

**The Relationship between Classroom Assessment  
Practices and Student Motivation and Engagement**

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## Introduction

Assessment is becoming increasingly important in classrooms as school systems respond to federal and state testing mandates. The increasing emphasis on assessment surely impacts student outcomes such as engagement and motivation, and ultimately achievement. While it is clear that classroom assessment is receiving more attention as a critical component of teaching that directly affects student learning, there is still a lack of systematic research that addresses many classroom assessment issues. There is some evidence that effective formative assessment enhances achievement (Black & Wiliam, 1998), and that certain grading practices result in greater student motivation and achievement (Brookhart, 2004b). However, researchers have not sufficiently investigated how classroom assessment and grading practices should be categorized, and have not demonstrated strong relationships between these practices and student self-efficacy and motivation at different grade levels.

### Overview of the Conceptual Model

The following conceptual model provided the foundation for this study and was based on the self-system model of Connell and Wellborn (1991), as well as Eccles and Wigfield (1995) (see Figure 1). Both of these models highlight important links between the context, self, action, and outcomes in explaining the role of motivation and its relationships to other key educationally related variables.

Research has demonstrated a link between teachers' focus on mastery versus performance goals and teacher practices. According to Ames (1992) teachers' instructional practices and strategies have an impact on the types of goals student develop with regard to academic tasks. Specifically, the way students are evaluated and how students' achievements/progress is recognized can directly influence whether students' form a mastery or performance goal orientation in the classroom. Midgley, Anderman & Hicks (1995) also support

a link between teachers' goal orientations, their instructional practices and student' self-system processes such as self-efficacy.

It is proposed that *teachers' grading and assessment practices* function as the context variables in the model. These include the type of assessments teachers use; their grading criteria, including whether effort is graded; the type, frequency, and manner in which teachers provide feedback; and the opportunities teachers' provide for students to self-evaluate or self-monitor their progress toward goals. Based on existing literature, teachers' grading and assessment practices are hypothesized to directly influence students' goal orientations because they communicate information to students about the relative importance placed by teachers on mastery versus performance goals in the classroom. Finally, the impact of grading and assessment practices on student motivation is also partially mediated by students' self-system processes, operationalized in this study as students' general self-efficacy beliefs with regard to classroom tasks.

In this study, student motivation was operationalized as the goal orientations (or reasons why) students choose to participate in classroom activities and complete academic tasks. Research on goal theory has identified two categories of goals – mastery and performance, although there is debate as to whether these are mutually exclusive categories or opposite ends of a continuum. In addition, researchers have distinguished between performance-approach and performance-avoidant goals.

According to the self-system model, student motivation influences student outcomes such as academic achievement not directly, but indirectly through the engagement of students in the classroom. Student participation in and behavior during academic tasks are believed to be the mechanisms through which students' goal orientations impact academic outcomes.

In the current model, the behavioral component of *student engagement* was the focus. Specifically, academic behaviors such as student effort, initiative-taking, attentiveness, participation, and persistence are operationalized. These behaviors have been identified most often in the literature as being those impacted by student motivation and are those that show the most consistent relationships to academic outcomes such as grades, achievement and school completion. Academic behaviors such as those identified are believed to be the overt actions students take with regard to academic tasks and are expected to be directly influenced by whether students have mastery or performance goals, and low or high self-efficacy. It is also postulated that they are indirectly influenced by the types of assessment (and learning) tasks presented by teachers; as well as how they are presented. Exactly which (as well as how) academic behaviors are influenced by students' goal orientations and teachers' grading and assessment practices have not been firmly established in the literature. Given the importance of student engagement in general, and academic behaviors in particular, as well as the wealth of education literature promoting different strategies to foster student engagement, it is important that we have a clear sense of what personal, instructional, social, and contextual factors affect 'what students do' in the classroom.

Finally, in an era of accountability, it is proposed that these teacher practices, student factors, and academic outcomes are related. Prior research has identified strong, consistent positive relationships between academic behaviors such as effort, initiative-taking, attentiveness and academic achievement regardless of how achievement has been measured. The current model defines academic achievement in terms of performance on the end of year Virginia Standards of Learning Tests (SOLs). Also, the use of subject area standardized tests in the middle and high school grades allows us to focus on students' self-efficacy, goal orientation, and academic behaviors in a specific domain.

## Literature Review

### *Assessment practices*

*Selected or constructed response.* The first dimension is whether the test items are selected-response or constructed response. Selected-response assessments are those in which students select an answer from choices that are provided (e.g., multiple-choice, binary choice, and matching). Constructed response assessments require students to supply an answer, whether as a short answer item or essays, projects/research, and performance assessments. The research demonstrates that there is considerable variation in the extent to which different kinds of assessments are used across different disciplines (McMillan, 2001, 2002).

The literature suggests that motivation is generally greater when the constructed response format is used (Brookhart & Durkin, 2003; Ormrod, 2006). Generally, but not always, the students rated themselves higher on mastery goals after completing performance assessments. There is some indication that constructed response items and performance assessments are related to an increase in student mastery goal orientation and self-efficacy, while traditional objective tests are negatively related to self-efficacy and mastery and performance goals (Brookhart et al., 2003).

*Student Self-Evaluation.* Student self-evaluation, self-monitoring, or self-reflection, typically requires students to rate their own performance against an established rubric or set of standards to determine what they need to do to enhance their understandings, skills, and performance. Shepard (2000) summarizes research that indicates that students who practice self-evaluation are more motivated and interested in substantive feedback than students who do not self-evaluate. Shepard maintains that self-evaluation improves students' responsibility for their learning. As students internalize the criteria for evaluating their work they are better able to connect their performance with their preparation, which enables the development of an internally

oriented, controllable sense of self-efficacy (Stiggins, 2005). The research suggests that when students self-evaluate, they stay focused on what they need to do to improve. They are more motivated and have a strong sense of self-efficacy. Some research finds that this is especially true for low ability students (Ross, Rolheiser, & Hogaboam-Gray, 1998).

*Authenticity.* A third important dimension of classroom assessments is the extent to which the item and/or task is authentic. Authentic assessment reflects “real world” issues, problems, and situations, and usually requires students to apply deep understandings. Assessments that are not authentic typically use content that does not relate to students in a meaningful manner. For example, science can be assessed using multiple-choice tests that concentrate on basic terms (unauthentic) or through a performance assessment project in which actual data are gathered from a known location (authentic).

Authentic assessments enhance motivation by emphasizing real life activities or situations, which increases student perceptions of the importance, utility, and value of the content being assessed. It is well-established that these perceptions are essential to motivation because they represent a dimension of motivation consistent with the expectancy-value framework (McMillan, 2004).

*Level of Difficulty.* A fourth dimension relates to the difficulty of the assessment. It can be theorized that assessments that are either too easy or too hard mitigate student motivation (Bonesronning, H., 2004). In contrast, moderately difficult assessments improve motivation (Pintrich & Schunk, 2002). Tasks that are too easy do not challenge students nor, when successfully completed, do not inform the student about how they have changed or developed. Tasks that are too difficult may cause students to become confused and frustrated, resulting in less effort. Moderately difficult tasks encourage student attributions to effort, which enhances

student self-efficacy. Motivation is greatest, then, in situations in which students learn, by applying some effort, that they are capable of successful performance.

*Formative Assessment.* A fifth way to categorize assessment practices is the extent to which formative assessments are used. Formative assessment is typically informal and occurs during instruction as students learn. Formative classroom assessment has been identified as a set of activities that is undertaken by teachers to be able to design instruction to meet student needs and provide feedback to students to enhance their motivation and learning (Black & William, 1998; Brookhart, 2005; Chappuis & Stiggins, 2002; McMillan, 2003). These assessments include informal observation, quizzes, homework, and oral or written classwork. Evidence of student learning is used on a daily basis to inform teachers about student performance as learning occurs. Research finds empirical support for a positive relationship between the use of effective formative assessment and student motivation and achievement (Black et al., 1998; Brookhart, 2005)

*Teacher Feedback.* Finally, feedback has long been regarded as an essential component of the instructional and assessment process and is broadly recognized as a mechanism to support student learning. The specific nature and content of feedback teachers provide determines the impact it has on student learning. Comments that are specific, informative and tailored to each individual student's performance have been shown to be most effective in promoting improved outcomes. This type of feedback provides students with specific information about the positive aspects of their performance as well as the target areas for improvement while including suggestions for how they can enhance their performance. Ovando (1992) further described meaningful teacher feedback as having the following characteristics: relevant, immediate, factual, helpful, confidential, respectful, tailored, and encouraging. Research has shown that specific, meaningful teacher feedback is a powerful tool classroom teachers can employ to

support student learning and enhance achievement and subject-specific attitudes (Butler, 1987; Elawar & Corno, 1985; Krampen, 1987). On the other hand, feedback that emphasizes grades, praise, and how performance compares to that of classmates has a negative effect on student attitude and achievement. The effects of feedback are particularly noticeable for lower ability students.

### *Grading Practices*

Once information about student proficiency is gathered through the application of appropriate assessment techniques, teachers evaluate student work, assign grades and give feedback to students. The aspects of grading with the greatest relevance to motivation can be organized into two areas: the nature of the comparisons used and factors that are used by teachers to determine grades.

### *Bases Used for Comparison*

Brookhart (2004) points out that there are essentially three methods for determining grades – criterion (standards) referenced, norm-referenced, and student self-reference. The recent emphasis on standards promotes a criterion-referenced basis for comparison in giving grades. With this approach, grades are determined by comparing achievement to established levels of proficiency rather than with the achievement of other students. Thus, if all students reach the level of proficiency designated as A, all students would achieve that grade. There is some evidence that using criterion-referenced approaches results in stronger motivation as well as higher achievement (Brookhart, 2004). Criterion-referencing seems to be most effective for motivation when standards are high and attainable with moderate effort (Crooks, 1988). This approach also allows for opportunities for assessment retakes so that there are multiple opportunities to achieve a higher grade.

In norm-referenced grading, grades are determined by how students compare to each other. High grades are given to students who perform the best, low grades given to students who perform poorest. Research suggests that heavy reliance on norm-referenced grading focuses motivation on performance goals (as opposed to mastery goals) by emphasizing competition and focusing on performance rather than competence or mastery (Shunk, 1995; Stipek, 2002; Stiggins, 2005).

#### *Factors Used to Determine Grades*

The literature on grading strongly supports the finding that teachers believe it is important to combine non-achievement factors, such as effort, ability, and conduct, with student achievement, to determine grades (Brookhart, 1993 & 1994; McMillan, 2001, 2002; Stiggins, Frisbie & Griswold, 1989). Measurement specialists often consider this a “hodgepodge” approach to grading (Brookhart, 1993; Cross & Frary 1996; Friedman and Manley, 1991; Frary, Cross & Weber, 1993; McMillan, 2001, 2002; and Truog and Friedman, 1996). Second, the literature supports the detrimental impact of using zero in the calculation of grades (Brookhart, 2004; McMillan, 2004; Stiggins, 2005). A zero reduces the accuracy of grades as a measure of achievement because it confounds behavior management and punishment with achievement. Third, the literature finds that there is a great amount of variation between teachers on the weight given to different grading factors (Brookhart, 1994; Cizek, Fitzgerald, & Rachor, 1995; McMillan 2001, 2002). Nevertheless, while descriptions of grading practices are plentiful, there is little research on the relationship between grading practices and student motivation. There is a strong research base with respect to the two major contributors to motivation (self-efficacy and importance, utility, and value), but not much about how specific assessment and grading practices effect these two components.

The use of performance-based or more authentic assessment tasks, incorporation of student self-evaluation, and provision of specific, meaningful feedback are all anticipated to promote mastery versus performance goals and improve students' sense of self efficacy, which also leads to more mastery-focused goal orientations. Classroom assessment tasks that are viewed as less competitively structured (e.g., more criterion-referenced, involving absolute interpretations) are deemed to be those most likely to foster mastery goals, promote self-efficacy and student participation, ultimately leading to enhanced academic achievement.

### *Student Motivation*

*Student Self-efficacy.* Self-efficacy refers to a person's belief that he or she has the capability to perform well (Bandura, 1989). A person with self-efficacy is more likely to take on a challenging task if he or she feels capable of completing it. According to Bandura, the stronger a person's self-efficacy is, the stronger his or her level of motivation, effort, and perseverance.

Some classroom assessment practices have been found to affect student self-efficacy. For example, the type of feedback that students receive can affect their self-efficacy. When students receive rewards contingent on performance rather than merely on task engagement, it increases self-efficacy because it indicates task mastery (Shunk, 1991). Shunk and Swartz (1993) argue that feedback about the value of a chosen strategy, and progress in mastery raised self-efficacy. In addition, students who had a process goal, and received process feedback, had higher judgments of self-efficacy on the post-test and showed higher scores on the skills assessed.

Rodriguez (2004) examined the role of classroom-level assessment practices on student achievement, and looked at the mediating roles of student perceptions of self-efficacy and effort. The study found that for students who were embedded in classrooms that relied heavily on the use of teacher-made objective tests, the positive effects of perceived self-efficacy on

achievement was reduced, and students attributed success or failure to uncontrollable variables (e.g., doing well is a function of natural talent and good luck, rather than studying hard).

### *Self Efficacy and Achievement Motivation*

Some research suggests that self-efficacy may mediate students' achievement goal orientations (Middleton, Kaplan & Midgley, 2004; Skaalvik, 1997, Wolters, 2004). Pintrich and DeGroot (1990) found that students who reported higher self-efficacy also reported higher levels of interest and preference for mastery goals, as well as more frequent use of self-regulatory strategies. In addition, both self-efficacy and intrinsic value were positively correlated with all measures of academic performance (seatwork, exams/quizzes, essay/reports, and semester grades). However, when included in regression analyses with self-regulation and cognitive strategy use, these variables were not significant predictors of academic performance. Although this result contradicts prior findings suggesting that self-efficacy has a direct relationship with achievement (see Lau, Roeser, & Kupermintz, 2002); it supports the idea that "how" students engage in academic tasks mediates the relationship between self-efficacy and academic outcomes.

The existing research clearly identifies the importance of self-efficacy to students' motivational goals, as well as academic achievement. In addition, some evidence indicates that the types of assessment tasks, along with teacher feedback are important determinants of students' self-efficacy. However, it is unclear how other assessment and grading practices influence self-efficacy. Finally, empirical research has not yet established the mechanisms whereby self-efficacy affects motivation and subsequent achievement, though a mediational role is suggested by some research.

### *The Goal Theory Perspective on Motivation*

While numerous theories of motivation exist, social-cognitive theories, such as goal theory have much to say about how school environments and teacher practices affect student motivation to learn. Goal theory is so powerful that it has formed the basis for classroom level (e.g., Ames, 1992c) and school level (e.g., Maehr & Anderman, 1993) reforms. Anderman and Maehr (1994) argue that goal theory is one of the more prominent developments in motivation research since the mid 1980s.

The goal theory perspective (Anderman et al., 1994) suggests that students' goal beliefs are influenced by school context variables that shape the kind of tasks given to students, how they are presented, and how students' ability is conveyed, etc. In turn, the goals that students adopt are related to student self-efficacy, the cognitive strategies that they use, student engagement, student affect, etc. While a number of goals can be associated with schooling, including social goals, the research has focused primarily on two types of goals. Those goals are discussed in the literature as task, mastery, or learning goals and as ability, performance, or ego goals. Recently authors have separated ability goals into two types: performance-approach goals and performance-avoidance goals (Pintrich, 2000b; Midgley, Kaplan, & Middleton, 2001). As Anderman et al. (1994) point out, mastery and performance goals are not mutually exclusive as if at opposite ends of a continuum. Instead, they are best understood as orthogonal.

#### *Mastery Goals*

Students with mastery goals typically show a cluster of characteristics that are considered most adaptive to learning. Elliot and Dweck (1998) argued that students with mastery/learning goals work to develop their abilities. They are more likely to choose tasks of moderate difficulty, and are willing to make mistakes in the quest for mastery. When learning/mastery goals were highlighted, children's beliefs about whether they had high or low ability were

irrelevant (Elliot et al, 1998). In both cases, students sought to increase competence by taking on challenging tasks, using opportunities to increase skill, developing more sophisticated problem solving abilities, and accepting mistakes as opportunities to learn.

Maehr and Anderman (1993) found that students with task focused goals learn for the sake of learning, and show interest in problem solving and challenge. They are more likely to strive to understand the material and use effective learning strategies. Furthermore, Midgley, et. al. (2001) argues that students with mastery goals are more interested in developing their competence and gaining understanding and insight.

### *Performance Goals*

Students with performance goals work to maintain positive judgments of their ability from teachers, parents, and peers. These students are more likely to take on easy tasks and avoid making mistakes. When mistakes are made, students develop debilitating responses, including giving up (Elliot et al., 1998). They also focus on demonstrating their ability, doing better than others, and getting high grades (Midgley, et al., 2001). They were more likely to use surface level strategies and avoid problem solving and critical thinking. These students also were less likely to pursue challenging activities and tasks (Maehr et al.,1993). Performance goals are consistently associated with the use of self-handicapping strategies, the avoidance of novelty and challenge, the avoidance of help seeking behavior, the use of cheating, and a reluctance to cooperate with peers (Midgley et. al.).

The literature has also found that performance goals do appear to have some positive outcomes in some contexts. Hence some authors have considered separating performance goals into two types: performance-approach goals and performance-avoidance goals (Pintrich, 2000b).

Furthermore, the most recent adaptation of the PALS instrument distinguishes the two (Midgley, Maehr, Hruda, Freeman, Gheen, Kaplan, Kumar, Middleton, Nelson, Roeser, & Urdan, 2000).

Students with performance approach goals are more concerned with doing better than others, demonstrating their ability and competence. Some research finds that performance-approach goals alone, may be adaptive for high ability students (Bergin, 1995; Smiley & Dweck, 1994). Other research suggests that performance goals are less detrimental to elementary aged students, and this may reflect the distinction between performance-approach and performance-avoidance goals (Midgley et al. 2001). Midgley et al. conclude that the data in support of the adaptive nature of performance-approach goals is inconsistent, and needs further research.

Students with performance avoidance goals are more concerned that they not look incompetent or stupid. They tend to avoid tasks that will lead to negative judgments of their ability. Students with performance-avoidance goals have consistently been found to have maladaptive approaches to learning (Elliot & Harackiewicz, 1996; Skaalvik, 1997).

While the need for two types of performance goals is mixed in the literature, clearly additional research will be helpful. In addition, research should examine grade and gender differences and how students perform with a combination of goals (Anderman, Austin, & Johnson, 2000).

#### *Developmental Issues within Goal Theory*

The negative effects of performance goals for elementary-aged students was observed in a study by Anderman, Eccles, Yoon, Roeser, Wigfield, and Blumenfeld (2001). When teachers reported that they emphasized performance-oriented instructional strategies such as emphasis on high test scores and that students should perform as well as the best students, the valuing of mathematics and reading declined over the academic year. The negative effects of performance

goals are also noticeable with middle school students. For example, Anderman, Griesinger, and Westerfield (1998) noted that academic cheating may be related to performance goals.

Research indicates that as students move into adolescence, they endorse performance goals more and mastery goals less (e.g. Anderman & Anderman, 1999). This shift seems to be in response to changes in the expectations of schools and teachers, in that middle school teachers use instructional practices that induce performance goals more. Roesser, Midgley, and Urdan (1996) also found that students who perceived schools as endorsing performance goals also tended to endorse them as well. Similarly, when schools endorsed mastery goals, students tended to do well.

Little research has followed students across the transition into high school (Anderman, Austin, & Johnson, 2001). One exception is Gheen, Hruda, Middleton, and Midgley (2000, as cited by Anderman et al., 2000) which found that students reported a decrease in their perception of an emphasis on performance goals, and some reported an increased emphasis on mastery after the transition to high school.

#### *Effects of Assessment Practices on Student Goal Orientation*

The evaluation of student learning is one of the more salient instructional practices that can influence students' motivational goals. Ames (1992a) identifies evaluation strategies that support mastery goals:

1. evaluate student progress, improvement and mastery
2. give students opportunities to improve; treat mistakes and errors as part of learning
3. vary methods of evaluation, including only feedback for some assessments rather than grades
4. make evaluation private

Anderman & Midgley (1998) add others as they discuss implementation of a mastery/learning focus in middle schools.

5. use alternatives to tests, such as portfolios,
6. grade for progress and improvement and involve students in determining their grades

It is not just how students are evaluated that is important, but also the type, form, and purpose of evaluation. As Mac Iver (1987) notes, students' perceptions and interpretations of the meaning or intent of the evaluation may be more important than what is actually done. He suggests that evaluation systems also need to:

1. reduce normative evaluation approaches (the most common form of evaluation in school)
2. avoid announcing the highest or lowest grade,
3. avoid only posting perfect papers

Kaplan and Maehr (1999) suggest that evaluation strategies should measure progress and improvement over past performance. They should be based on specific and absolute standards. They should reward students who collaborate across groups. Evaluative criteria should employ a variety of practices that reduce feelings of threat and reward students who learn from their mistakes.

Stefanou and Parkes (2003) found that when students had paper and pencil tests and performance assessments, it tended to foster mastery goals. Interviews suggested that students were concerned about how performance assessments would affect grades. They also preferred paper and pencil tests because they were a familiar format that indicated mastery to them. With performance assessments the students seemed concerned about the ambiguity of what the teacher wanted and how it would affect their grades. When grades were removed from the equation, students showed more favorable orientation to performance assessments. "What seems to be emerging is that it may not be so much the assessment format per se that influenced the goal

orientation of students but the assessment format in interaction with the stakes or consequences attached to the results of the assessment (p. 158).”

Meece (1994) found that teachers whose students were high in mastery goals promoted the importance of meaningful learning in their classrooms. Students were expected to understand the material, synthesize it so that they could make sense of it, and apply it. Grades and extrinsic incentives were rarely used in an effort to motivate students. In low mastery classrooms a high emphasis was placed on grades and performance.

Evaluation practices have been found to have a clear impact on whether students adopt mastery goals or performance goals. In general, research suggests that teachers should avoid practices that compare students with one another, emphasize student progress, improvement, or mastery, and use more criterion referenced approaches.

### *Student Engagement*

Current research identifies three distinct components of student engagement – behavioral, affective, and cognitive (see Fredericks, Blumenfeld & Paris, 2004; Furlong, Wipple, St. Jean, Simental, Soliz, & Punthuna, 2003). The behavioral component is comprised of both academic (e.g., effort, attentiveness, initiative-taking) and social behaviors (e.g., disruptiveness, working collaboratively with peers) (Finn, Pannozzo, & Achilles, 2003; Jimerson, Campos & Grief, 2003; Johnson, Crosnoe & Elder, 2001). The affective component is linked to students’ feelings about school in general, but it is also specifically tied to the classroom and peers. Typically, it encompasses beliefs about such things as belongingness, valuing, attachment, and identification (Goodenow, 1993; Maddox & Prinz, 2003; Voelkl, 1997). The cognitive component, relates to students’ thought processes, usually in relation to specific academic tasks or content (Newmann, Wehlage, & Lamborn, 1992).

For this study, the behavioral component, specifically academic behavior of student engagement is the focus. Behaviors such as paying attention in class, putting more than the minimal levels of effort into assignments, independently initiating participation in academic tasks, and continuing to work through tasks in the face of difficulty all directly impact students' learning of academic content. These behaviors facilitate the construction of new knowledge and understanding by helping students interact with content during academic tasks; and are those frequently referenced in the literature in relation to student motivation.

The majority of research on academic behavior has focused on the relationship between student (in)attentiveness and academic achievement. Both large- and small-scale studies have demonstrated that student attentiveness is associated with higher student achievement; and this is consistent across all grade levels (Finn, Pannozzo & Voelkl, 1995; Marks, 2000; McDermott & Beitman, 1984; Peterson, Swing, Stark, & Waas., 1984; Rowe & Rowe, 1992, Wentzel, 1993). In addition, these relationships remain consistent regardless of whether student engagement is rated by teachers or outside observers (see Alexander, Entwisle, & Dauber, 1993; Finn et al, 1995; Rowe et al., 1992; Wentzel, 1993) or student self-reports (see Marks, 2000). Additionally, Rowe et al. (1992) and Marks (2000) both found that the relationship between academic behaviors and academic achievement were typically stronger as students got older.

#### The Relationship of Student Engagement to Student Motivation

In this study, student engagement and motivation are conceptualized as distinct, but related constructs. Motivation has been defined as students' goals or underlying reasons why they choose to participate in classroom activities and complete academic tasks. Engagement *is* the participation in classroom activities and academic tasks on some level, be it behaviorally, affectively, cognitively, or some combination of these. Prior research has found that whether students adopt mastery/task versus performance/ability, the oriented goals are significantly

related to the amount of effort, persistence, initiative-taking, etc. the students demonstrate during academic tasks.

#### Research Questions

1. How do teachers determine grades?
2. What types of assessment practices do teachers use?
3. What are teachers' goal orientations?
4. What are student self-reported levels of engagement, self-efficacy, and goal orientation?
5. What are student perceptions of their teachers' goal orientations?
6. What is the relationship between teacher grading practices and student motivation?