are universally considered the most adaptive goal orientation
  - *performance-avoidance goals* are universally considered the least adaptive goal orientation
  - *performance-approach goals* – research is mixed; too early to make definitive statement regarding the adaptive nature of this goal orientation

Benefits of adopting a mastery/learning goal orientation

- Focus on influence of effort, as opposed to ability, in determining success or a sense of mastery
- Persist in the face of difficulty
- Take risks and pursue challenging tasks
- Employ more effective learning strategies in order to gain a deeper understanding of the material

Consequences of adopting a performance goal orientation (espec. perf-avoidance)

- Focus on their own or others' perceptions of their ability
- Evidenced by performing better than others or achieving success through minimal effort
- Failures are interpreted as evidence of low ability
- Effort is the "double-edged sword" (Covington & Omelich, 1979) – it is necessary in order to master challenging material, however if you put forth effort and do not succeed, then low ability must be the explanation for failure
- Avoid challenging tasks
- Utilize ineffective or superficial learning strategies

Achievement Goal Structures

Individual Characteristic vs. Classroom Characteristic

While achievement goals are considered to be adopted by an individual, classrooms and school communities can be structured in ways that encourage or elicit a particular achievement goal orientation.

- Situations or contexts can provide information cr cues about the purposes of achievement in that setting
- To the extent that individuals attend to these cues, the messages provide the structure in which individuals form their decisions about the goals they will pursue

Cues in situation → create a goal structure → influences the personal goal orientation of the student

Examples:

Cue/Message – teacher stresses the value of learning and understanding for its own sake
→ creates mastery goal structure

Cue/Message – teacher stresses the importance of learning about a subject because it is a competitive world and the only way to get ahead is to know more than others
→ creates a performance goal structure

Questions to guide assessment and intervention activities:

- To what extent does this classroom structure encourage a learning/mastery goal orientation? In what ways does this classroom encourage a performance goal orientation?
- In what ways do students get the message that learning and improvement is the priority in this classroom rather than social comparison and competition or vice versa?
- Are whole class tasks structured with a competitive, individualistic, or cooperative focus?

APPENDIX E

TARGET Framework

(Ames, 1990; Ames, 1992; Brophy, 1998; Maehr & Midgley, 1991)

Achievement Goal scholars have developed guidelines for structuring classrooms in a way that encourages students to adopt learning/mastery goals. The TARGET framework explores six classroom structures/factors that can be managed in a way that elicits a focus on the individual learning and improvement found with learning/mastery goals. Similarly, these structures can be extended beyond the classroom to include school-wide policies and practices. They include: **T**ask, **A**uthority, **R**ecognition, **G**rouping, **E**valuation, and **T**ime.

Teachers have an opportunity to affect their students' motivation by creating a classroom environment that elicits adaptive achievement goals. To do this, they should be encouraged to examine their classroom practices to determine to what extent they encourage their students to think and act in a way that is consistent with learning goals rather than performance goals. The notes below explore classroom structures that are considered consistent with either (a) traditional approaches to classroom structures and student motivation or (b) the more adaptive focus on learning/mastery goals advocated in the TARGET framework.

T(ask) **select tasks so as to provide an optimal level of challenge and to emphasize activities that students find interesting and intrinsically engaging**

Traditional Approach:	TARGET Approach:
• All students exposed to same material, regardless of individual differences in interest and skill level • Emphasis on content coverage and memorization of material • Little attention is given to making material relevant to students' interests and lives	• Increased variety of learning activities • Focused on connecting to students' interests, experiences, and skill level • Purpose of learning particular subject-matter is emphasized to promote valuing of material

A(uthority) **share authority with students by providing them choice and input on learning activities**

Traditional Approach:	TARGET Approach:
• Teacher assumes primary authority for determining appropriate behavior and learning opportunities • Students are provided little voice in setting goals and structuring learning activities and evaluations	• Teacher shares authority with students regarding appropriate behavior and learning activities • Students are given considerable choice over what they learn, how they learn it, and how they will be evaluated

R(ecognition) **recognize all students who make progress and show improvement, not just the highest achievers**

Traditional Approach:	TARGET Approach:
• Recognition is provided on a limited, competitive basis • Students who achieve at the highest level are publicly recognized for their achievements • Less capable students rarely earn recognition regardless of the amount of effort expended for their achievements	• Students are recognized for making noteworthy progress and exhibiting commendable effort • Progress, and therefore the conditions for recognition, are individually determined • Under most circumstances, recognition (including praise) is granted privately

G(rouping) **group in ways that promote cooperative learning and minimize interpersonal competition and social comparison**

Traditional Approach:	TARGET Approach:
• Students typically work individually, allowing for minimal social interaction and learning and increased opportunity for social comparison of achievements • Grouping is typically based on ability or achievement level, creating a competitive environment based on social comparison	• Cooperation, rather than competition, is emphasized in working toward mutually beneficial learning experiences • Grouping is based on interests rather than relying solely on achievement level

E(valuation) **focus on individualized assessment of progress rather than comparisons of individuals or groups**

Traditional Approach:	TARGET Approach:
• Evaluations are typically based on absolute levels of performance or normative comparisons • All students are evaluated on the same assessments and in the same format, encouraging social comparison and competition • Evaluation is a one-time only event - "either you know it or you don't"	• Students are encouraged to view learning as a process, with evaluation results indicating their progress toward deeper understanding • Students are given opportunities to revise their tests and assignments, thus putting the emphasis on improved learning via effort and persistence

T(ime) **use time in creative ways that ease the constraints of rigid scheduling and allow for more use of valuable learning activities that are hard to fit into shorter class periods**

Traditional Approach:	TARGET Approach:
• Classes are locked into inflexible schedules, providing little opportunity to pursue learning activities that do not fit into 30-60 minute schedules • Strict deadlines are always followed	• Time is used more flexibly in order to encourage a greater range of activities in the curriculum • Given flexible use of time and increased curricular choices, student autonomy is encouraged • When needed, students are given additional time to complete assignments, thus emphasizing individual learning over inflexible classroom structure

References:

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Brophy, J. (1998). *Motivating students to learn.* Boston, MA: McGraw-Hill.

Maehr, M., & Midgley, C. (1991). Enhancing student motivation: A schoolwide approach. *Educational Psychologist, 26*, 399-42

TARGET Model (Ames, 1990)

The TARGET provides a framework for organizing classrooms and learning activities in ways that encourage students to take on a ***mastery goal orientation***. It explores six classroom factors that can be manipulated to encourage students to focus on *mastery goals*.

T(ask) select tasks so as to provide an optimal level of challenge and to emphasize activities that students find interesting and intrinsically engaging

- Structure tasks with short-term, realistic goals - helps students focus on their progress
- Variety and novelty in tasks and activities - helps to minimize opportunities for comparison and makes learning more enjoyable
- Opportunity for review and challenge – helps students focus on learning, progress, and improvement
- Participation structure – the way teachers allow or require students to participate in classroom activities

A(uthority) share authority with students by providing them choice and input on learning activities

- Encourage self-monitoring and evaluating their own work
- Leadership roles in the classroom

R(ecognition) recognize all students who make progress and show achievement, not just the highest achievers

- Individual student progress and improvement
- All students opportunities to receive recognition
- Private delivery of any kudos

G(rouping) group in ways that promote cooperative learning and minimize interpersonal competition and social comparison

- Flexible grouping patterns – responsive to interests and changing skills
- Emphasize social skills necessary to work well and learn with the group

E(valuation) focus on individualized assessment of progress rather than comparisons of individuals or groups

- Focus on learning as a process vs. simply collecting evaluation "products"
- Individual mastery and improvement – no comparison
- Self-evaluation – consistent reflection on what is known and what can be learned
- Opportunities to improve performance
- Various forms of evaluation

T(ime) use time in creative ways that ease the constraints of rigid scheduling and allow for more use of valuable learning activities that are hard to fit into shorter class periods

- Consider pace and timing of instruction
- Allow for learning at own pace – time extensions if necessary to facilitate learning

Questions to guide your assessment of the learning environment based on the TARGET framework

Task

1. Are tasks structured to optimally challenge students at appropriate skill levels?
2. Are tasks presented in ways to connect with students' interests and experiences?
3. Are the purposes of learning activities clearly explained?
    - Connected to instructional goals
    - Connected to future learning opportunities
4. Are students working on a variety of tasks, thus minimizing comparison across students?

Authority

1. Are students provided choices regarding topics, format, and other assignment features?
2. Is student input incorporated into classroom learning activities?
    - Acknowledging students' insights into the topic
    - Encouraging pursuit of unique interests while still providing structure

Recognition

1. Are students recognized publicly or privately for their individual achievements?
2. Is recognition provided only to those students who perform the best normatively or are students recognized for improvement, effort, and persistence (i.e., traditional honor rolls and displays of the "best papers")?

Grouping

1. Is grouping structured to encourage cooperation rather than competition?
2. Are group assignments varied so as to allow students to work together based on common interests rather than achievement level?
3. Does the classroom function as a collaborative learning community, with students working together with the teacher toward shared learning goals?

Evaluation

1. Are students allowed/encouraged to redo assignments for improved learning?
2. Are students given multiple opportunities to display what they know?
3. Does learning on a particular topic seem to stop at the point of assessment?
    - Is material revisited (individually, small group, or whole class) when it becomes apparent that it was not learned well the first time around?
4. Are evaluation formats varied in order for students to best show what they know?

Time

1. Are students given additional time when needed in order to maximize learning opportunities?
2. Is time used in flexible ways that allows teachers to structure learning activities that allow for deeper understanding and engagement, yet would otherwise not fit into typical 30-60 minute time blocks?

APPENDIX F

Survey Results from
Patterns of Adaptive Learning Scales (PALS) (2000)

Case Student	Full Class	Personal Goal Orientation (Purpose/Goal = _____)
3.2	3.4	Mastery – develop competence
2.2	3.6	Performance-Approach – demonstrate competence
4.2	4.0	Performance-Avoidance – avoid demonstrating incompetence
Case Student	**Full Class**	**Perceptions of the Goal Structure in the Classroom (Purpose/Goal = _____)**
3.2	3.5	Mastery – develop competence
4.2	4.0	Performance-Approach – demonstrate competence
3.6	3.5	Performance-Avoidance – avoid demonstrating incompetence
Case Student	**Full Class**	**Students' Academic-Related Perceptions, Beliefs, and Strategies**
2.5	3.5	Academic Efficacy
3.5	3.2	Academic Press
3.5	2.2	Academic Self-Handicapping Strategies
4.0	2.4	Avoiding Novelty
1.5	1.4	Cheating
2.2	1.8	Disruptive Behavior
1.5	2.2	Self-Presentation of Low Achievement
3.0	1.8	Skepticism About the Relevance of School for Future Success
	Teacher	**Teachers' Perceptions of the School Goal Structure**
	3.0	Mastery Goal Structure for Students
	3.0	Performance Goal Structure for Students
	Teacher	**Teachers' Approaches to Instruction**
	3.25	Mastery Approaches
	3.5	Performance Approaches

Observations based on TARGET Model

The TARGET model draws your attention to various classroom factors that can be manipulated to encourage students to focus on *mastery goals* as opposed to *performance goals.*

T(ask) select tasks so as to provide an optimal level of challenge and to emphasize activities that students find interesting and intrinsically engaging

- Several mini-assignments with clear instructions and objectives
- Good modeling of tasks prior to independent work; significant scaffolding on written assignments (step-by-step examples on worksheets
- Minimal variety in tasks and activities – all students working on the same assignments at the same time; primarily worksheets and seatwork
- Minimal opportunity for review and challenge – expected that students will do that on their own time

A(uthority) share authority with students by providing them choice and input on learning activities

- Minimal choice in assignments, minimal project-based learning

R(ecognition) recognize all students who make progress and show achievement, not just the highest achievers

- Very few public displays of work
- Bulletin boards are devoted exclusively to new content
- Private conferencing on grades

G(rouping) group in ways that promote cooperative learning and minimize interpersonal competition and social comparison

- Minimal group work at all

E(valuation) focus on individualized assessment of progress rather than comparisons of individuals or groups

- Evaluated via tests, quizzes, seatwork, and homework; virtually no projects or papers
- Clear standards for evaluation – no comparison to other peers
- All assignments are teacher graded – percentage correct listed, however no comments
- No opportunity to improve performance

T(ime) use time in creative ways that ease the constraints of rigid scheduling and allow for more use of valuable learning activities that are hard to fit into shorter class periods

- Rigid scheduling; rigid deadlines

APPENDIX G

TARRGET Framework

(Maehr & Anderman, 1993)

Task – how learning tasks are structured

- extracurricular activities that make learning relevant
- goal setting activities (use for home room?)

Authority/Responsibility – student participation in learning/school decisions

- instructional programs that encourage students to take initiatives and challenge themselves
- student feedback – ask for student comments and take them seriously

Recognition – the nature and use of recognition and rewards in the school setting

- encourage "personal best"
- reduce emphasis on honor rolls and other recognition systems that single out just a few students

Resources – decisions that are made on the use of money, materials, equipment, etc. and the provision of opportunities for students and staff

- encourage the development and maintenance of strategies that enhance mastery-goal emphasis
- create committees and/or enlist key personnel to procure necessary resources and develop necessary policies to encourage mastery goal structures

Grouping – the organization of school learning experiences

- provide opportunities for cooperative learning and problem-solving with <u>active</u> participation of all students

Evaluation – the nature and use of evaluation and assessment procedures

- establish policies and procedures that give students opportunities to improve their performance;
- create effective study skills classes to encourage students to become more reflective on their learning and to enhance their self-regulation;
- structure report cards to provide substantive feedback on learning;
- encourage student participation in the evaluation process

Time -- the scheduling of the school day and learning activities

- encourage flexibility in scheduling
- encourage cross-departmental collaboration
- give teachers greater control over time usage

APPENDIX H

Participant Information Questionnaire

Gender: M F **Degree level:** M.A./M.S. Ed.S. Ph.D.

Professional Experience:

Years of Experience as a School Psychologist: _____

Additional professional experiences working with Children, Youth, and Families (in addition to the number listed above):

Role/Job Title:	# of Years:
_____	_____
_____	_____

Current assignment:

Number of years in your current district: _____

	Number of schools	**Total number of students at this level**
Elementary	_____	_____
Middle School	_____	_____
High School	_____	_____
Center-based program	_____	_____
TOTAL (across levels)	_____	_____

District Information:

_____ Total number of students in your school district

_____ Total number of school psychologists working in the school district

Current professional roles:

Please indicate the <u>percentage</u> of time per week you currently spend on each of the following professional activities:

_____ Administration (e.g., staff meetings, Medicaid forms)

_____ Staffings (Child Study meetings, IEP meetings, MET meetings, Evaluation Planning meetings)

_____ Formal Assessment/Special Education Evaluation (including report writing)

_____ Informal Assessment/Screening

_____ Consultation (including teachers, parents, other professionals)

_____ Intervention (including general interventions, counseling, prevention, and crisis intervention)

_____ Supervision

_____ Other (Please specify: _____)

****

Motivation in Practice Questionnaire

Please approximate the percentage of cases in which they are involved for which motivation is an important contributing factor to the student's academic difficulties. _____%

		Never	Rarely	Sometimes	Most of the time	Always
1	When assessing students who are struggling in school, to what extent do you consider student motivation when making major educational decisions (e.g., referral for assessment, eligibility for special education)?	1	2	3	4	5
2	To what extent do the teachers with whom you work seek your support for motivation issues that arise in their classrooms?	1	2	3	4	5

APPENDIX I

Motivation Knowledge Quiz

For the questions listed below, please select the best answer amongst the choices.

1. According to achievement goal theory, an achievement goal refers to...
   a. The standard by which you and others judge whether or not you have achieved what you intended.
   b. The short-term (proximal) goals that students set in order to make tasks more manageable.
   c. A belief about the purposes of engaging in achievement-related behavior.
   d. All of the above
   e. None of the above

2. Students with performance-approach goals are best characterized by which of the following descriptors?
   a. They are concerned with doing their best possible work on their assignments.
   b. They always challenge themselves even though they know they will make many mistakes.
   c. They frequently ask questions in class in order to understand the material better.
   d. They are focused on outperforming their peers on class activities.
   e. Both A and D
   f. Both B and C

3. Which one of the following statements indicates that the speaker is focused on a performance-avoidance goal?
   a. "I hope that I do well on this presentation, otherwise my friends will think I'm stupid."
   b. "I hope that I do well on my math assignment, otherwise I'll probably have to do more practice sets."
   c. "I don't want to do too well on this placement exam because I'll be placed in the higher level classes."
   d. "I'm quite certain that I didn't do well on that paper, but hopefully my teacher will give me helpful feedback."

4. Which one of the following best describes a student with a mastery goal orientation?
   a. Michelle is focused upon earning the best grades in the class.
   b. Greg likes to be creative in his assignments, seeking new ways to display what he knows.
   c. Anne often goes over old assignments to make sure that she understands items that she missed.
   d. Both A and C
   e. Both B and C
   f. All of the above

5. Which one of the following best describes why a person with a performance goal orientation may choose to procrastinate on a major assignment?
   a. Laura doesn't care much about the grades she receives and therefore chooses to simply put forth the minimal effort to earn a passing grade.
   b. Carolyn is concerned that she will not do well on the assignment and thus does not want to try hard and end up looking stupid to her classmates.
   c. Jennifer does not like the topic that she is assigned to write about and therefore is not interested in doing the work necessary for the assignment.
   d. Both A and B

6. Three of the following classroom practices are typically associated with mastery goals. Which one is not?
   a. Emphasize what will be learned from an activity when it is introduced to the class.
   b. Give challenging tasks on which students will make many mistakes but also learn a lot.
   c. Allow students a great deal of choice over how they will present what they have learned.
   d. Encourage students to compete with one another in order to enhance their learning and engagement.

7. An achievement goal theory perspective on motivation suggests that understanding why students engage in academic tasks is more important than the effort they put forth on those tasks.
   a. True
   b. False

8. According to achievement goal theory, which answer is **true** when incorporated into the following statement:

   _____ *encourages a maladaptive goal orientation because it...*_____

   a. Cooperative learning... allows students to benefit (grade-wise) from other students' knowledge
   b. Normative grading... emphasizes relative performance rather than what the student has mastered or not.
   c. Time extension on an assignment... encourages students to procrastinate rather than meet expectations for class assignments
   d. Both B and C

9. Students in Ms. Stevens' science class have to give an oral report on a planet in our solar system. Which one of the students or groups of students exhibit behaviors most consistent with a performance goal?
   a. Steve and Tom decide to do a joint report on Venus. They know that they work well together and can trust one another to complete the assignment and earn an exceptional grade that they both desire.
   b. Jeff and Theresa decide to do their report on Earth because they've always been interested in understanding the evolution of the earth's ecosystems and both have already read a lot about it.
   c. Tammy decides that she will do her report on Pluto. Her sister had to write a similar report a few years ago when she was in Ms. Stevens' class and Tammy believes that she can use some of her sister's materials, thus saving her some work.
   d. Both A and C

10. Teachers often post examples of best papers or assignments in order to provide a model of quality work. According to achievement goal theory, this is likely to encourage which achievement goal orientation?
    a. Mastery
    b. Performance-approach
    c. Performance-avoidance
    d. Both A and B
    e. Both B and C

11. Which classroom conditions will best encourage students to adopt a mastery goal orientation?
    a. Allow students to retake tests for improved learning and performance.
    b. Publicly praise students when they earn one of the highest scores on the test.
    c. Develop fun assignments that students will enjoy and work hard to complete.
    d. Both A and B
    e. Both A and C
    f. All of the above

12. According to achievement goal theory, _____ encourage an adaptive goal orientation because they....
    a. Honor rolls ... provide a clear, measurable standard that students can aim to achieve.
    b. Programs like Book It ... give students an incentive (in this case, Pizza coupons) to read more books.
    c. Policies like revise/resubmit ... provide students opportunities to improve on their initial performance.
    d. Both A and B
    e. Both A and C
    f. All of the above

13. According to attribution theory, a student's explanation for why they succeeded or failed is <u>less</u> important than the actual success or failure in terms of how they will respond to future learning tasks.
    a. True
    b. False

APPENDIX J

Perceptions of Competence

****** PLEASE COMPLETE BOTH THE FRONT AND BACK PORTION OF THIS QUESTIONNAIRE ******

The following items are designed to assess how competent you believe you are in understanding and responding to **student motivation issues** you see in your practice. We all know that school psychologists are called upon to address a great variety of student problems and that they may feel more or less confident about their skills in different areas. **Therefore, please be as honest as possible in your assessment of your skills in addressing student motivation issues.**

For each of the items below, please rate how competent you believe you are in the area.

		Likelihood Rating				
		Not at all competent		Somewhat competent		Very competent
1	Using teacher interviews to understand the nature of student motivation problems.	1	2	3	4	5
2	Developing classroom-level interventions to improve student motivation.	1	2	3	4	5
3	Assessing the motivational systems that teachers have in place in their classrooms.	1	2	3	4	5
4	Understanding the motivational beliefs and cognitions that underlie student behavior.	1	2	3	4	5
5	Persuading teachers to alter classroom practices that influence student motivation.	1	2	3	4	5
6	Assessing the motivational beliefs and achievement goal orientations of students.	1	2	3	4	5
7	Assessing the effectiveness of classroom-level interventions to improve student motivation.	1	2	3	4	5
8	Using student interviews to understand the nature of student motivation problems.	1	2	3	4	5
9	Assessing the effectiveness of individual-level interventions to improve student motivation.	1	2	3	4	5
10	Developing individual-level interventions to improve student motivation.	1	2	3	4	5

		Likelihood Rating				
		Not at all competent		Somewhat competent		Very competent
11	Assessing how the classroom structures (such as grouping practices or evaluation systems) influences student motivation.	1	2	3	4	5
12	Discussing with teachers the classroom-level factors that influence student motivation.	1	2	3	4	5
13	Understanding how motivation influences students' learning and performance.	1	2	3	4	5
14	Persuading teachers to implement individual-level motivation strategies and interventions.	1	2	3	4	5
15	Persuading even the most difficult or resistant teachers to structure their classroom along best practices guidelines for student motivation.	1	2	3	4	5
16	Understanding the classroom-level factors that contribute to student motivation problems.	1	2	3	4	5
17	Using classroom observations to understand the nature of student motivation problems.	1	2	3	4	5
18	Discussing with teachers the nature of the motivational beliefs of students.	1	2	3	4	5
19	Using teacher and student surveys and questionnaires to understand the nature of student motivation problems.	1	2	3	4	5
20	Assessing the motivational climate of the classroom.	1	2	3	4	5
21	Supporting even the most difficult and resistant teachers in making changes to the classroom that support student motivation.	1	2	3	4	5

Michael

Michael is an 11-year-old, 5th grade student in your school. He has been brought to your attention by his teacher, Mr. Jones, because of concerns regarding his academic performance. More specifically, Mr. Jones notes that he is performing below average in the area of mathematics. In other areas, such as reading and writing, he is performing at an average level compared to his classmates. Overall he notes that Michael strikes him as a kid who does not like school much and puts forth the minimal effort to get by, especially in subjects that he does not enjoy or believe he is capable.

A review of Michael's record indicates that he has a history of poor performance in math, though his teachers also noted that he put less effort into this subject than others. Despite this history, this is the first time that he has been brought to the attention of any of the support staff. His previous and current teachers have noted that he performs poorly on tests, showing minimal mastery of basic math facts and concepts assessed. In addition, Mr. Jones notes that he does not complete much of his classwork (50%) nor does he turn in much of his homework (25%) in math. What he does turn in is often incomplete and/or incorrect due to silly errors. He believes that Michael is capable of learning the material, however he does not appear to put much time or effort into this subject.

Keep this particular student in mind as you are responding to the following surveys:

- Hypotheses questionnaire
- Assessment of Motivation survey
- Motivational Strategies survey

Tommy

Tommy is an 11-year-old, 5th grade student who has been brought to your attention because of concerns regarding his academic performance. More specifically, his teacher, Ms. Smith, notes that Tommy is performing below average in all academic areas. Ms. Smith believes he is one of the worst functioning students in his class, however she is not certain about his actual skills because he rarely gets a true glimpse of what Tommy can and cannot do.

Ms. Smith notes that, instead of working on his class assignments, Tommy is often found socializing with friends or goofing around. While Tommy has respectable homework and classwork completion rates (~75 percent), Ms. Smith notes that he gets a lot of help from classmates. In fact, she suspects that for much of his work, he is simply copying answers from his classmates rather than really trying to understand the concepts and skills. He appears to put little effort into test and quizzes and doesn't even try to mask his inattentiveness. While Tommy may be capable of learning the material, he does not appear to put much time or effort into his learning.

Keep this particular student in mind as you are responding to the following surveys:

- Hypotheses questionnaire
- Assessment of Motivation survey
- Motivational Strategies survey

Chris

Chris is an 11-year-old, 5th grade student who has been brought to your attention because of concerns regarding his academic performance. Chris is a well-liked student, popular with both students and teachers alike. Despite this popularity and genuine affection, his teacher, Ms. Miller, has expressed great frustration regarding Chris because she believes that he is capable of doing much better in school. She notes that he does not seem to apply himself unless he is extremely interested in the concept being covered.

Standardized tests reveal that Chris is a capable student who should be performing much better than he is in school. His parents note that he loves to read at home, especially in the area of science. They further note that he loves to write and has penned a few short plays which he and siblings perform at home. Surprisingly though, his talent for writing is rarely evident on his school assignments. In addition, Chris rarely participates in class discussion nor volunteers answers to Ms. Miller's questions, unless he is very interested in the topic. While Chris appears capable of learning the material, he does not appear to put much time or effort into his learning.

Keep this particular student in mind as you are responding to the following surveys:

- Hypotheses questionnaire
- Assessment of Motivation survey
- Motivational Strategies survey

APPENDIX L

Assessment of Motivation

The items below are designed to gather information about how you would go about assessing [profile name] **motivation** and the factors influencing it. Recognizing that school psychologists have a limited amount of time that they can spend on any one case, please indicate how likely you would be to use the following assessment techniques to understand the **motivational aspects** of [profile name] case.

	Assessment Techniques	**Likelihood Rating**				
		Not at all likely		Somewhat likely		Very likely
1	Observation and analysis of the motivational climate of the classroom and classroom practices and policies influencing the student's motivation	1	2	3	4	5
2	Interview with the student regarding his motivation and beliefs about learning	1	2	3	4	5
3	Student and teacher surveys assessing perceptions of the motivational climate of the classroom and classroom practices and policies influencing student motivation (Please specify: _____)	1	2	3	4	5
4	Observation and analysis of the student's behavior in the individual assessment situation	1	2	3	4	5
5	Interview with the teacher regarding his/her perception of the classroom practices and policies influencing the student's motivation	1	2	3	4	5
6	Observation and analysis of the teacher's instructional practices in the classroom	1	2	3	4	5
7	Student and teacher surveys assessing the student's beliefs and motivation (Please specify: _____)	1	2	3	4	5
8	Interview with the teacher regarding the student's motivation and beliefs about learning	1	2	3	4	5
9	Observation and analysis of the student's behavior in the classroom	1	2	3	4	5
10	Interview with the student regarding his perceptions of the classroom practices and policies influencing student motivation	1	2	3	4	5

In attempting to understand the nature of [profile name] **motivation** and the **classroom factors influencing it**, how likely are you to gather information about the following classroom structures/dimensions?

Assessment Techniques		Likelihood Rating				
		Not at all likely		Somewhat likely		Very likely
1	How learning tasks and activities are structured	1	2	3	4	5
2	How much authority or autonomy the students have with regards to their learning	1	2	3	4	5
3	How students are recognized for their learning and performance	1	2	3	4	5
4	How students are grouped for learning activities	1	2	3	4	5
5	How students are evaluated	1	2	3	4	5
6	How effectively time is used for student learning and motivation	1	2	3	4	5

APPENDIX M

Participant # _____

Motivation Strategies

The items below are designed to gather information about the types of strategies you would recommend to teachers when addressing [profile name] motivation. Recognizing that various factors affect the recommendations that school psychologists make to teachers (e.g., how effective you believe the strategies would be for that particular student, how likely the teachers would be to implement them, and how capable you are of supporting the implementation), **please rate how likely you are to recommend that teachers employ these strategies and implement these policies to address [profile name] motivation concerns.**

	Motivational Strategies	Likelihood Rating				
		Not at all likely		Somewhat likely		Very likely
1	Reward students for high performances.	1	2	3	4	5
2	Contact the parents of students when they are not trying hard in class.	1	2	3	4	5
3	Grade down for incomplete assignments or poor work quality due to low effort.	1	2	3	4	5
4	Allow students to retake tests for improved performance and learning.	1	2	3	4	5
5	Display the work of high achieving students as an example.	1	2	3	4	5
6	Stress the importance of trying hard.	1	2	3	4	5
7	Say, "if you put more effort into your schoolwork, you will learn even more."	1	2	3	4	5
8	Emphasize the importance of getting good grades.	1	2	3	4	5
9	Give grades based on improvement.	1	2	3	4	5
10	Encourage students to try to do better than others.	1	2	3	4	5
11	Assign extra work to students when they have incomplete assignments or have shown minimal effort on their work.	1	2	3	4	5
12	Give special privileges to students who do the best academically.	1	2	3	4	5
13	Require students to correct mistakes on assignments.	1	2	3	4	5
14	Hold academic competitions.	1	2	3	4	5
15	Recognize students for effort and improvement.	1	2	3	4	5
16	Praise students when they show that they are working hard.	1	2	3	4	5

	Motivational Strategies	Likelihood Rating				
		Not at all likely		Somewhat likely		Very likely
17	Require students to spend extra time on schoolwork when they have incomplete assignments.	1	2	3	4	5
18	Emphasize the importance of making the honor roll.	1	2	3	4	5
19	Allow students to choose how they present what they have learned.	1	2	3	4	5
20	Let students create individual work contracts that detail what they need to master and at what level.	1	2	3	4	5
21	Reward students for improved effort.	1	2	3	4	5
22	Post honor rolls to recognize high performances.	1	2	3	4	5
23	Contact the parents of students who have incomplete assignments.	1	2	3	4	5
24	Display best papers and projects in the classroom.	1	2	3	4	5
25	Publicly recognize students when they get good grades.	1	2	3	4	5

APPENDIX N

EVALUATION QUESTIONS	Poor				Excellent
Overall, I would rate the program as:	1	2	3	4	5
The objectives of the program were clearly evident:	1	2	3	4	5
The leader(s)/instructor(s)' instructional skills were:	1	2	3	4	5
How effective was the program in holding your interest?	1	2	3	4	5
The facilities and accommodations were conducive to learning:	1	2	3	4	5
The materials were relevant and helpful:	1	2	3	4	5
I will be able to use the information and/or skills acquired through this program to improve my job effectiveness:	Disagree				Agree
	1	2	3	4	5
WRITTEN COMMENTS **(For additional space, please use the back of this form)**					
What could be done to improve the workshop/training?					
For future workshops, what topics would be most helpful in performing your job?					
Additional Comments?					

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