A New Framework for School Belonging: The Importance of “Fitting In” and “Standing “Out”

Dissertation

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Abstract

This dissertation is a collection of essays and empirical studies. A conceptual manuscript is followed by two empirical investigations that examine how the social dimensions of students’ formal schooling experiences are linked with the academic dimensions of their formal schooling experiences. Not only are there stand-alone contributions for each manuscript. There also is a central theme which cuts across each of these chapters: If leveraged properly, students’ concerns for identity and social interaction might serve as powerful resources—and not distractions—for fostering academic motivation.

The conceptual essay explains how identity and identity formation processes enhance our understanding of the term, school belonging, and its relation to achievement motivation. School belonging is discussed as an “umbrella” term which houses a handful of student relations constructs including social attachment. In this framework, a student’s motivation is tied to her or his strivings to strike an optimal balance between “fitting in” and “standing out” at school. Within a group—such as a clique, classroom, or athletic team—students’ motivation will be more strongly aligned with the norms, standards, and cultural mores of the group as students are able to strike this optimal balance through interactions with other group members. When students do not feel this optimal balance, students’ motivation is likely to reflect strivings to achieve this equilibrium—by enacting behaviors that will help them satisfy their thwarted need for assimilation or
differentiation. This framework introduces new constructs, new linkages, and new predictions that complement literature on interpersonal bonds and friendships, thereby incorporating a new theoretical lens to the study of student relationships that co-exists with other constructs under the umbrella of school belonging. The broader impact of this framework is discussed in terms of relevance for future research and education reform, with a special emphasis on applicability to social-psychological interventions.

The first empirical investigation in this dissertation explored synergism between students’ perceptions of similarity and uniqueness. Specifically, does standing out at school help or hinder the facilitation of achievement motivation and well-being that researchers have come to expect of adolescents who are able to fit in with others in their academic community? This investigation consisted of 702 high school students in their English classrooms from a suburban high school in the Midwest. Using latent class cluster analysis, it was found that students could be classified into one of three distinct psychological profiles based on the extent to which their needs to fit in and stand out had been met within their English classrooms. Compared to students whose needs for similarity and uniqueness were not met, those students who were fulfilled in terms of their needs to both fit in and stand out described themselves—to a greater extent—as members of their classroom’s academic community. In turn, these stronger academic identities were associated with more positive emotions (i.e., enjoyment and pride), less negative emotions (i.e., less boredom, shame, and hopelessness), and greater value for learning English. Systematic differences also emerged with respect to students’ background characteristics and the (dis)satisfaction of their needs to fit in and stand out.
Implications for the intersection of race, socioeconomic status, and school belonging are discussed. Also discussed are the contributions of this manuscript to research on identity formation, uniqueness, motivation, and well-being during adolescence.

The second empirical investigation, conducted in a STEM-focused high school (Science, Technology, Engineering, and Mathematics), was aimed at understanding whether the importance students placed on academic tasks could be explained by *adaptive social mediums*—defined as the extent to which the activities that students do before, during, and after their math classes are perceived as a means by which students can express commonalities and differences between themselves and their classmates. One hundred students were asked about 18 activities, such as doing homework, solving problems on the board, being on time, taking tests, and attending after-school tutoring. When separating the measurement of assimilation from the measurement of differentiation, and when accounting for motivational climate factors—students’ perceptions of their teacher’s emphasis on developing and demonstrating competence—positive associations were found between students’ ratings of the importance of these tasks and the extent to which the tasks were seen as satisfying assimilation needs. In addition, positive associations were found between ratings of task importance and the extent to which the tasks were seen as satisfying differentiation needs. Importantly, this cross-sectional, repeated-ratings approach highlights that a student can be motivated differently for different activities within a single academic subject (e.g., taking notes versus asking questions during math class), and this motivation may be attributed to the student’s social construal of the task at hand. This study suggests that students’
engagement in activities that are typically characterized as “academic” may also be inherently “social” in nature.

The psychological experience of “fitting in” and “standing out” can serve as the basis for many areas of future research due to its broad applicability to socially-related achievement issues including racial and gender discrimination, peer victimization, the instruction of English-language learners, the inclusion of students with disabilities, and the instruction of exceptionally-gifted children. Improving our understanding of students’ efforts to fit in and stand out in schools is therefore germane to many problems facing education systems today. As such, this work not only underscores the importance of this framework for understanding adolescent motivation in two fundamental academic domains (i.e., English and Mathematics), but also serves as a springboard for future studies aimed at disrupting patterns of underachievement and emotional turbulence during adolescence.
Dedication

To my brother, Jamal M. Gray, whom I love dearly.
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Publications


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Chapter 1

Setting the Stage for a New Take on School Belonging

Within the metanarrative of high school education, there remains a focus on achievement in the form of student performance and graduation rates. Policy discussions on elevating student performance focus on important issues such as accountability systems (Jacob, 2005), school choice (Berends, Springer, Ballou, & Wallberg, 2009), and performance-based school funding (Hanushek & Lindseth, 2009). But what of the informal high school education adolescents receive by way of their social interactions with one another? Should these factors even be on the radar of policy makers considering the struggle of America to “catch up” with other developed nations in terms of high school literacy and STEM (Science, Technology, Engineering, and Mathematics)?

Bearing in mind that negative social experiences in school can impair academic progress and produce negative emotional responses (Crosnoe, 2011; Juvonen, 2007), it would seem that informal education experiences are formal educational issues.

A consideration of adolescent motivation is also important for understanding scholastic achievement. Many studies continue to point out important performance gaps among students based on socioeconomic status (Educational Testing Service, 2009), gender (Fryer & Levitt, 2010), ethnicity (Fryer & Levitt, 2004), and prior test performance (Strand, 2010). These studies indeed highlight the continued existence of
achievement inequality, but how do these studies move us toward an understanding of how low-achieving students might achieve more, and ways that high-achieving students might achieve even higher? A focus on academic excellence for all students in this country begins with the belief that all students are capable of accomplishing academic feats that might appear largely improbable when drive, goals, values, and needs go unconsidered. In some respects, motivation is an outcome in its own right. It is only through an understanding of motivation that we grow to appreciate adolescents’ heroic efforts to hurdle academic difficulties when they undoubtedly arise, and ultimately outperform their fated aptitude.

Two hallmarks of the adolescent experience are their social interactions (Juvonen, 2007) and questions of identity (Harter, 1998). Those who have ever conversed with high school students about their in-school experiences may have gathered that adolescents are largely affected by their social interactions. For adolescents, social desires are not just concerns—they are a priority. In addition, the demands of physical maturation and real-world decisions lead adolescents on a search for answers to the question of Who am I? (Erikson, 1968). Those who seek to understand achievement patterns among adolescents must, at some point, consider these dimensions.

Work on school belonging has shown that students who feel accepted, respected, included, and supported in school (Goodenow, 1993) generally have greater motivation, better grades, and greater psychological well-being (Baker, Terry, Bridger, & Winsor, 1997; Freeman, Anderman, & Jensen, 2007; McMahon, Parnes, Keys, & Viola, 2008; Pittman & Richmond, 2007; Roeser, Midgley, & Urdan, 1996). Identity research has
shown that students are more likely to engage scholastically when they perceive 
achievement in a particular domain to be consistent with how they define themselves 
(Eccles, Barber, & Jozefowicz, 1999; Elmore & Oyserman, in press). One question that 
emerges from reading this literature is of whether an understanding of school belonging 
and identity, when integrated, might provide new directions for understanding and 
impacting achievement motivation.

School belonging is typically characterized as a student’s perceptions of fitting in, 
or social attachment (e.g., Martin & Dowson, 2009), with its opposite being rejection, 
explains that working through the social terrain of high school is more than a life phase 
which must be reconciled during adolescence. These formative experiences, Crosnoe 
argues, also have broader impacts on educational outcomes. Crosnoe explains feeling 
different in high school as counterproductive to healthy identity development. In turn, the 
discomfort associated with standing out leads to a number of downstream effects on 
mental and physical health, instances of risky behavior, and academic underperformance. 
In this way, fitting in during high school is positive for adolescents both socially and 
academically, but standing out has a negative impact on these outcomes.

Other perspectives view being different in a positive light (Snyder & Fromkin, 
1980), and even as a universal human need (Vignoles, 2009). From this vantage point, 
fitting in is less about relationships and more about similarity. For these scholars, the 
identity benefits from social interactions are strongest when people are able to feel or
perceive some degree of similarity and some degree of uniqueness at the same time (Brewer, 1991). Thus, being able to fit in and stand out provides clarity to individuals searching to define themselves (Snyder & Fromkin, 1980; Vignoles, Chryssochou, & Breakwell, 2000). This perspective, however, remains absent from conversations on what it means for students to perceive a sense of “belonging” in school. I adopt this perspective in my dissertation—proposing that feelings of similarity and uniqueness are ways of thinking of belonging which also contribute to identity formation, in addition to scholastic engagement and psychological well-being.

The collection of essays and empirical studies in the following chapters will serve as the groundwork for a program of research on fitting in and standing out—portraying potential pathways for disrupting patterns of underachievement and emotional turbulence in high school settings. The first essay (Chapter Two) is a conceptual formulation of the dynamic construction of adolescents’ on- and off-task behavior in school. Both behavioral patterns may be explained, at least in part, by their strivings to fit in and to stand out. I argue for school belonging as an umbrella term which houses a number of student relations constructs. Under this umbrella, I draw conceptual distinctions between social attachment dimensions and constructs of similarity and uniqueness. The two empirical studies in Chapter Three and Chapter Four are initial investigations of the importance of both fitting in and standing out, with a focus on the most fundamental academic domains—English and Mathematics. The question of the first study (Chapter Three) is of whether being able to fit in and stand out at the same time has affordances for identity, motivation, and emotion. I describe students based on their in-the-moment
satisfaction of how similar they feel to, and how unique they feel from, other students in their English classrooms. Then I test whether the simultaneous satisfaction of the needs to fit in and stand out is linked with academic identity for Language Arts, and in turn, whether this greater identification is linked with stronger motivation and more positive emotional experiences in the classroom. The question in Chapter Four is whether students might strive to achieve academically even when their social needs are not satisfied. Within the context of mathematics classrooms at a STEM-focused high school, I assess whether students place more importance on activities that they perceive as potential vehicles for satisfying their needs to fit in and stand out. The final chapter provides an overall picture of the conceptual essay and the two empirical essays.
Chapter 2

A Balancing Act:
The Importance of “Fitting In” and “Standing Out” for
Students’ Motivation in School

At its best, motivation research serves the public interest by helping educators produce future innovators and leaders—the very individuals who will determine the quality of human life in generations to come. Motivation frameworks explain the psychological forces operating behind student engagement, persistence, resilience, and ultimately, achievement. Educators apply strategies and tactics gleaned from such research in efforts to produce both proximal and distal academic success among students.

Motivation is the energizing and directing of behavior (Elliot, 2010). In schools, the factors operating behind students’ behavior can lead them to engage in behaviors that are, at times, compatible with high scholastic achievement. At other times, the factors operating behind students’ behavior at school can lead them to engage in behaviors that are incompatible with high scholastic achievement. Put in everyday language: students may channel their efforts toward what a teacher deems on-task behavior, which might include working out problems on the board, explaining academic content to a neighboring student who is trying to grasp a concept, or showing up to class prepared to substantively contribute to the class discussion; at other times, students may channel their efforts toward what a teacher deems off-task behavior, which may include throwing paper
balls across the classroom, passing non-academic notes to a peer, heckling the teacher, gossiping, or vandalizing.

Is it possible for both on-task and off-task behavior to be energized by the same psychological forces? That is, might the very same underpinnings, at times, account for student behaviors that are both compatible and incompatible with high scholastic achievement? My goal in the following pages is to make the case for a new motivation framework that answers these questions and thus provides a deeper understanding of the role of social identity in academic motivation. Whereas some (but not all) of the concepts identified in the present framework are undoubtedly embedded within other frameworks, the recognition and understanding of such social and psychological forces as presented here will better equip educators and researchers to channel students’ efforts toward behaviors that are more likely to lead to scholastic achievement.

Explanations of how to turn students’ efforts toward high scholastic achievement may lie at the understudied intersection of motivation and identity. Kaplan and Flum (2009), like other identity-motivation researchers, have stressed that identity gives meaning to the activities we do. An implication of this assertion is that one’s identity can drive on- and off-task behavior. As guest editors for a special issue of *Educational Psychologist*, Kaplan and Flum encouraged special issue contributors to bridge the central aspects of achievement motivation and identity processes in an effort to “instigate a more programmatic approach by motivational researchers to explore these links theoretically and empirically” (p.74). The present manuscript, correspondingly,
contributes a discussion of motivation processes in school settings through a theoretical lens of identity.

The primary focus of this manuscript is on the (dis)comfort a student feels about how I see myself in relation to other students in a schooling environment. Discomfort may arise when a student feels ordinary, typical, or pedestrian—being just another face in the crowd, or a replaceable member of one’s clique, classroom, or school altogether. It is the feeling of being the proverbial “average Joe.” At times, feeling “regular” can lead a person to wonder, how am I different from everyone else? The discomfort associated with the salience of this question has motivational properties that have yet to be systematically articulated with respect to students’ achievement behavior in school settings. In the same vein, being very different from other students can also be an uncomfortable experience. When students see little overlap between themselves and others, they may feel like “outsiders” in the sense that being too much “out of the ordinary” poses a psychological threat regarding their membership in a clique, classroom, or school. In a group setting, students may circumvent feeling like an “outsider” or “average Joe” when they are able to fit in and stand out at the same time. The present framework explains the motivational significance of being too similar or too different from other students, as well as the motivational significance of striking a balance between the two. Specifically, it is argued that students respond dynamically to these social triggers. This framework is rooted the notion that groups, and the way groups make us feel about ourselves, give meaning to the behaviors we enact at a particular moment, in a particular context. Depending on whom we are around, our behaviors can be interpreted in different ways by ourselves and others.
This is the standpoint of a social identity theorist. Applying a social identity perspective to the study of student relations holds the promise of providing new strategies for addressing pressing concerns of educators such as, “If my student would apply even half the time and dedication that he spends on being a prankster to his intellectual pursuit, he would be a force to be reckoned with.” Scholars have discussed students’ academic and social perceptions as being related to one another (e.g., Butler, 2011; Juvonen, 2006; Kaplan, 2004; Patrick, Kaplan, & Ryan, 2011). The present framework takes this perspective one step further in its assertion that the terms “academic” and “social” may represent a false dichotomy with respect to the ways in which students construe achievement. Insofar as scholastic achievement and underachievement offer students an opportunity for social adjustment among peers, this framework can be implemented and further developed by researchers and educators to guide students’ interpretations of their achievement behavior in social terms that are conducive to academic success.

This framework is aimed at explaining the beliefs and behavioral patterns of high school and tertiary school students whose developmental phases of adolescence and emerging adulthood entail exploring and defining who they are (Keniston, 1971), through response feedback during social interactions (Harter, 1995), and experimenting to understand how they can situate themselves into society at-large (Erikson, 1968; Arnett, 2000). I provide an overview of the tradition of social identity to make clear the exact position I use to examine students’ motivation in this manuscript. Next, I discuss the contributions of the present framework to the social identity-achievement motivation literature. Specifically, I expand the predictions of optimal distinctiveness theory, a social
identity framework, by explaining how the needs to assimilate and differentiate can impact achievement motivation. I then show how this theoretical perspective complements current perspectives and predictions in the school belonging literature and provide illustrations of how aspects of this framework are manifest in students’ everyday schooling interactions. Last, I discuss how incorporating the present framework can spur both methodological and theoretical advancements in related research. I end by discussing the implications of this framework for education reform, with a special emphasis on the development of social-psychological interventions.

The Social Self: An Overview

Social interactions are not just something we do in everyday life. Social interactions are a large part of why we do what we do. At the intersection of philosophy and psychology lies a rich, historical literature that has stressed the important role that others play in the way we come to see ourselves. William James introduced the term the social self to describe how an individual's behavior can be inconsistent from one social context to the next. In the Principles of Psychology (1890), he writes:

Properly speaking, a man has as many social selves as there are individuals who recognize him and carry an image of him in their mind. To wound any one of these images is to wound him. But as the individuals who carry the images fall naturally into classes, we may practically say that he has as many different social selves as there are distinct groups of persons about whose opinion he cares. He generally shows a different side of himself to each of these different groups.
Many a youth who is demure enough before his parents and teachers, swears and swaggers like a pirate among his 'tough' young friends. (p. 294)

As James suggests, one is not the same person behaving in the same manner across every social situation. Groups matter. In fact, our construal of who we are can be so engrained in our connection to the groups we endear that threats to the group can be seen as a direct threat to our self. The notion of the social self has inspired over a century of conceptual and empirical accounts of the importance of the group on the individual. Charles Cooley, George Herbert Mead, and Max Weber expanded James's argument further. Cooley (1902) emphasized the looking glass self—the notion that we see ourselves through the eyes of others, try to interpret their reactions to us, and form interpretations of who we are based on this information. Similarly, Mead (1913; 1934) declared that we, as human beings, are not only acting in social situations, we are also being acted upon. In other words, others in my social environment are making impressions upon me. The way others relate to me has an impact on who I understand my self to be in that particular situation. Weber (1922) added that our interpretation of what our behavior means will dictate the behaviors that we enact and that the way we make meaning of our behavior is through interactions with others.

This early literature gave way to modernized perspectives on the social self. Psychological frameworks on the social self have adopted the term social identity to refer to the importance we place on the groups of which we are a part (Tajfel, 1981; Tajfel & Turner, 1979). Above and beyond mere group membership, people who actually identify with a particular group come to see the world through the lens of being a member of that
group. For example, in terms of race, a person's physical features may appear to be of African descent. While the term "Black" might be used to describe this individual, this phenotypic descriptor may or may not be an important aspect of the person's self-definition. If the term "Black" is, in fact, more than a label for the individual, the person's perception of the world can be viewed through their own understanding of what it means to be Black.

A person may identify socially with any group of which the person is a member. The term group, as used here, must be distinguished from its common connotation in education. Ordinarily, group or grouping may refer to an instructional strategy for placing students into teams or clusters based on relatively stable demographic descriptors including race, gender, or age. Here, consistent with the work of social identity theorists (Tajfel & Turner, 1979), the term is used more broadly to refer to two or more people who may be classified together for any reason. Indeed, students can share attributes in common such as gender, age, race, and ability; groups of students can also be classmates, athletes, bus mates, neighbors, bullies, nerds, Goths, foreign-exchange students, and so forth. Interaction within each of these groups has the potential to inform us about who we are in relation to others. Further, interactions with others have the potential to shape our beliefs and behaviors as others in our social environments make impressions on our own self-perceptions (Bouchey & Harter, 2005, Neblett, Smalls, Ford, Nguyên, & Sellers, 2009).

**Social Identity and Achievement Motivation**
The various ways that we answer the question, “Who am I?” are cognitive representations of how we perceive ourselves; these are known as identity—at times used interchangeably with the term self-concept (Markus & Wurf, 1987). Not only do identities dictate our perception and interpretation of events (Oyserman & Markus, 1998), they also have motivational consequences. Identities cause us to be more engaged in certain behaviors, and disengaged in others.

While stable aspects of identity exist, many psychologists also understand identity to be dynamic and situational (see Markus & Wurf, 1987 for a review). In an insightful discussion, Eccles (2009) explains personal and social identities as driving forces behind adolescents’ academic beliefs and behaviors and, ultimately, their career choices. Briefly, personal identities are traits such as being shy, indecisive, frugal, “smart,” a good student, or altruistic, which describe a person in individual terms. When we think of ourselves in personal terms, our personal needs and wants take priority, and we endorse beliefs and behaviors that reflect our personal values. This is an individuated conceptualization of the self (Brewer, 1991; Erikson, 1950). We know, however, that people sometimes think and act in ways that put others before themselves as they risk personal safety, economic security, and prestige for the good of others (Caporael, Dawes, Orbell, & van de Kragt, 1989). Such behavior is explained through the activation of a collective, or social, identity (Brewer, 1991; Brewer & Gardner, 1996). Eccles explains that as we identify increasingly with a given social group, we define ourselves in terms of group norms and standards. Consequently, we think and behave in ways that uphold our preexisting notions of what it means to be a member of an ingroup. In terms of student

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achievement, this means that the importance students place on being members of a particular peer group can influence their achievement patterns at school. Eccles contends, “thinking of collective [or social] identities in terms of these motivational-self related beliefs provides a powerful theoretical tool for understanding how membership in particular socially defined groups influences the motivational choices people make in their lives” (p. 87).

The question of “Who am I?” is fundamentally important to motivation, because the way we answer this question in a given context dictates the meaning we make of the world around us (Oyserman & Markus, 1998). This is evidenced in self-stereotyping research. For example, Sinclair, Hardin, and Lowery (2006) asked that students about their own math and verbal ability. When the researchers heightened the salience of students’ ethnicity or gender, students’ perceptions of their own abilities were more closely aligned with societal stereotypes about these social categories, as compared to when the identities were not made salient.

The way we see ourselves impacts our interpretation of our own behaviors as well as the behaviors we can potentially enact. Theoretical frameworks have emerged that attempt to capture the impact of students’ identities on their achievement motivation. One of the most pronounced frameworks in this area in recent years is the Identity-Based Motivation Model (IBM; Oyserman, 2007, 2009 Oyserman & Destin, 2010; Oyserman, Elmore, & Smith, in press). The IBM explains that an individual’s identity is responsible for how a person interprets environmental stimuli; specifically, humans make meaning of the world around us based on the norms of our salient identities. The IBM also
hypothesizes that the salience of our identities is dynamic and situational, and changes depending on environmental cues in our social context. Finally, our construal of whether effort on a given task is worthwhile depends on whether enacting a particular behavior is identity congruent. Using the IBM, Oyserman and colleagues have demonstrated support for the notion that students have a proclivity to behave in *identity congruent* ways. In other words, students are more motivated to achieve academically when achievement is consistent with the identities that are salient in students’ minds. Alternatively, when achievement behaviors are inconsistent with their current self-definition, or *identity incongruent*, students are much less likely to enact achievement-related behaviors.

This dynamic is conceptually parallel with what Eccles and colleagues refer to, within the Expectancy-Value model of achievement-related task choice, as task importance—the value that a person has for an activity because it is consistent with the person’s sense of self or identity, also known as attainment value (Eccles, 1987, 2005; Eccles et al., 1983; Eccles & Wigfield, 1995; Wigfield & Eccles, 1992, 2002). The theme underlying these perspectives is that individuals have a tendency to gravitate toward activities that reinforce the way they see themselves. Together, these perspectives provide a strong base for understanding the influence of social identities on achievement motivation.

Elmore and Oyserman (2011) manipulated adolescent students’ perceptions of their gender group’s earning potential and probability of graduating from college. By aligning the contents of their gender identities with academic success, the authors were able to increase their achievement motivation in terms of perceived long-term success in
life, as well as persistence on a novel math task. The authors also found that boys even performed better, relative to boys who did not receive an achievement is gender identity-congruent manipulation.

Still, there remain additional ways in which social identities are linked to achievement motivation. These additional linkages, which have not been previously advanced in other frameworks, have profound implications for students’ everyday schooling experiences, and thus warrant serious theoretical attention.

**Theoretical Advances in this Article**

The framework presented in this manuscript marries the perspectives of Eccles (2009) and Oyserman et al. (in press) with a perspective that explains how social interactions in and among groups impact human behavior: Optimal Distinctiveness Theory (Brewer, 1991). Brewer and colleagues have conducted several empirical investigations on the social triggers that cause individuals to think identify with groups (e.g., Brewer, 1991; 1993; Brewer & Gardner, 1996; Brewer, Manzi, & Shaw, 1993; Brewer & Pickett, 1999; Brewer & Weber, 1994; Brewer & Roccas, 2001; Pickett, Silver, & Brewer, 2002). The authors have found that the need to assimilate as well as the need to differentiate are fundamental contributors to this process. The fusion of this perspective with the IBM and Expectancy-Value frameworks helps us understand how interactions among students trigger the dynamic interplay between elements of identity and achievement motivation. The framework honors previous frameworks linking motivation with identity in that identity-congruent motivation can be both academically advantageous and disadvantageous, and predicts the conditions under which social
identities lead to either type motivational outcome. The framework advances these perspectives by tracing the notion of identity-congruent motivation back to basic identity elements that can lead to adopt social identities in the first place. The present framework also advances previous frameworks by highlighting direct linkages between these identity elements and achievement behavior.

Identity-congruent motivation is not necessarily motivation that is consistent with scholastic achievement. Indeed, high scholastic performance may be part of a student’s identity, thus making the pursuit of good grades and test scores identity congruent, and more likely to happen. Behavior such as truancy, gossip, fighting, and heckling can also be identity congruent. Thus, as a student identifies with a particular peer group whose norms are inconsistent with scholastic achievement, the student will be more likely to endorse the beliefs and behaviors of this peer group than if the student did not identify with this group. This point cannot be overstated. Though the goal is to increase achievement-consistent behaviors, researchers and educators should understand that increased identification with a particular peer group, or even classroom for that matter, does not necessarily lead to positive and values and achievement outcomes. Using a peer-nomination procedure, Graham, Taylor, and Hudley (1998) asked students which peers they most admired, respected, and wanted to be like. Females and White males held high achievers in high regard, whereas Black males were the only group who did not think highly of their high achieving peers. This study suggests that, for Black males in this sample, the achieving academically was a less meaningful aspect of their self-perceptions. The contents of a particular identity are one main factor that will dictate
achievement-consistent versus achievement-inconsistent motivational patterns (Eccles, 2009; Oyserman, et al., in press). The more we are able to understand and tweak basic elements (such as the contents of an identity) that direct a beliefs and behaviors in one direction or another, the more effective we can become at guiding students in ways that make them try harder, persist longer, and perform better in school.

Another aspect of social identity that deserves attention involves the underlying processes that lead to the adoption of a social identity in the first place. The notion of social identity has always rested on the assumptions that cues in a person’s social environment can heighten the salience of a particular social identity and that the salience of different social identities are context-dependent. According to Optimal Distinctiveness Theory (Brewer, 1991, a social identity can come to mind based on how we relate to others around us. At times, we can feel so different from others that we "stick out like a sore thumb." At other times, we can feel so similar to others around us that we question what makes us special or unique. There are also times in which we are able to fit in and stand out at the same time. In other words, we feel a part of a group because there is enough overlap between our own qualities or characteristics and those of others, but enough contrast that we are clearly able to distinguish our personal qualities from those of others.

Assimilation can be thought of as the degree of perceived overlap between a person’s own characteristics and those of others (e.g., appearance, behaviors, beliefs, physical qualities, abilities, attitudes, and so forth). Differentiation, then, is the degree of perceived contrast between a person’s own characteristics and those of others. According
to optimal distinctiveness theory (ODT), assimilation and differentiation are two equally important social identity needs. That is, perceptions of “fitting in” and “standing out” serve as indicators of how a person relates to his or her social environment. Thus, when students perceive themselves as “sticking out like a sore thumb” in their social context, they should want to assimilate with others. Likewise, when students perceive themselves as being very similar to others in their social context, they should want to differentiate themselves from others. Thus, these countervailing needs regulate one another; as one need becomes satiated, the other becomes active.

Achieving an optimal balance between assimilation and differentiation satisfies affiliation needs, while simultaneously allowing a person to maintain a sense of individual integrity (Brewer, 1991). This balance is referred to as optimal distinctiveness. The amount of perceived assimilation versus differentiation necessary for a person to feel a “balance” will vary by person (Brewer & Roccas, 2001), because humans differ in how much they personally value fitting in and how much they personally value standing out. That is, one person may have a high threshold for assimilation and low threshold for differentiation; for another person, the reverse may be true. Still another individual may have a moderate threshold for both social needs (for a graphical depiction and a more detailed account of factors influencing differences in optimal distinctiveness, see Brewer & Roccas, 2001). The central idea is that each individual requires some degree of assimilation and some degree of differentiation to function optimally in any given social setting, but the subjective feeling of being too similar to others or excessively different from others is an aversive experience. Contexts that make a person feel optimally distinct
should be favored over contexts that satisfy only one need and neglect the other. Thus, ODT predicts that an individual will be more likely to identify with a social group that makes the person feel optimally distinct (Brewer, 1991). That is, people are more likely to embrace the norms, standards, values, and mores of a social group as their own when their social needs are satisfied within this group.

The needs for assimilation and differentiation can take on different forms depending on whether comparisons are made between one’s ingroup relative to an outgroup, or whether comparisons are made between oneself to other ingroup members. Historically, balancing fitting in with standing out at the intergroup level is said to be responsible for the maintenance of social identities (Brewer, 1991). According to Brewer (1991), we define ourselves by—or identify with—the groups of which we are members when the size of these groups is large enough for us to feel included, but small enough that group members are sufficiently distinguishable from non-group members. On the other hand, balancing fitting in with standing out at the intragroup level was argued to be responsible only for the maintenance of personal integrity (Brewer & Gardner, 1996). Historically, ODT has separated itself from other frameworks of fitting in and standing out (Snyder & Fromkin, 198) through its focus on intergroup differentiation because, it was said that only through group size that the social identity benefits of reconciling assimilation and differentiation needs are manifest (Brewer & Gardner, 1996). But some researchers have petitioned for us to consider the possibility that identity needs play a role beyond the construction of the personal or social identity systems to which they have been historically assigned (Vignoles, Regalia, Manzi, Golledge, & Scabini, 2006). As
discussed later, researchers have identified specific ways in which individuals may differentiate themselves from other ingroup members in ways that do not forsake their cherished ingroup membership (Hornsey & Jetten, 2004). It is out of this campaign that the theoretical formulations presented in this paper have emerged.

Certain linkages between social identity and motivation remain to be articulated—particularly as these linkages relate to students’ motivation in school. I go beyond current conceptualizations of optimal distinctiveness theory to articulate the following: Insofar as assimilation and differentiation are human needs, individuals will act in service of satisfying these needs. In other words, becoming optimally distinct is not necessarily a passive process. I argue that students actively seek out ways of reconciling their social needs in school settings, and their achievement-related behavior can work in service of these needs, based on their construal of what certain behaviors mean for them socially. I further argue that it is possible for classroom contexts to make students feel optimally distinct as students perceive themselves to fit in and stand out among their peers—resulting in increased identification with a particular classroom or academic domain, and subsequent achievement-consistent behavior. These linkages give way to novel predictions that allow us to revisit previous educational research findings and see them from new vantage points. With a focus on high school and tertiary school students who are still establishing their personal identities and long-term goals, the present framework makes connections between students’ social needs and achievement motivation in ways that the school belonging literature is not currently equipped to provide.
An Optimal Distinctiveness Perspective on Achievement Motivation

A need is defined as a physiological or psychological requirement for the well-being of an organism (Merriam-Webster, 2011). Though other needs are certainly important with respect to their impact on human motivation (Connell, 1990; Connell & Wellborn, 1991; Deci & Ryan, 1985; Ryan & Deci, 2000; Skinner & Wellborn, 1994), both assimilation and differentiation are known as basic psychological human needs. The construct of assimilation is consistent with what scholars refer to as mere belonging (Walton & Cohen, 2011) in the sense that perceiving similarity between oneself and others is enough to induce a minimal sense of social connection to other human beings. Walton and Cohen (2011) describe this as “belonging distilled to its essence,” devoid of confounding variables (p. 85). As this need becomes thwarted, individuals can experience a host of negative outcomes, including cognitive impairments (Baumeister, Tenge, & Nuss, 2002) and health decrements (Baumseister & Leary, 1995).

Likewise, differentiation is also a basic psychological human need. For over a quarter of a century, scholars have documented the human desire to see ourselves as different from others (Codol, 1984; Lemaine, 1974; Maslach, 1974; Snyder & Fromkin, 1980). Vignoles and colleagues (Vignoles, 2009; Vignoles, Chryssochoou, & Breakwell, 2000) have described differentiation as a necessary precondition for establishing a sense of self-definition. Vignoles (2009) views distinctiveness as an existential need in the sense that, In order to know what I am, I must also know what I am not.

A more traditional view of distinctiveness is the notion that it is simply a Western cultural value (e.g., Triandis, 1995), or that the term implies a sense of individualism.
Whereas uniqueness can represent personal qualities (Eccles, 2009), evidence exists in support of the argument that uniqueness is a need cross culturally (Sedikides, Gaertner, & Toguchi, 2003; Vignoles et al., 2000) that can be satisfied through group affiliation. Hornsey and Jetten (2004) point out that within collectivistic cultures, the need for differentiation does not have to be satisfied in the individualistic terms that come to mind when we think of American, Australian, and Western European cultures (Fiske, Kitayama, Markus, & Nesbitt, 1998). Instead, individuals may also feel a sense of uniqueness through intergroup differentiation (Brewer, 1991).

Lynn and Snyder’s (2002) review highlights the motivational properties of the need for uniqueness. In particular, the authors note that when individuals perceive themselves as excessively similar to others, they experience negative affect and attempt to regain a sense of self-distinctiveness through expressing contrarian attitudes and behaviors. Additionally, people who perceive their ingroup as excessively similar may also try to satisfy their uniqueness needs by making their ingroup more exclusive (Pickett, Bonner, & Coleman, 2002).

The need for assimilation or for the need for differentiation can be excited when people think about the discrepancy or overlap between their own qualities and the qualities of others (Pickett, Silver, & Brewer, 2002). Empirical studies have highlighted several factors that can heighten the salience of either of these social identity needs in a given context. These factors include a person’s personality traits (DeWall, Baumeister, & Vohs, 2008; Imhoff & Erb, 2009), political ideology (Morrison & Miller, 2008), opinions and preferences (Spears, Ellemers, & Doojse, 2008), extra-curricular activity
involvement (Pickett, Bonner, & Coleman, 2002), ingroup size (Brewer & Weber, 1993), and others. To the extent that we can think about how we relate to people in these ways everywhere we go, the satisfaction of our needs for assimilation and differentiation will depend on our social context—one of these possible contexts being a classroom environment.

Indeed, students’ experiences at school can arouse feelings of excessive similarity or uniqueness. In terms of standing out, for example, a student may be much taller or shorter than his or her peers, more physically mature or underdeveloped, very cute or very ugly, skinny or obese. A student may endorse a different religious or political viewpoint from his or her peers. Academically, a student may be exceptionally gifted in a particular subject area, or really “behind the curve” compared to other students. Regardless of whether students are standing out in a good or bad way, the feeling of being too different can be an aversive experience. Feelings of excessive homogeneity—be they due to physical appearance, beliefs, or competence level—can also be aversive. Wearing school uniforms, receiving an “A” on an easy test that the whole class also aced, and being of the same political, religious, or economic background as every other student in a classroom can be enough to induce psychological discomfort. As with any need, students should actively seek out ways to satisfy their thwarted social identity need for assimilation or differentiation.

The process of satisfying social identity needs can be directly linked to a student’s motivation in school. As illustrated in Figure 2.1, students may think about how they relate to others around them. If a student feels inadequately assimilated with other
students, the student may search for ways to decrease this self-other discrepancy. The student may perceive certain behaviors, such as working out a math problem on the board or participating in class discussion, as being particularly beneficial for fitting in with other students in the classroom. A student may also perceive jokes and pranks as being beneficial for fitting in with other students. The student is therefore likely to engage in these behaviors insofar as these behaviors help the student satisfy this self-other discrepancy.

The need for differentiation operates in an identical fashion. If this need is thwarted, a student will search the environment for ways of distinguishing the self from others. It is important to note that the same behaviors of participating in class, working out problems, joke-telling, and pulling pranks can also be construed as helping the student stand out from other students. What matters here is the social meaning that the individual ascribes to a particular set of behaviors. Further, the interpretation of an individual’s behavior is bound to change with context. That is, the same behavior will not hold the same meaning around different groups of people. Additionally, these predictions apply to any particular social context. Whereas the frame of reference in the example provided is the classroom, the same processes should apply in a sports club, in a study hall, or to even a smaller clique or crowd inside of a classroom.
Figure 2.1. Graphical Depiction of the Optimal Distinctiveness Framework of Achievement Motivation.
The middle pathway in Figure 2.1 links optimal distinctiveness to the concept of identity-congruent motivation. Specifically, ODT explains that social identities will be strongest for groups that balance an individual’s need for assimilation and differentiation (Brewer, 1991). Oyserman (2007) explains that identities, which are situationally cued, can dictate our motivation by providing meaning to the behaviors that we can potentially enact. An individual’s subjective feeling of fitting in and standing out at the same time (referred to as an **optimal balance** in Figure 2.1) is a means by which a social identity becomes salient. Under these conditions, a student’s motivation to achieve reflects the norms, beliefs, and behaviors of the group at the forefront of the mind of the student. Should it be identity congruent to engage in behaviors such as working out a problem on the board, a student will be more likely to engage in such behaviors when feeling an optimal balance within a given social setting. Likewise, if it is identity congruent to talk about an unrelated topic during a lecture, the student will be more likely to engage in behaviors of this sort.

The optimal distinctiveness framework of achievement motivation has two tenets:

1) **An individual’s motivation is more likely to be identity congruent with groups that simultaneously satisfy the person’s social identity needs for assimilation and differentiation than with groups that do not satisfy these needs.**

2) **An individual’s motivation is likely to reflect strivings to satisfy the social identity need to assimilate or the need to differentiate when one of these needs has not been met in a given social context.**
Table 2.1. Predictions for the Optimal Distinctiveness Framework of Achievement Motivation using the Domain of Mathematics as an Example.

<table>
<thead>
<tr>
<th>Tenet 1</th>
<th>Satisfied Social Identity Needs</th>
<th>Increased Social Identification</th>
<th>Identity Congruent Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>Feeling an optimal balance among peers who value math achievement.</td>
<td>Norms, standards, and cultural mores of peer group embraced as one's own.</td>
<td>More importance placed on math achievement as a function of increased identification.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
<td></td>
<td>Less importance placed on math achievement as a function of increased identification.</td>
</tr>
<tr>
<td>Negative</td>
<td>Feeling an optimal balance among peers who devalue math achievement.</td>
<td>Norms, standards, and cultural mores of peer group embraced as one's own.</td>
<td>The importance of math achievement unaffected as a function of increased identification.</td>
</tr>
<tr>
<td>Example:</td>
<td>Feeling an optimal balance among peers who neither value nor devalue math achievement.</td>
<td>Norms, standards, and cultural mores of peer group embraced as one's own.</td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Example:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tenet 2</th>
<th>Thwarted Social Need</th>
<th>Search for Ways to Achieve Equilibrium</th>
<th>Motivation Reflects Attempt to Satisfy Thwarted Need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>Inadequately assimilated with peers.</td>
<td>Perceiving high math achievement as a means of increasing overlap between characteristics of self and peers.</td>
<td>Directed toward high math achievement in order to assimilate with peers.</td>
</tr>
<tr>
<td>Assimilation</td>
<td></td>
<td></td>
<td>Directed toward low math achievement in order to assimilate with peers.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
<td></td>
<td>Directed toward high math achievement in order to differentiate from peers.</td>
</tr>
<tr>
<td>Negative</td>
<td>Inadequately assimilated with peers.</td>
<td>Perceiving low math achievement as a means of increasing overlap between characteristics of self and peers.</td>
<td>Directed toward high math achievement in order to differentiate from peers.</td>
</tr>
<tr>
<td>Assimilation</td>
<td></td>
<td></td>
<td>Directed toward low math achievement in order to differentiate from peers.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
<td></td>
<td>Math achievement unaffected by thwarted need for assimilation or differentiation.</td>
</tr>
<tr>
<td>Positive</td>
<td>Inadequately differentiated from peers.</td>
<td>Perceiving high math achievement as a means of increasing contrast between characteristics of self and peers.</td>
<td>Directed toward high math achievement in order to differentiate from peers.</td>
</tr>
<tr>
<td>Differentiation</td>
<td></td>
<td></td>
<td>Directed toward low math achievement in order to differentiate from peers.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
<td></td>
<td>Math achievement unaffected by thwarted need for assimilation or differentiation.</td>
</tr>
<tr>
<td>Negative</td>
<td>Inadequately differentiated from peers.</td>
<td>Perceiving low math achievement as a means of increasing contrast between characteristics of self and peers.</td>
<td>Directed toward high math achievement in order to differentiate from peers.</td>
</tr>
<tr>
<td>Differentiation</td>
<td></td>
<td></td>
<td>Directed toward low math achievement in order to differentiate from peers.</td>
</tr>
<tr>
<td>Example:</td>
<td></td>
<td></td>
<td>Math achievement unaffected by thwarted need for assimilation or differentiation.</td>
</tr>
<tr>
<td>Neutral</td>
<td>Inadequately assimilated or differentiated from peers.</td>
<td>Perceiving math achievement as having no bearing on the amount of overlap or contrast between the characteristics of self and peers.</td>
<td></td>
</tr>
</tbody>
</table>
Table 2.1 provides a detailed explanation and examples of each tenet, using identification with math class as the focal group. As the table explains, a student is capable of enacting achievement-consistent or -inconsistent behavior depending on how the student relates to others in a given social setting. In a classroom, for example, when a student feels an optimal balance between fitting in and standing out, the student is more likely to view his or her status as a member of this math class as meaningful. In other words, when the student’s social needs are satisfied in the classroom, being a student in this classroom becomes a part of the student’s definition of self, and the student adopts what she or he perceives to be norms, standards, and cultural mores of this classroom as the student’s own. If the norms, standards, and cultural mores of this classroom are consistent with academic success then students will take on these identity congruent beliefs and behaviors as their own because, for students in this math class, being in this class is more than just occupying a seat: Being students in this math class is a part of who these individuals are. On the other hand, if the norms, standards, and cultural mores of the classroom are inconsistent with academic success, then students will instead take on these identity congruent beliefs and behaviors of this sort. Still, not all groups have consistent patterns of academic norms, standards, and cultural mores. In classroom contexts where this is the case, a student’s academic beliefs and behaviors should remain relatively unaffected by her or his identification as a member of this classroom context.

The second half of the table explains that students may not always be completely satisfied with the way they relate to others in a social environment. In the example, a student’s academic beliefs and behaviors in a math class will be directed toward
satisfying the student’s needs to fit in or stand out when the student’s social needs are not being met. The student may construe achievement behavior as a means by which she or he can gain an optimal balance. Depending on the student’s social construal of the academic task, the student will be more likely to endorse these beliefs and behaviors in service of her or his thwarted need to assimilate or differentiate. Indeed, certain beliefs and behaviors may be *socially neutral* if the student does not perceive these beliefs and behaviors as helpful for satisfying her or his social needs.

Finally, the beliefs and behaviors that a student perceives to aid in satisfying a thwarted social need are not guaranteed to work. Enacting certain behaviors in a math classroom, for example, will not automatically lead to an increase in assimilation or differentiation—subjectively or objectively. What is most important is the student’s perception of the social impact of adopting a particular belief or behavior. In an extreme case, a student may appear extremely different from other students in a classroom in the minds of others, but feel adequately assimilated in his or her own mind. If the student feels adequately assimilated and differentiated in a social setting, then she or he is. If the student still feels inadequately assimilated or differentiated in a given social context after an attempt to gain an optimal balance, then the beliefs and behaviors adopted in service of these thwarted needs may require revision by the individual.

An individual’s definition of who she or he is extends beyond personal characteristics and qualities. Ecological systems, such as schools, have the capacity to impact how people see themselves (Bronfenbrenner, 1979). Even within the organization of a school, students may interact—or think about themselves—differently in some parts
or elements of these environments than in others. Not only is the subjective meaning of a person’s behavior different when the person’s focus is on one social unit over another (Tajfel & Turner, 1979), a person’s satisfaction with how much he or she feels assimilated or differentiated also varies based on the social unit used as a point of reference (Brewer, 1991; Brewer & Gardner, 1996). For example, Sheldon and Bettencourt (2002) empirically demonstrated that college students were more interested in and committed to groups that satisfy their assimilation and differentiation needs, showing that levels of perceived social identity need satisfaction differ depending on whether students think of themselves in terms of formal social units (i.e., groups with rules and regular meeting times) versus informal social units (i.e., casually-arranged groups such as a clique or interest group). Schools are complex social institutions. Thus, the satisfaction of social needs may be different for different groups of students who occupy different social niches, such as different cliques and classrooms, within the same school. The framework presented here is applicable to the examination of various social units, such as a clique, classroom, or athletic team, within the overarching schooling context.

**School Belonging: The Umbrella Construct**

Over the past two decades, researchers have become increasingly interested in the way students relate to others in their school or classroom environment. Whereas researchers examine this idea from a variety of angles, one of these perspectives is that of *school belonging*—defined as a perception of “psychological membership in the school classroom, that is, the extent to which students feel personally accepted, respected,
included, and supported by others in the school environment” (Goodenow, 1993, p. 80). In a review of peer relations studies, Libbey (2004) brought attention to the proliferation of scales and constructs that tap into this phenomenon. According to Libbey, “Expanding the review reveals multiple related terms that may or may not have the same definition, elements, or theoretical framework…the various terms have created an overlapping and confusing definitional spectrum” (p. 274). Taking Libbey’s stance one step further, the most troubling aspect of this literature is that Goodenow’s work is cited alongside researchers examining conceptually similar constructs including connectedness, sense of community, friendship, peer group affiliation, and relatedness (Battistich & Hom, 1997; Brown & Lohr, 1987; Deci, Vallerand, Pelletier, & Ryan, 1991; Hamm, Brown, & Heck, 2005; McNeely, Nonnemaker, & Blum, 2002; Resnick et al., 1997; Solomon, Battistich, Kim, & Watson, 1997) as if these constructs are exactly the same.

Perhaps this is due to the “catch-all” definition of school belonging provided by Goodenow (1993), which itself encompasses four constructs. Perceiving acceptance means that we believe others approve who we are, and the role we play in their lives. Perceiving respect means that others hold us in high esteem. Perceiving inclusion means that we feel part of a group, or larger collective. Perceiving support means that we view others as instrumental to our personal growth and development. Whereas the aforementioned (and other) facets of school belonging may appear the same at surface level, conflating these facets may appear increasingly problematic as we continue to question what we actually mean by “school belonging.”
Scholars have previously discussed the multidimensional nature of school belonging (L. Anderman & Freeman, 2004). Still, as the construct continues to permeate the peer relations literature, school belonging is becoming an umbrella construct, wherein the term is being cited and used interchangeably by authors as they discuss other relations constructs (e.g., Martin & Dowson, 2009). Moving forward, it is incumbent upon researchers who introduce peer-relations terms and concepts to be clear about how their frameworks and definitions converge with, and diverge from, the various concepts under the school belonging.

Generally speaking, the association between students’ sense of school belonging and learning outcomes is reported as positive. When Goodenow (1993) administered the Psychological Sense of School Membership scale to middle school and junior high school students, school belonging was found to be positively associated with students’ motivational beliefs, grades, and effort. Likewise, in a sample of urban junior high school students, Goodenow and Grady (1993) found that a high sense of belonging was associated with greater learning expectancies and values, as well as higher levels of academic engagement. Since these early studies on school belonging, a number of researchers have identified similar associations between school belonging and “adaptive” outcomes in school (Baker, Terry, Bridger, & Winsor, 1997; Freeman, Anderman, & Jensen, 2007; McMahon, Parnes, Keys, & Viola, 2008; Pittman & Richmond, 2007; 2008; Roeser, Midgley, & Urdan, 1996). Practitioners, and researchers, may gather from these school belonging studies that meaningful relationships at school yield beneficial
academic outcomes, and the more students feel they belong at school, the better off
students will be.

A handful of studies, however, find negative associations between greater school
belonging and learning outcomes (E. Anderman, 2002; L. Anderman & Hughes, 2003;
Fuligni, Eccles, Barber, & Clemens, 2001). These findings are particularly important
because they present a direct challenge to the way researchers typically discuss the role of
school belonging in students’ learning experiences. L. Anderman and Freeman (2004)
have called for a more nuanced understanding of school belonging to explain why the
construct is not universally linked to achievement-consistent outcomes. Juvonen (2006)
attempted to reconcile these findings, speculating that students adhere to peer norms the
more they identify with their peer groups. If their peer group norms are achievement-
inconsistent, then students should increasingly embrace these norms with increased
perceptions of school belonging. The author’s explanation provides some initial direction
for addressing this important issue more comprehensively.

Viewing school belonging as an umbrella construct that encompasses many
different elements becomes particularly useful when theorizing about associations
between peer relations and students’ motivational patterns in school. Extensive research
has made clear the distinction between close bonds and larger peer groups (Rubin,
Bukowski, & Laursen, 2009). With respect to the construct of belonging, specifically,
scholars such as Walton and Cohen (2011) acknowledge that relationships and similarity
are separate aspects of belonging. With multiple definitions of the same overarching
construct, distinct predictions across these conceptualizations of peer relations are not
only logical, but valid. Leary and Cox’s (2008) alternative conceptualization of belonging speaks directly to the optimal distinctiveness framework. The authors explain that “maximizing one’s social acceptance requires people to be sufficiently assimilated to share fundamental attributes with the group, but sufficiently differentiated to be uniquely valued” (p. 33). Perhaps a student feels like a relevant member of the school (or classroom) when the student sees herself or himself as contributing something unique—or adding value—to that social context. Until today, the need for differentiation has remained absent in scholarly dialogues of belonging in schools.

The problem raised in this section of this article is that school belonging takes on many meanings. The term is therefore larger than a single construct. School belonging can take on slightly different forms (in terms of definition and measurement) depending on the researcher. For this reason, explaining why “school belonging” sometimes leads to negative outcomes becomes extremely difficult. What can be done, and what I do in this article, is to provide theoretical links between specific aspects of school belonging being examined and achievement behavior. While other constructs will not hold the same predictions, the optimal distinctiveness framework of achievement motivation is a perspective under the belonging umbrella that provides dynamic predictions of how peer relations are associated with both achievement-consistent and achievement-inconsistent motivational patterns in students.

In summary, the identity constructs of assimilation and differentiation work in tandem with the literature on interpersonal bonds in the sense that each of these constructs are relevant to the study of peer relations in their own way: one being
similarity, one being uniqueness, and one being social attachment. At the same time, the constructs of assimilation and differentiation diverge from the literature on interpersonal bonds in their predictions: relationships are conventionally predicted to lead to positive outcomes among students (c.f., Anderman & Freeman, 2004; Juvonen, 2006), whereas similarity and uniqueness predict both positive and negative academic outcomes depending on a student’s perception of what a particular belief or behavior means in context. In this way, the presentation of the optimal distinctiveness framework of achievement motivation does not negate other frameworks that link social attachment to positive outcomes in students. The presentation of this new framework does, however, approach the peer relations literature from a social identity perspective—presenting new constructs, new linkages, and new predictions. This approach incorporates a new theoretical lens of student relations that co-exists with other paradigms under the umbrella of school belonging for predicting motivation. The central contribution here, whose niche lies in the recesses of the school belonging literature, is the extending of optimal distinctiveness theory to predictions of achievement behavior among adolescents in schools.

**Examples of How an Optimal Balance May Facilitate Identity-Congruent Motivation**

In this section, I offer examples of how students may come to feel an optimal balance within cliques, crowds, clubs, and classrooms. Much of the work linking identity to motivation has been dedicated to relatively “stable” social identities such as gender (e.g., Niiya, Ballantyne, North, & Crocker, 2008) and ethnicity (e.g., Chavous, Bernat,
Eccles (2009) makes it clear, however, that as we expand our theoretical understanding of identity and motivation, “a similar analysis can be and should be applied to a wide variety of socially defined groups of individuals” (p. 85). As with the case of gender and ethnicity, minimal groups, such as peers on a school bus, in a gym class, or at a lunch table, are important given that social interactions in these groups can cause fluctuations in an individual’s behavior.

Every person has multiple identities; however, the norms, customs, and values will not be exactly the same for each and every social category or group with which a person is affiliated. The cognitive-developmental structures formulated by mid-adolescence make salient the discrepancies among an individual’s various social roles or identities (Harter, Bresnick, Bouchey, & Whitesell, 1997). Empirical studies have demonstrated that identities become more pronounced, however, depending on the situation and available social cues (e.g., Pickett et al., 2002). The social identity standpoint—that identities stemming from group membership help us understand individual human behavior—extends beyond culturally loaded identities of gender and ethnicity; the pervasiveness of a social identity perspective has implications for how a variety of group identities—such as peers on a school bus, in gym class, or at a lunch table—can influence motivated behavior.

Discussing the ways in which students’ social needs for both assimilation and differentiation may be simultaneously satisfied in a schooling context is important for understanding students’ achievement-related thoughts and actions. Though speculative,
the illustrations in this section are intended to incite new ways of examining, interpreting, and understanding the impact of social-contextual demands on achievement motivation, in consideration of the needs for assimilation and differentiation. Ultimately, this section should provide an understanding of how an optimal distinctiveness lens can explain associations between peer relations and academic motivation.

**Maximizing Group Distinctiveness**

Assimilation and differentiation needs may be simultaneously satisfied through identification with relatively small groups (Hornsey & Jetten, 2004). When too many people are included in a group, there is less reason to feel special about one’s membership in the group. Thus, members of small groups typically express greater identification and group commitment than members of large groups (e.g., Abrams, 1994). This strategy for achieving an optimal balance may help explain students’ preferences for smaller classrooms and the subsequent motivation and achievement that result from these classrooms (Pressley, Gaskins, Solic, & Collins, 2006; Slavin, 1989). Whereas the effectiveness of small classrooms is not a new idea to educators, ODT provides an additional rationale for why smaller classrooms may be better for producing desired learning outcomes. Smaller classrooms, as opposed to large ones, may make students feel that each of them is a special, important component of that particular learning community, which would in turn increase the importance students place on being a member of such classroom environments. On the other hand, small learning communities may lead to undesired outcomes in a classroom with low student achievement norms.
A balance in social needs can also be achieved by identifying with subgroups within a large-group context (Hornsey & Jetten, 2004). In classrooms, students may gravitate toward one another and form smaller groups and cliques. From an ODT perspective, the smaller groups formed by students allow them to shrink their peer groups to a size that is psychologically manageable and satisfying of their social needs. In this way, these subgroups should allow students to feel achieve an optimal balance even within large classroom settings. In subgroups in which chattiness is an attribute, individual members should be chatty. Similarly, individuals who identify with subgroups that are typically studious or lazy will be more likely to embody these characteristics themselves. Thus, achieving balance through subgroups can be beneficial when the academic norms of the subgroups include positive beliefs and behaviors directed toward classroom learning.

Optimal balance may also be achieved by identifying with non-mainstream groups (or groups outside of the dominant course, tendency, or trend). Membership in non-mainstream groups (e.g., the school chess team) provides students with an opportunity to “pride themselves on being different” from other members of the school while simultaneously creating stronger ties with group members (Hornsey & Jetten, 2004, p. 252). Fredricks and Eccles (2008) found that adolescents who chose to participate in organized school activities other than athletic teams were more likely to report high valuing of school and high expected grades. The connection between non-mainstream group membership and learning outcomes may not always be beneficial, however. Whereas the norms of the school chess team may include high scholastic
performance, the norms of other non-mainstream groups may not include high scholastic
performance (Juvonen, 2006). Indeed, students’ social needs at school can be satisfied by
being members of deviant peer groups (e.g., bullies). Thus, identification with non-
mainstream groups can sometimes be associated with underperformance in school.

Another way in which individuals may achieve optimal balance is by
exaggerating the distinctiveness of their ingroups. College fraternities and sororities, for
example, encourage fellowship, leadership, community service, and personal growth.
Scholars who study collegiate Greek life have argued that the maintenance of rituals and
secrets by these organizations is one mechanism by which members come to perceive
their own organization as special, unique, and different from other Greek-lettered
organizations (Kimbrough, 2003). As students overstress intergroup differences and
subsequently identify more strongly with their ingroups, their academic behaviors should
increasingly reflect the salience of their identity as members of their fraternity or sorority,
coupled with the norms and values of that group. Therefore, the exaggeration of
intergroup differences should lead fraternity and sorority members whose organizations
are known for scholastic achievement to strive harder to uphold the academic standards
of their organization as they increasingly identify with being members of their
organization. Because not all fraternities and sororities are known for scholastic
achievement, high identification in these organizations may not be related to higher
academic motivation and performance.
Maximizing Individual Distinctiveness

Hornsey and Jetten (2004) point out that embracing one’s role within the group helps satisfy social identity needs. Within classroom settings, cooperative learning environments that incorporate pedagogical approaches such as jigsaw lessons provide students with specific roles and responsibilities are consistent with this strategy for achieving optimal distinctiveness. During jigsaw exercises, students are clustered together into teams. Each team member specializes in a specific skill set or content area that is critical for the team’s ultimate success on the task at hand (Aronson & Patnoe, 1997). Success on the task comes only through cooperation. Jigsaw classrooms have been shown to increase students’ perceptions of a positive school environment (Aronson & Patnoe, 1997). From an ODT perspective, jigsaw classrooms may also foster students’ feelings of assimilation through teamwork, while also allowing each student to distinctly contribute to the progress of the group toward its goals and aims. Thus, social roles fostered through pedagogy can allow students to feel both uniquely valued and depended upon by others. Further, within the culture of jigsaw classrooms, being distinct is celebrated in the sense that having the exact same skill set or set of responsibilities would deem one useless to the functionality of the group.

Optimal balance can be achieved through membership in groups that emphasize individualism. According to Hornsey and Jetten (2004), assimilating to the norms of such groups means expressing one’s personal distinctiveness. Accordingly, “being yourself” can sometimes lead to normative behavior that creates an optimal balance. Whereas uniqueness becomes increasingly valued throughout adolescence (Bornholdt, 2000,
Newman & Newman, 1976), high school and tertiary school students may be especially likely to identify strongly with groups, such as a classroom setting, that acknowledge their uniqueness. For example, as championed by self-determination theory research (Deci & Ryan, 1985), students are more likely to internalize the academic values of classroom environments in which their individual thoughts and actions are welcomed (Reeve, 2009). This relationship suggests that the freedom of personal expression in group contexts is one way of simultaneously satisfying needs for assimilation and differentiation.

People can also achieve an optimal balance by adjusting their perceptions of their own behavior. In their review of research conducted primarily on students in their early college years, Hornsey and Jetten (2004) argued that individuals can satisfy their assimilation needs by perceiving themselves as loyal members of an ingroup. At the same time, people feel unique, different, and independent when they perceive themselves as not conforming to the beliefs and values of others. In school settings, adolescent students should experience optimal balance in groups that establish a great deal of loyalty and cohesion while also making individual group members feel as though they have a mind of their own. This is embodied by the sociocultural stance that students are active members of the class who participate, create, and co-construct their learning environment in the context of supportive relationships (McCaslin & Good, 1996; McCaslin & Hickey, 2001; Perry, Turner, & Meyer, 2006). From an ODT perspective, a sociocultural approach to classroom learning allows students to demonstrate their loyalty to the goals of a class in a non-conformist way by shaping their learning environment. Positive learning outcomes
may be produced in these supportive classrooms, because these environments may help students manage their self-perceptions and provide them with a positive outlook on their own classroom behavior.

Last, seeing oneself as more prototypical than other group members satisfies assimilation and differentiation needs (Hornsey & Jetten, 2004). Leonardelli, Pickett, and Brewer (2010) explain that group members vary in how much they embody the central traits of a social category, such as appearance, behavior, or beliefs. In some classrooms, for example, working hard may be considered normative behavior. One means by which students may come to feel optimally distinct in such settings is through high achievement (Oleson, Poehlmann, Yost, Lynch, & Arkin, 2000), which involves exerting extra effort, or “going the extra mile.” From an ODT perspective, high achieving students may feel similar to other students when they perceive themselves as embodying a relevant attribute of their class norm: effort. Because they embody this attribute more than other classmates, high achievers are simultaneously differentiated.

The illustrations presented in this section are but a few instances of ways in which students might come to feel optimally balanced in school settings. Importantly, the examples of feeling an optimal balance within a classroom, on a chess team, in a fraternity or sorority, or any other group are not theorized to lead to positive academic outcomes, per se. The educational benefits of feeling an optimal balance at school will depend on the norms, values, and cultural mores of the groups that satisfy one’s social needs. In this way, an optimal distinctiveness framework has the potential to explain, at least in part, favorable and unfavorable motivation and achievement patterns in schools.
Using an ODT perspective in future research holds the promise of highlighting effective social contextual strategies that educators can use to produce achievement-consistent academic behaviors in students and to counteract behaviors that are inconsistent with academic achievement.

**Implications for Future Research**

There are several testable questions that may lead to a deeper understanding of the how the activation of the needs for assimilation and differentiation motivates student behavior. What specific types of experiences and interactions within school classrooms, cafeterias, buses, gymnasiums, or hallways heighten these social identity needs? Are these needs more relevant in some contexts than in others? How often do these needs shift in terms of their perceived importance and satisfaction over time? Is the activation of these needs more often associated with public or private changes within an individual? For example, are students more likely to voice opinions and enact behaviors to gain recognition, or to alter their perceptions, beliefs, and personal agendas in service of their needs? Questions such as these and others require new methodological approaches, particularly with regard to the construction of scale items measuring peer relations and social needs. I now highlight potentially fruitful areas in education research based on the theoretical framework presented in this manuscript.

**Methodological Avenues**

Constructs of assimilation and differentiation have major implications for measurement. The measurement of needs is difficult because students will differ in how
much assimilation or differentiation is necessary in order for each need to be sufficiently satisfied. Further, because school belonging is an umbrella construct for a student’s perception of how much he or she relates to others, the construct is often measured using a variety of items (L. Anderman & Freeman, 2004). In the case of interpersonal bonds, items such as, “You feel close to people at your school” (1 = strongly agree, 5 = strongly agree) (E. Anderman, 2002) and “I feel accepted” (1 = not at all true for me, 4 = very true for me) (Furrer & Skinner, 2003) tell us whether or not students perceive a bond with others in their school environment. Even if students mark strongly agree or very true for me, however, these items do not tell us whether the amount of interpersonal bonding they feel is enough to satisfy their social attachment need, because individuals can differ in how much of a bond they need to feel in order for the need to be sufficiently satisfied. More precise measures are required to address these concerns. Whether a researcher interested in relations among students focuses on interpersonal bonds or the social identity needs for assimilation and differentiation, the researcher should place a premium on need satisfaction during item development, and not just the need. The continued development of such measures at different social units of analysis (i.e., for student workgroups inside of classrooms, for cliques, for classrooms, extracurricular clubs, and for school overall) will lead to a more comprehensive understanding of how these needs—and the satisfaction of them—shift in their activation and importance for explaining motivation within a social unit, and how these needs intermingle across social units to explain motivation.
Thus far, researchers interested in measuring social needs have created constructs of need satisfaction. These researchers have assessed the level of satisfaction of the need for assimilation and the need for differentiation at a particular time for a specific ingroup. For example, Sheldon and Bettencourt (2002) used face-valid items intended to tap into group-specific need satisfaction. Measures of personal distinctiveness, group inclusion, and group distinctiveness demonstrated acceptable levels of internal consistency ($\alpha = .80$, $\alpha = .75$, $\alpha = .73$, respectively). Sample items included, “How unique do you feel as you participate within this group?” [personal distinctiveness], “To what extent do you feel well-integrated into this group?” [group inclusion], and “How much does this group seem to stand out, compared to other groups?” [group distinctiveness]. The authors found these social identity need satisfaction constructs, along with perceived autonomy and relatedness, to be associated with affect, intrinsic motivation, and group commitment.

Among other contributions, attempts to discriminate between interpersonal-relations constructs (e.g., Deci & Ryan, 1985) and group-relations constructs (Brewer, 1991) should be noted. That is, measures of assimilation and differentiation should be constructed to tap into a particular phenomenological experience. For example, interpersonal, relational scale items should be used to tap into a person’s relational belonging to close others at school. Likewise, scale items that discuss “fitting in” should be used to study similarity to others. Since these are conceptually separate aspects of belonging (Walton & Cohen, 2011), measures should not conflate these constructs within a single measure. Further, Ryan and Deci (2000) have articulated that autonomy should not be equated with differentiation. To self-determination theorists, autonomy refers to
one’s perceptions of volition, rather than a sense of uniqueness from others. Sheldon and Bettencourt’s (2002) psychometric separation of these relational and social identity needs is thus an important distinction that should be developed more rigorously in future educational research.

Researchers interested in developing measures of assimilation and differentiation should also consider the following: First, students’ perceived amount of satisfaction of an identity need should guide the development of each question. Conceptually, this distinction in wording is extremely important because it recognizes that humans differ in how much differentiation and how much assimilation they would ideally like to feel (Brewer & Roccas, 2001). Additionally, for items worded in this way, the measurement of the differentiation need is separate from, and does not interfere with, the measurement of the assimilation need. Scale items should also be contextualized. For example, an item for differentiation need satisfaction might read, “I am satisfied with how unique I feel in this science class.” Ancillary measures might ask about the relative importance of the need (e.g., “It is important for me to express how unique I am from other students in this science class.”). In line with self-discrepancy research (Higgins, 1987) an alternative approach might tap into the extent to which assimilation and differentiation needs are guides for students’ behavior by assessing their current level of satisfaction, and then their ideal level of satisfaction. Second, open-ended questions might be useful as a preliminary strategy for developing survey items. Such efforts allow students to express themselves in their own words, and also allow researchers to use this language when developing scale items (Ryan & Shim, 2006, Study 1). Formal procedures for cognitive
interviewing can further assist with establishing validity among self-report items (Karabenick et al., 2007). These procedures can be used to ensure participant-researcher agreement regarding meaning of individual need-satisfaction scale items. Third, the factor analytic structure and validity of assimilation and differentiation measures should be assessed on diverse samples of students and in diverse contexts.

There are several benefits to using the present framework as a guide for measuring social needs. First, research on psychological needs makes predictions about what will happen when these needs are, or are not, met (Baumeister & Leary, 1995; Vignoles, 2009), not about what will happen when a person perceives some level of these needs (e.g., high or low). This is because the degree to which a student perceives himself or herself to fit in, stand out, and have close relationships at school is less interesting and, perhaps, irrelevant if we are unable to glean that perceiving high or low amounts of these social needs is a similar experience from one person to the next. Placing a methodological emphasis on the satisfaction of social needs is consistent with the ways in which needs are conceptualized and can, therefore, effectively align predictions about needs with the measurement of these constructs.

Second, researchers will be able to assess the unique contribution of each social need to students’ motivational patterns. Though assimilation and differentiation are theorized as sharing the same underlying link with students’ motivation, perhaps certain academic content, school subjects, or school contexts heighten the sensitivity of one need and dull the other. For example, in certain school contexts where “being your own person” is an emphasized value among students, perhaps a premium placed on
differentiation makes this need insatiable within the context of that schooling environment. In other words, students in such contexts may consistently feel like they do not stand out enough.

Third, researchers can examine the ways in which the needs for assimilation and differentiation work in tandem to predict achievement behavior in students. For example, researchers may construct psychological profiles of students’ social identity need satisfaction using latent profile analysis, cluster analysis, or canonical correlation. The objective of these techniques is to empirically group (or cluster) students together on the basis of a set of psychological factors for descriptive and predictive purposes. In these analyses, researchers aim to ensure that students within the same cluster have a more similar psychological profile, and students across clusters have a dissimilar psychological profile. In terms of fitting in and standing out, the norms of the social unit under examination, along with students’ perceptions of the social meaning of achievement behavior, are important additional considerations for understanding linkages between these measures and achievement behavior. For example, using a classroom as the social unit of analysis, an emergent cluster of students whose needs for assimilation and differentiation are simultaneously satisfied should identify most strongly with being students in this classroom (relative to other profiles of need satisfaction). If norms of this classroom include academic effort and scholastic success, then this profile of students should express high achievement behavior. Individuals within an emergent cluster of students who feel assimilated, but not differentiated, should demonstrate achievement behavior to the extent that such behavior is subjectively perceived to lead to a reduction
in the discrepancy between current and ideal levels of differentiation. This same logic applies to the frustration of the assimilation need. Further, researchers can examine the additional impact of close relationships in a classroom or school environment above and beyond the contribution of assimilation and differentiation needs. Last, researchers can examine how having one’s need for differentiation satisfied or thwarted at an individual or group level, or both, are each related to students’ motivation and achievement in a different way.

Indirect Impacts of Social Identity Needs on Students’ Motivation

The broad prediction that individuals identify strongly with groups that satisfy their personal needs for assimilation and differentiation can be studied in a variety of ways with student populations. Whereas the primary focus of this manuscript has been the direct association between students’ social identity needs and their motivation for scholastic achievement, motivation may be affected in ways that have indirect impacts academic outcomes. For example, students’ dressing patterns at school are a means for them to fit in or stand out. Air Jordan basketball shoes are popular and highly sought after within urban settings. Perhaps some students put a great deal of thought into their shoes to help themselves fit in or stand out. For others, wearing Air Jordans may help students gain an optimal balance between fitting in and standing out, because many Air Jordan designs are limited in number and often have popular, yet unofficial nicknames (e.g., the “Grapes,” the “Space Jams,” or the “Cool Greys”). A student could easily find himself being the only person in a class or group with the “Concords” even though he is wearing Air Jordans just like almost everyone else in the class. The high demand for Air Jordans
may indirectly impact a student’s motivation in a few ways. Some parents might be willing to purchase their son a new pair of Air Jordans if he works really hard in school. In this case, the student’s social needs can have an indirect impact on the student’s academic behavior, because the student’s effort will be rewarded with a new pair of shoes. A different student may choose to work while in school to afford Air Jordans on his own because his parents are unable or unwilling to pay for them. Recent findings demonstrate that working more than 20 hours is associated with lower academic performance and a number of behavioral problems (Monahan, Lee, & Steinberg, 2011). Thus, it is possible that the pursuit of certain clothing to satisfy one’s social needs can sometimes lead indirectly to better or worse academic performance.

**Student Background Characteristics**

An examination of differences in assimilation and differentiation need satisfaction based on age, gender, and socioeconomic status is also critical for the generalizability of the predictions presented in this manuscript. Bornholdt (2000) explored developmental differences in adolescents’ uniqueness and interpersonal bonding. Results revealed that students increasingly embrace uniqueness, and steadily embrace social bonds, as they get older. Other background characteristics might also contribute to feelings of assimilation and differentiation in school contexts. For example, does being a demographic minority within a school setting (e.g., being the only Black person in an all-White class) lead to the chronic accessibility of assimilation and differentiation needs at school? Also, what are the conditions under which being the “only one” leads to high versus low academic effort at school? Background characteristics might also be related to the strategies students use
to achieve optimal distinctiveness. In terms of pedagogy in diverse learning contexts, future work should examine whether students’ perceptions of fitting in and standing out fluctuate as teachers incorporate culturally relevant lessons and activities.

**Implications for Education Reform**

Fundamental to students’ educational experiences are their interactions with others in their schooling environments (Butler, 2011). Schooling is both an academic and a social experience, and school environments are “rich social arenas with constant interaction and affiliation” (Juvonen, 2006, p. 655). Within these social arenas, students acquire speech patterns, participate in after-school activities, and wear non-traditional articles of clothing to help define themselves in relation to others. Because students’ social needs dictate many of their social behaviors in schools, an enhanced understanding of these needs has the potential to impact students’ outlooks on academics and, subsequently, their achievement patterns. As noted by Juvonen (2007), further examination of students’ social needs provides insight into students’ achievement beliefs and behaviors that remain underrepresented in current school reform. Education reform can come in the form of a student’s participation in brief exercises taken from basic social-psychological experiments, which can generate positive recursive impacts on student’s achievement behavior.

There are educational benefits to focusing on basic social-psychological elements, such as students’ needs to fit in and stand out. As noted by Gehlbach (2010), an understanding of fundamental social processes is applicable to several aspects of the formal education experience; successfully modifying basic social processes requires
minor adjustments but may yield disproportionately large effects; and understanding basic social processes can lead to a chain of positive cascading effects. Intervening at the level of these basic social processes has been successful in areas such as attributions (Blackwell, Trzesniewski, & Dweck, 2007), identity (Oyserman & Destin, 2010), values (Hulleman & Harackiewicz, 2009), and stereotype threat (Aronson, Fried, & Good, 2002). What the guiding theories of these interventions have in common with the present framework is that each perspective places a premium on students’ perceptions. Yeager and Walton (in press) explain that social-psychological interventions are particularly effective because of their “understanding of students’ subjective experience in school—what school seems right to the student in the classroom, not how school appears to an observer, researcher, or teacher” (p. 17). Yeager and Walton further explain that social-psychological interventions are not a substitute for traditional reform efforts (e.g., quality instruction or comprehensive academic curriculums); instead, these interventions work hand-in-hand with traditional policy reform efforts to help students transcend certain psychological factors that might otherwise inhibit them from maximizing their potential.

Similar to the way interventions emerged on stereotype threat and attributions, recent experiments on social identity needs show promise for boosting students’ motivation in natural classrooms in future work. For example, using a standard social identity needs manipulation, Gray and Morrison (2011) asked college students to recall instances when they felt either too different from (heightened need for assimilation condition) or too similar to (heightened need for differentiation condition) others around them. Later, participants were asked to play a word game. Embedded in the instructions
was a need satisfaction manipulation indicating that people of their same college major who do well on the word task (Boggle) have been known to be high in either “blendability” (ability to fit in) or “uniqueness/quirkiness” (ability to stand out). Gray and Morrison found that participants in the need for assimilation condition exhibited greater self-regulatory performance on Boggle when success was associated with “blendability,” compared to the assimilation condition, in which participants read that Boggle success was associated with “uniqueness/quirkiness.” Likewise, participants in the need for differentiation condition persisted longer and performed better on the task when success was associated with “uniqueness/quirkiness,” compared to the differentiation condition in which participants read that Boggle success was associated with “blendability.” In sum, the authors found that participants exhibited greater motivation and performance when success on the word task was socially meaningful with respect to satisfying their thwarted social needs.

More broadly, these findings suggest that educators can direct and energize the academic behavior of target populations by guiding their social interpretations of specific academic tasks. Writing exercises, videos, and workshops are all ways that we may help students perceive achievement-related tasks as social mediums for helping them fit in and stand out among their peers. As pointed out by Yeager and Walton (in press), keeping the essential theoretical components at the core of an intervention, remaining careful and precise during administration, tailoring the intervention to the culture of a particular academic context, and developing trusting, communicative partnerships
between researchers and practitioners will determine the eventual impact of this social-psychological framework on education reform.

**Conclusions and Broader Impact**

Academic learning is only a portion of the information that students take away from schools. Students also take away social information about themselves, their close relationships, and the crowds they fit in with, as well as the crowds that are not quite for them.

In the present article, I have devoted considerable attention to the ways in which students’ motivation in learning environments is impacted by how they relate to one another. Whereas this perspective is relevant in terms of addressing face-to-face schooling experiences, future research should provide insight into virtual learning environments in ways that remain absent from the social identity literature at present. In a survey of over 2,500 colleges and universities, the Sloan Consortium (2008) reported approximately 3.94 million students as being enrolled in at least one online course in the fall of 2007. Even within online learning communities, not all environments afford students opportunities for peer-to-peer interaction. Among online learning environments that do provide opportunities for interaction among students, significant variability may exist. At best, an optimal distinctiveness perspective provides some initial direction on how online communities might help students identify with minimal groups. For example, assigning students to group projects based on their birthday month may help students feel some overlap between themselves and a select group of students in large virtual communities (Cwir, Carr, Walton, & Spencer, 2011). Beyond these initial possibilities,
the utility and functionality of the present framework for online learning communities remains to be developed.

The psychological experience of both “fitting in” and “standing out” can serve as the basis for many areas of future research due to its broad applicability to many socially-related achievement issues including racial and gender discrimination, peer victimization, the instruction of English-language learners, the inclusion of students with disabilities, and the instruction of exceptionally gifted children. Improving our understanding of students’ efforts to fit in and stand out in schools is therefore germane to many problems facing education systems today.
Chapter 3
Assessing the Synergism between Adolescents’ Needs to “Fit In” and “Stand Out”: A Window into Academic Identities, Values, and Emotions in the Classroom

The importance of school belonging has received great attention due to its relation to both academic motivation and psychological well-being (Baker, Terry, Bridger, & Winsor, 1997; Byrd & Chavous, 2011; Freeman, Anderman, & Jensen, 2007; McMahon, Parnes, Keys, & Viola, 2008; Pittman & Richmond, 2007; Roeser, Midgley, & Urdan, 1996; Wang & Eccles, 2012). Still, understanding the motivational and emotional affordances of school belonging involves deeper questioning of what it means to feel a part of one’s academic community. School belonging is typically characterized in terms of social attachment in school (e.g., Martin & Dowson, 2009)—at times referred to as “fitting in” (Crosnoe, 2011). From this perspective, “standing out” represents rejection, ostracism, or social isolation. Meanwhile, distinctiveness researchers view both “fitting in” and “standing out” as adaptive for human functioning when “fitting in” is defined as affiliation or similarity, and when “standing out” is defined as uniqueness or difference (Brewer, 1991; Snyder & Fromkin, 1980). Employing the latter perspective in the present study, I investigated the synergism between these two constructs to answer the question, does “standing out” help or hinder the facilitation of achievement motivation and well-
being that we expect to see when adolescents are able to “fit in” with others in their academic community?

To address this question, I examined students’ class-related values and emotions. When students view doing well in a particular academic domain as personally important, intrinsically appealing, and useful for their future goals, students not only express greater intentions of enrolling in future courses in that domain (Meece, Wigfield, & Eccles, 1990), they actually do (Bong, 2001; Eccles, Barber, & Jozefowicz, 1999; Upgdegraff, Eccles, Barber, & O’Brien, 1996). Researchers are only beginning to understand the complex relations of emotions with student achievement (Pekrun, Goetz, Frenzel, Barchfeld, & Perry, 2010). But in terms of mental health, it is clear that positive affect (e.g., enjoyment and pride) is far more adaptive than is negative affect (e.g., hopelessness, shame, anxiety, and boredom) for healthy human development and functioning (Isen, Daubman, & Nowicki, 1987; Lyubomirsky, King, & Diener, 2005; Moskowitz; 2000; Watson, Clark, & Tellegen, 1988). The present study serves as an initial exploration into whether students’ class-related values and emotions may be traced back to the extent to which they describe themselves as members of their classroom’s academic community (academic identity), and whether these academic identities may be traced back to how much they were able to fit in with—while also standing out from—their classmates.

**Fitting In and Standing Out**

As social beings, we take comfort in being able to both fit in with, and stand out from, other people (Brewer & Roccas, 2001; Vignoles, Chryssochoou, & Breakwell,
2000). By fitting in, or assimilation, I mean the perceived overlap between a person’s qualities and the qualities of others. Such qualities might be based on appearance, behaviors, beliefs, physical characteristics, and so forth. Differentiation, then, is the perceived contrast between a person’s qualities and those of others. As these needs are tied to one another, discussions have centered around human strivings to satisfy these needs simultaneously (Brewer, 1991; Snyder & Fromkin, 1980), but resolving these needs is conceptualized to mean different things depending on whether assimilation and differentiation is discussed in terms of similarity and difference between individual within a group, or in terms the exclusive nature of one’s ingroup as a whole.

Social psychological frameworks describe fitting in and standing out as important factors in the identity formation process. According to uniqueness theory (Lynn & Snyder, 2002; Snyder & Fromkin, 1980), being moderately distinctive allows us to both understand who we are through our differences, while maintaining a sense of affiliation with others. This premise also underlies Optimal Distinctiveness Theory (ODT) (Brewer, 1991), except that being optimally distinct occurs at the intergroup level when individuals see their ingroup as not-too-large, but not-too-small. According to ODT, perceiving sufficient similarity within one’s group while simultaneously perceiving sufficient differences between one’s ingroup and outgroups is the basis for ingroup identification. Thus, we become immersed in a social group when we feel both included in the ingroup, and distinguished from outgroups.

1 An ingroup is two or more people who may be classified together on the basis of their physical attributes, attitudes, or any common thread typified by each group member. An outgroup, then, would be all individuals who do not share the features in common with members of the ingroup. Moving forward in this paper, the ingroup of primary interest will be students’ English classrooms. Generally speaking, however, ingroups are individuals who are members of the same group.
By and large, the distinctiveness literature portrays the social identities as being bourne out of intergroup comparisons (Leonardelli, Pickett, & Brewer, 2010). This special designation of intergroup differentiation, which is not held by intragroup differentiation, may emanate from the notion that people only express individuality when they want to dissociate themselves with their ingroup. Research demonstrates, however, that firmly invested group members also may express differing beliefs for the good of their ingroups (Packer & Miners, 2012). In addition, some groups—and indeed even some societies—embrace individuality more than others (Triandis, 1989). Thus, differentiating oneself from ingroup members may not always entail a departure from the group itself.

Individualist and collectivist group norms have demonstrated influence over the ways that people express their distinctiveness (Jetten, McAuliffe, Hornsey, & Hogg, 2006). Jetten and colleagues found that when people thought of themselves as members of a university that prescribed collectivist norms, students were likely to express ways that they distinct from students at other universities. On the other hand, when students thought of themselves as members of a university that prescribed individualist norms, students were likely to express ways they were distinct from students at their own university. Research also has shown perceptions of individualist norms to promote acceptance of ingroup members who behave uniquely from other group members (Hornsey, Jetten, McAuliffe, & Hogg, 2006). Further, Hornsey and Jetten (2004) point to participating in groups that celebrate individualism, playing a unique role inside of a group, perceiving oneself as a loyal but non-conforming group member, or perceiving
oneself as prescriptive deviant (i.e., deviating in ways that are consistent with how other group members strive to behave) all as ways of satisfying needs for similarity and uniqueness. It stands to reason—at least in groups with a prevailing acceptance of individualism—that people may be more likely to endear groups that help them realize their uniqueness without jeopardizing their membership in the group. To date, however, empirical demonstrations of greater identification with groups that simultaneously satisfy intragroup assimilation and differentiation needs appear absent from the literature.

In addition to its theoretical relevance, this issue is practically meaningful. Beyond mere group membership, identifying with groups has both emotional and motivational currency (Markus & Wurf, 1987; Tajfel, 1981). Researchers have revealed the salience of social identities to be important in many areas, including education. Iyer, Jetten, Tsivrikos, Postmes, and Haslam (2009) found the college transition to negatively impact students’ well-being, but those who strongly identified with other students at their university were armored against these negative emotional experiences during the transition. In experimental work, Elmore and Oyserman (in press) manipulated middle school students’ perceptions of whether scholastic engagement was gender-identity congruent; that is, whether engagement is consistent with what it means to be “male” or “female” (i.e., consistent with the behavioral script of being a male or female). Findings indicated that both middle school boys and girls expressed academic motivation in the form of stronger academic and occupational self-concepts. Moreover, boys demonstrated greater persistence on math tasks. As these studies show, salient social identities—especially those identities that are consistent with academic growth and achievement—
have applied significance. By extension, a deeper understanding of the underpinnings of such salient identities is an important direction for distinctiveness research on both theoretical and practical grounds. This may be particularly true for adolescents—a population that devotes special attention to their social interactions (Juvonen, 2007) and questions of identity (Erikson, 1968).

**Examining Assimilation and Differentiation Needs beyond Experimental Contexts**

The majority of research on distinctiveness needs has been conducted in laboratory settings by experimentally arousing assimilation and differentiation needs (for a review, see Leonardelli et al., 2010), but less work has been devoted to the study of these needs in natural environments in a manner that does not forsake the theoretical foundations of these constructs.

This becomes a formidable task when considering the question of what constitutes a balance between fitting in and standing out. Previous research in this frame has focused on assimilation and differentiation in terms of need satisfaction. Badea, Jetten, Czukor, and Francoise (2010, Study 1) assessed the link between assimilation and differentiation need satisfaction with group identification among law and physics majors, using college major as the ingroup. Items for assimilation [and differentiation] read, *I wish my major had a larger [smaller] number of students* and *I wish the admission procedure was less [more] demanding* from 1 = *strong disagreement* to 6 = *strong agreement*. When reversing the two differentiation items, Badea and colleagues described lower values on the four-item measure (α = .62) as representing a search for differentiation via a smaller ingroup, and high values representing a search for assimilation via a larger ingroup.
Regressing ingroup identification on need satisfaction revealed support for a curvilinear relation in which individuals who scored moderately on the need satisfaction measure reported the greatest levels of group identification. Badea and colleagues interpreted this finding as supporting the notion that individuals identify strongest with groups when they experience a balance between assimilation and differentiation needs, or when “need satisfaction was ‘just right’” (p. 27).

Sheldon and Bettencourt (2002) examined need satisfaction in terms of assimilation (How included do you feel in this group?; α = .80), group differentiation (How different is your group from other groups?; α = .73), and individual differentiation (How much do you feel like you stand out within this group?; α = .75) on scales from 1 = Not at all to 5 = Very much. Sheldon and Bettencourt examined the relation of these constructs—along with measures of autonomy and relatedness (Deci & Ryan, 1985)—to group commitment, affect, and motivation. Assimilation need satisfaction was associated with positive affect within groups in which students were members, and with intrinsic motivation for the activities of these groups. Personal distinctiveness was positively associated with negative affect, and group distinctiveness was positively associated with commitment to the group.

The work of Badea and colleagues (2010) and Sheldon and Bettencourt (2002) point to the great potential for distinctiveness research beyond the laboratory, but the measurement of assimilation and differentiation need satisfaction must be amended in order to preserve conceptual formulations of these constructs. In the case of Badea and colleagues, combining assimilation and differentiation items into one measure does not
retain the integrity of each of these separate social identity needs. Sheldon and Bettencourt did measure need satisfaction constructs separately, but did not account for the possibility that these identity needs vary across individuals. One important reason for empirically separating similarity from uniqueness is because humans differ in how much assimilation or differentiation they require in order for each need to be sufficiently satisfied (Brewer & Roccas, 2001). Whereas one person, for example, may have a high threshold for assimilation but a low threshold for differentiation, another person might have a low threshold for assimilation but a high threshold for differentiation. In addition, authors have recently express disagreement with the notion that similarity and uniqueness are in direct opposition to one another (Vignoles, 2009)—an argument that is still up for debate. To honor differences in thresholds for assimilation and differentiation, measures of need satisfaction would have to focus on how much more uniqueness or similarity an individual requires from a group in order for each of these needs to be sufficiently satisfied. Such amendments to need-satisfaction measures would strengthen examinations of distinctiveness in natural environments.

**The Present Study**

The primary objective of the present study was to explore whether the simultaneous satisfaction of assimilation and differentiation needs is linked with stronger group identification. This theoretical question is examined within high schools due to its germaneness to broadening the scope of what it means to be a part of one’s academic community. Within classroom environments, analyses were designed to assess 1) whether students’ in-the-moment satisfaction of distinctiveness needs could be measured in ways
that preserve the conceptual descriptions of assimilation and differentiation; 2) whether students could be grouped in ways that reflected the extent to which their assimilation and differentiation needs are satisfied within their classrooms; and 3) whether students experiencing the greatest levels of both assimilation and differentiation need satisfaction would value learning more, and experience more positive emotions, due to stronger academic identification with their classroom communities.

Thus, in aiming to highlight the relevance of fitting in and standing out to the process of identity formation, I examine whether the simultaneous satisfaction of differentiation and assimilation needs at the intragroup level is associated with the motivational and emotional benefits of group membership via stronger academic identification. Conducting this research first required justification of the quality of measures of need satisfaction—a step which appears absent in previous research measuring both assimilation and differentiation in natural settings. Then, a person-centered approach was used to consider the extent to which students’ assimilation and differentiation needs were met, and to classify these students into profiles according to their levels of need satisfaction.

In a large sample of high school students, using established measures of cognitive determinants of adolescent motivation (Eccles & Wigfield, 1995) and affect (Pekrun, Goetz, & Perry, 2005), the present study addressed three specific hypotheses:

1) After amending previous measures of assimilation and differentiation to focus on need satisfaction at the intragroup level, the theoretical structure of these measures will be supported.
2) Examining classrooms as social groups, different profiles of assimilation and differentiation need satisfaction will emerge, reflecting varying degrees in which students feel these needs to be met within their classrooms.

3) Because the norms, standards, and cultural mores of classrooms are assumed to be consistent with academic success, emergent profiles will differ in the extent to which they value learning in these classrooms, and the extent to which they experience positive emotions within these environments. In line with theoretical formulations proposed earlier, students whose assimilation and personal differentiation needs are simultaneously satisfied should value learning English and experience positive emotions to a greater extent due to higher levels of academic identification.

Method

Participants

Participants in the present study were 702 students from a large, suburban high school in the Midwest. In the sample, 18% were freshmen, 23% were sophomores, 23% were juniors, and 38% were seniors. The price students paid for lunch was used as a proxy for household income, wherein 69% of students paid full price for lunch, and 31% received a free or reduced-priced lunch. In terms of gender, 45% of the participants were female. In terms of ethnicity, 74% were Caucasian, 4% African American, 9% Asian/Pacific Islander, 2% Latino/a, and 10% reported being multiracial or of other ethnic backgrounds. Because of the low prevalence of other ethnicities in this sample,
ethnicity was treated as dichotomous, reflecting ethnic majority and ethnic minority status.

Procedure

Survey Refinement. A classroom of students at the same school (N = 13) who were at various grade levels served as a focus group prior to the study. These students reviewed questions pertaining to the extent to which they felt their needs to assimilate and differentiate were met in their English classes, how much they defined themselves by their membership in their English class, the value they placed on learning English, and the emotions they experienced during English class. Students gave their general impressions of the survey and suggested general wording changes before being asked in more detail about the survey questions on fitting in and standing out. Informally, I posed cognitive interviewing questions to the group to determine whether students interpreted survey items as questioning the extent to which they felt sufficiently different from and similar to their classmates. Based on Karabenick et al., (2006), focus group cognitive interviewing questions were: What is this question trying to find out from you?; Which answer would you choose?; Can you explain to me why you chose that answer?

Before administering the measures to students, items had been reviewed by social identity experts for content validity. Students in the focus group articulated that they viewed the assimilation and differentiation items as tapping into the perceptions of the extent to which they felt different enough from, and similar enough to, their classmates. Additionally, for each item, focus group participants responded to the question, How clear is this item to you? (1 = Not at all clear, 5 = Very Clear). Focus group participants
expressed that the assimilation need satisfaction items (clarity $M = 4.43$, $SD = .37$) and the differentiation need satisfaction items were clear (clarity $M = 4.46$, $SD = .44$).

**Data Collection.** The study was conducted during students’ English classroom periods during the Spring of 2011. On the day of survey administration, research assistants provided instructions of the study to an entire classroom of students. The study was described as an investigation of students’ perceptions of their high school learning environment. After introducing the study, research assistants administered surveys to students, which were approximately 10-15 minutes in length. Students were instructed to hold their surveys and sit quietly until most students had finished. At that time, students submitted their surveys into a dropbox located near the research assistant at the front of the class. Each student was thanked for volunteering to participate in the study.

The design of the present dissertation was approved by The Ohio State University’s Institutional Review Board. The current study was conducted in partnership with the participating high school's administrators with the larger purpose of aiding the school administrators and teachers in understanding possible psychological barriers to student motivation and well-being at their school. The school would receive a preliminary and final report for the study. In addition, teachers would receive a workshop about the findings of the study at the time of the final report in order to inform their instructional practices. Because this study was designed to directly benefit the school administrators' and teachers' understanding of the psychological factors of their school environment, an alteration to the traditional informed consent process was employed in which the school informed parents of the details of the study with assurance
that the study would not adversely affect the rights and welfare of prospective student participants or the reputation of the school. Teachers were provided with a description of the study and were asked to volunteer at least one of their English classrooms for participation in the study to ensure adequate representation across all grade levels and classroom periods. Three weeks prior to the study, information sheets about the study were sent home along with other important school notices to ensure that students shared this information with their parents. Only parents who did not want their child to participate in the school's study were asked to contact the school. No incentives were provided to parents or students for participating beyond providing teachers with data (aggregated across all participants) which might positively impact the effectiveness of classroom instruction at this high school. No parental concern were expressed regarding this initiative. In order to determine actual participation rate on the day of the study—while at the same time protecting the integrity of those students who chose not to participate—all students were provided with a survey. All students were asked to submit their survey, but not complete them if they did not wish to participate in the study. Of the 716 students who were designated as prospective participants, 14 students submitted blank surveys. Thus, 98% of the prospective participants chose to participate.

**Measures**

All scales, with the exception of measures of assimilation and differentiation need satisfaction, were adapted from previously used measures. Each previously used measure that was selected for inclusion in the present study was conceptually appropriate and has previously demonstrated strong psychometric properties. Further, I calculated Cronbach’s
alpha for all measures to ensure adequate reliability among students in the present sample. Items for each measure and the corresponding Cronbach’s alpha coefficient are found in the Appendix.

**Assimilation and Differentiation Need Satisfaction.** When developing the measure, I focused on the extent to which students’ needs for assimilation and differentiation were met at the intragroup level (Brewer & Gardner, 1996; Brewer & Roccas, 2001; Vignoles et al., 2000). Questions were constructed keeping in mind that students might vary in how fulfilled they were in their needs to fit in and stand out with other students in their classroom. Items were informed by previously constructed measures of assimilation and differentiation (Bornholdt, 2000; Sheldon & Bettencourt, 2002), except I focused on how much more assimilation and differentiation a student wanted to feel in order for each of these needs to be met. Because Optimal Distinctiveness Theory emphasizes the (dis)satisfaction of assimilation and differentiation needs as operative components of social identity, and because the aim of the present research was to make a case for the intragroup distinctiveness needs as associated with social identity needs, extra care was taken to avoid constraining students’ perceptions of need satisfaction to one particular social dimension over another (e.g., style of dress, ethnicity, or hobbies). Rather, all items were phrased in terms of students’ perceptions of how much their assimilation and differentiation needs were met “In my English classroom” (sample assimilation need satisfaction item: *In my English classroom, the amount of similarity I feel to other students meets my standards*; sample
differentiation need satisfaction item: *In my English classroom, I stand out enough from my peers.* [from 1 = *Not at all true* to 5 = *Very true*].

**Task Value.** To assess the extent to which students valued learning in their English classrooms, I used Eccles and Wigfield’s (1995) task value scales. Value items assessed students’ beliefs about utility, importance (attainment value), and intrinsic value of learning about English/Language Arts (Sample item: *I feel that, to me, being good at English/Language Arts is* [1 = *Not at all important*, 7 = *Very important*]). Each of these three components of task value was assessed separately, as opposed to being combined into one scale (Eccles & Wigfield’s previous intrinsic value $\alpha = .76$, previous attainment value $\alpha = .70$, previous utility value $\alpha = .62$).

**Affect.** I adapted established measures of class-related emotions by Pekrun and colleagues (2005) in order to assess the affect students experienced during class. Students suggested slight changes to items they felt were too “wordy,” and these amendments were made prior to survey administration. Class-related enjoyment, hopelessness, pride, boredom, anxiety, and shame were measured (Sample item: *In my English class, the lessons bore me.* [from 1 = *Not at all true* to 5 = *Very true*]) (Pekrun et al.’s previous enjoyment $\alpha = .85$, previous pride $\alpha = .82$, previous anxiety $\alpha = .86$, previous shame $\alpha = .89$, previous hopelessness $\alpha = .90$, previous boredom $\alpha = .93$).

**Academic Identity.** In order to assess the extent to which participants defined themselves by their membership in their English classrooms, I adapted a measure of group identification (Castano, Yzerbyt, & Bourguignon, 2003). The ingroup, English class, was inserted into every item (Sample item: *I identify with others in my English
class. [from 1 = Not at all true to 5 = Very true]) (Castano et al.’s previous group identification α = .85).

Statistical Methods

In order to empirically assess the structure of measures of assimilation and differentiation need satisfaction, the overall sample was randomly divided into two subsamples. For one subsample, the measures were assessed using principal components analysis (PCA) with varimax rotation. For the other subsample, confirmatory factor analysis was conducted using LISREL 8.80 (Joreskog & Sorbom, 2006).

To group individuals based on their levels of need satisfaction, a latent profile analysis was conducted using MPLUS Version 5 (Muthén & Muthén, 2007). Latent profile analysis (also referred to as Latent Class Cluster Analysis) is a model-based approach that offers several advantages over traditional k-means cluster analysis (see Vermunt & Magidson, 2002). Latent profile analysis does not assume that participants’ scores on measures of assimilation and differentiation need satisfaction follow a normal distribution. Instead, it accounts for the possibility that there may be several distributions within one data set. Students with similar responses on each of the need satisfaction measures together would be clustered together, and separated them from students with dissimilar response patterns—all while controlling for effects of the English classrooms in which they are nested. Like factor analysis, the interpretation of what these groups represent in psychological terms is left to the researcher. Since this approach is model-based, I was able to test different solutions (i.e., solutions for one profile, two profiles, three profiles, etc.). Fit indices were then compared to assess relative improvements in
model quality across profile solutions. Model quality was determined by a lower Bayesian Information Criterion (BIC), a lower sample-size adjusted BIC, and reductions in model deviance from one model to the next (Likelihood Ratio Test; LRT).

To examine differences in social identification, and subsequent motivation and emotion, I employed a multicategorical mediation analysis (Hayes & Preacher, 2011) in IBM SPSS Version 19 using a bootstrapping procedure. In this analysis, the association of students’ profile membership ($X$) with motivation and emotion ($Y$s) was tested as a process of identification with English class ($M$). One indirect effects model was run for each of the motivation and emotion dependent variables. For this approach, I used indicator coding to compare profiles against one another—creating dichotomous $X$s—except multicategorical mediation analysis allows one to test the simultaneous contribution of each categorical mediation analysis through a comparison of relative direct effects, relative indirect effects, and an omnibus test (described in more detail in the Results section).

**Results**

Means, standard deviations, and correlations for all variables are found on Table 3.1.
Table 3.1.
Correlations and descriptive statistics.

| Variable                          | M       | SD      | 1       | 2       | 3       | 4       | 5       | 6       | 7       | 8       | 9       | 10      | 11      | 12      | 13      | 14      | 15      |
|-----------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1. Assimilation need satisfaction | 3.68    | 0.82    | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 2. Differentiation need satisfaction | 3.80    | 0.83    | 0.38**  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 3. Group identification (with English class) | 3.89    | 1.54    | 0.34**  | 0.19**  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 4. Intrinsic value                | 5.40    | 1.20    | 0.05    | 0.12**  | 0.50**  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 5. Attainment value               | 4.76    | 1.64    | 0.16**  | 0.17**  | 0.52**  | 0.64**  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 6. Utility value                  | 3.51    | 0.84    | 0.10**  | 0.08*   | 0.42**  | 0.60**  | 0.65**  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 7. Anxiety                        | 2.50    | 1.00    | -0.30** | -0.29** | -0.10** | 0.05    | -0.04   | 0.01    | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 8. Boredom                        | 1.62    | 0.89    | -0.04   | -0.06   | -0.42** | -0.60** | -0.39** | 0.78**  | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| 9. Enjoyment                      | 3.37    | 1.05    | 0.16**  | 0.14**  | 0.60**  | 0.62**  | 0.42**  | 0.42**  | -0.03   | -       | -       | -       | -       | -       | -       | -       | -       |
| 10. Hopelessness                  | 3.28    | 1.13    | -0.26** | -0.27** | -0.28** | -0.22** | 0.41**  | 0.28**  | -0.14** | -       | -       | -       | -       | -       | -       | -       | -       |
| 11. Pride                         | 1.80    | 0.83    | 0.17**  | 0.10**  | 0.57**  | 0.54**  | 0.54**  | 0.40**  | 0.02    | -0.38** | 0.59**  | -0.21** | -       | -       | -       | -       |
| 12. Shame                         | 1.72    | 0.88    | -0.32** | -0.28** | -0.17** | 0.02    | -0.07   | 0.76**  | 0.04    | -0.04   | 0.42**  | 0.00    | -       | -       | -       | -       |
| 13. Grade level                   | 0.31    | 0.46    | 0.06    | -0.02   | -0.15** | -0.11** | -0.19** | -0.10*  | -0.04   | 0.12**  | -0.10*  | -0.02   | -0.16** | -0.05   | -       | -       |
| 14. Free/reduced lunch            | 0.55    | 0.50    | -0.16** | -0.09*  | -0.08*  | -0.10*  | -0.12** | -0.02   | 0.10*   | 0.07    | -0.04   | 0.15**  | -0.09*  | 0.08*   | 0.02    | -       |
| 15. Female                        | 0.25    | 0.43    | 0.01    | 0.02    | -0.19** | -0.30** | -0.31** | -0.27** | -0.04   | 0.10**  | -0.13*  | 0.09*   | -0.22** | -0.06   | -0.03   | 0.07    |
| 16. Ethnic Minority               | 3.72    | 1.12    | -0.23** | -0.16** | -0.08*  | -0.01   | -0.00*  | 0.03    | 0.14**  | 0.02    | 0.02    | 0.14**  | -0.07   | 0.18**  | -0.03   | 0.12    | 0.03**  |

*Note.* *p < .05. **p < .01. ***p < .001.
Structural Validity of Assimilation and Differentiation Need-Satisfaction Measures

In order to test the structure of measures of assimilation and differentiation, the sample was randomly split in half. Need satisfaction scores for the first half of the sample were submitted to a Principal Components Analysis. On the basis of sampling adequacy (KMO = .74), sphericity ($\chi^2_{(15)} = 1221.35, p < .001$), and the determinant (.17), the data were appropriate for PCA. Item correlations ranged from $r = .16 (p < .001)$ to $r = .58 (p < .001)$, with the strongest correlation being found between two differentiation items (“In this class, I am satisfied with how unique I am from other students” and “In this class, I am okay with how different I am”). Two factors were extracted, which explained 67.54 percent in of the variance in responses to questions of fitting in and standing out. Each assimilation item loaded on the first component, and each differentiation item loaded on the second component. As seen in Table 3.2, these components demonstrated simple factor structure—with no cross-loadings in the rotated component matrix at a value of .3 or greater.

For the confirmatory factor analysis, two possible models were compared. A one-factor model was examined in which all assimilation and differentiation items were loaded onto a single latent variable. This was tested against a two-factor model in which the three differentiation items and the three assimilation items were loaded onto different latent variables. The two-factor model should fit the data better than the one-factor model because, theoretically speaking, assimilation and differentiation are separate social identity needs. For each of the competing models, all of the observed variables loaded significantly on the appropriate latent variables, $p < .05$. As predicted, fit indices revealed
that the two-factor model best represented the data relative to the one-factor model (two-
factor model: $\chi^2 (8) = 14.17, p = .08, \text{SRMR} = .03, \text{RMSEA} = .05, \text{CFI} = .99, \text{AIC} = 40.17$; one-factor model: $\chi^2 (9) = 224.32, p < .001, \text{SRMR} = .14, \text{RMSEA} = .27, \text{CFI} = .73, \text{AIC} = 227.67$).

Table 3.2.
Items and Descriptive Statistics from Principal Components Analysis of Measures of Fitting In and Standing Out.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Item</th>
<th>M</th>
<th>SD</th>
<th>Component 1</th>
<th>Component 2</th>
<th>$\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differentiation Need Satisfaction</td>
<td>I am okay with how different I am.</td>
<td>3.96</td>
<td>1.03</td>
<td>0.10</td>
<td>0.78</td>
<td>.75</td>
</tr>
<tr>
<td></td>
<td>I am satisfied with how unique I am from other students.</td>
<td>3.79</td>
<td>1.04</td>
<td>0.24</td>
<td>0.83</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I stand out enough from my peers.</td>
<td>3.65</td>
<td>0.99</td>
<td>0.19</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>Assimilation Need Satisfaction</td>
<td>I blend in enough with other students.</td>
<td>3.78</td>
<td>0.97</td>
<td>0.82</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The amount of similarity I feel to other students meets my standards.</td>
<td>3.60</td>
<td>1.02</td>
<td>0.82</td>
<td>0.27</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I am okay with how similar I feel to other students.</td>
<td>3.66</td>
<td>1.00</td>
<td>0.75</td>
<td>0.18</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.3.
Latent profile analysis fit indices.

<table>
<thead>
<tr>
<th>Solution</th>
<th>Deviance</th>
<th>LRT</th>
<th>BIC</th>
<th>Sample-size-adjusted BIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-profile solution</td>
<td>-1753.04</td>
<td>N/A</td>
<td>3532.37</td>
<td>3519.67</td>
</tr>
<tr>
<td>Two-profile solution</td>
<td>-1705.47</td>
<td>47.57***</td>
<td>3456.94</td>
<td>3434.72</td>
</tr>
<tr>
<td>Three-profile solution</td>
<td>-1678.31</td>
<td>27.16***</td>
<td>3422.34</td>
<td>3390.58</td>
</tr>
<tr>
<td>Four-profile solution</td>
<td>-1673.21</td>
<td>5.11</td>
<td>3431.41</td>
<td>3390.55</td>
</tr>
</tbody>
</table>

Note. BIC = Bayesian Information Criterion. LRT = Likelihood Ratio Test. Bold values represent justification for identifying the 3 profile solution as most parsimonious.
Profile Results

Results of the Latent Profile Analysis indicated that a three-profile solution provided the best fit for the data, on the basis of the Bayesian Information Criterion and the Likelihood Ratio Test (see Table 3.3). The entropy score of .71 suggests a moderate degree of separation between profiles in the three-profile solution, where maximum entropy score of 1 would indicate perfectly distinguishable profile characteristics.

The largest profile, labeled the Fulfilled Socializers (N = 331), was characterized by high levels of both assimilation and differentiation need satisfaction. Generally, these students’ personal desires to fit in and stand out were met. The smallest profile—a group of students whose desires to stand out appear particularly deprived—was labeled the Malcontented Socializers (N = 23). This group was characterized by low levels of differentiation need satisfaction and moderate levels of assimilation need satisfaction. The third profile, labeled the Acquiescent Socializers (N = 360), was characterized by moderate levels of both assimilation and differentiation need satisfaction. The extent to which these students reported fitting in and standing out appeared to be adequate, but not ideal.

An analysis of variance with Tukey-Kramer post-hoc tests, using need satisfaction measures as dependent variables, revealed that each profile was significantly different from each of the other profiles on measures of assimilation and differentiation need satisfaction. The only exception was for one profile comparison of assimilation need satisfaction. Specifically, Malcontented Socializers and Aquiescent Socializers were
distinguishable from Fulfilled Socializers on assimilation need satisfaction, but were not significantly different from one another on this variable (see Table 3.4).

Table 3.4. 
Unstandardized Means (and Standard Deviations) for the Three-Profile Latent Profile Analysis Solution.

<table>
<thead>
<tr>
<th>Need Satisfaction</th>
<th>Profile 1: FS</th>
<th>Profile 2: MS</th>
<th>Profile 3: AS</th>
<th>Profile differences: F (2, 711)</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assimilation</td>
<td>4.09± (.71)</td>
<td>3.06± (1.25)</td>
<td>3.34± (.69)</td>
<td>101.29***</td>
<td>.22</td>
</tr>
<tr>
<td>Differentiation</td>
<td>4.48± (.42)</td>
<td>1.52± (.48)</td>
<td>3.32± (.45)</td>
<td>934.74***</td>
<td>.72</td>
</tr>
</tbody>
</table>

Note. Means with same subscripts differ significantly by profile on the basis of Tukey-Kramer post hoc tests. FS = Fulfilled Socializers; MS = Malcontented Socializers; AS = Aquiescent Socializers. 
*p < .05. **p < .01. ***p < .001.

Fulfilled Socializers significantly different from Malcontented Socializers, p < .05.
Fulfilled Socializers significantly different from Aquiescent Socializers, p < .05.
Malcontented Socializers significantly different from Aquiescent Socializers, p < .05.

In terms of latent profile membership, average posterior probabilities were high for each of the three profiles (i.e., .86 for Fulfilled Socializers, .89 for Malcontented Socializers, and .86 for Aquiescent Socializers). The value of .86, for example, is the probability that the average student who is labeled as a Fulfilled Socializer belongs to that category and not a different one. These high probabilities of class membership represent clear delineation across profiles, a high level of certainty in each student’s assigned profile, and thus, a small likelihood of statistical bias that can be attributed to classification error.
Background Differences across Profiles

I tested for group differences between students in the three optimal distinctiveness need satisfaction profiles (Table 3.5). A Pearson Chi-square test revealed that profile membership did not differ by gender ($\chi^2 (2, N = 706) = 0.15, p = .93$). Students who were ethnic minorities were more likely to be classified as Malcontented Socializers than as members of either of the other profiles; and more ethnic minorities were Acquiescent Socializers than were Fulfilled Socializers ($\chi^2 (2) = 12.94, p < .01$). In addition, students on free/reduced lunch were more likely to be classified as Acquiescent than Fulfilled Socializers ($\chi^2 (2) = 8.87, p < .05$). Finally, an analysis of variance revealed no significant differences in grade level by profile ($F (2, 703) = 0.83, p = .44$).

Table 3.5.
Descriptive Information for Optimal Distinctiveness Need Satisfaction Profiles.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Profile 1: FS (n = 331)</th>
<th>Profile 2: MS (n = 23)</th>
<th>Profile 3: AS (n = 360)</th>
<th>$\chi^2$/$F$ test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>160 (47%)</td>
<td>11 (48%)</td>
<td>150 (45%)</td>
<td>$\chi^2 (2, N = 706) = 0.15$</td>
</tr>
<tr>
<td>Ethnic minority</td>
<td>64 (20%)$^{ab}$</td>
<td>11 (48%)$^{ac}$</td>
<td>99 (28%)$^{bc}$</td>
<td>$\chi^2 (2, N = 700) = 12.94^{**}$</td>
</tr>
<tr>
<td>Free/reduced lunch</td>
<td>83 (25%)$^b$</td>
<td>8 (36%)$^b$</td>
<td>128 (36%)$^b$</td>
<td>$\chi^2 (2, N = 701) = 8.87^{*}$</td>
</tr>
<tr>
<td>Grade level: M (SD)</td>
<td>10.71 (.06)</td>
<td>10.95 (.23)</td>
<td>10.80 (.06)</td>
<td>$F (2, 703) = 0.98$</td>
</tr>
</tbody>
</table>

*Note. Means with subscripts denote proportions that differ significantly by profile. FS = Fulfilled Socializers; MS = Malcontented Socializers; AS = Acquiescent Socializers.

*p < .05. **p < .01. ***p < .001.

$^a$ Fulfilled Socializers significantly different from Malcontented Socializers, $p < .05$.

$^b$ Fulfilled Socializers significantly different from Acquiescent Socializers, $p < .05$.

$^c$ Malcontented Socializers significantly different from Acquiescent Socializers, $p < .05$. 
Figure 3.1. Multicategorical mediation analysis of need satisfaction profiles tested for each dependent variable.

Note. Model serves as a guide to the coefficients presented in Table 7 and Table 8. Top half of figure shows tested mediation coefficients of Malcontented versus Fulfilled Socializers. Bottom half of figure shows tested mediation coefficients of Acquiescent versus Fulfilled Socializers. Fulfilled Socializers, coded as zero, serve as the reference group. Coefficients in parentheses correspond to total effects for Indicator 1 and Indicator 2.
Indirect and Direct Associations of Profiles with Class-related Values and Emotions

Means of the dependent variables of class-related value and emotion for the three profiles can be found on Table 3.6. Specifically, the present question is of whether feeling sufficiently similar and unique are related to strong social identification.

Following this logic, the Fulfilled Socializers—who were satisfied in terms of their assimilation and differentiation needs in their English classrooms—should express greater identification with their English classrooms than the Malcontented Socializers and the Acquiescent Socializers. Subsequently, the Fulfilled Socializers should express greater value for learning in English class, and more positive emotions during these learning experiences than the Malcontented or Acquiescent Socializers.

Table 3.6.
Means and Standard Deviations of Outcome Variables for Optimal Distinctiveness Need Satisfaction Profiles.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Profile 1: FS (n = 331)</th>
<th>Profile 2: MS (n = 23)</th>
<th>Profile 3: AS (n = 360)</th>
<th>F test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic Value</td>
<td>4.06 (.09)a</td>
<td>3.04 (.32)b</td>
<td>3.80 (.08)</td>
<td>F (2.710) = 5.91***</td>
</tr>
<tr>
<td>Attainment Value</td>
<td>5.60 (.07)ab</td>
<td>4.70 (.25)ab</td>
<td>5.28 (.06)b</td>
<td>F (2.710) = 10.50***</td>
</tr>
<tr>
<td>Utility Value</td>
<td>4.89 (.09)ab</td>
<td>4.04 (.34)ab</td>
<td>4.69 (.09)</td>
<td>F (2.700) = 3.39*</td>
</tr>
<tr>
<td>Anxiety</td>
<td>1.56 (.04)ab</td>
<td>2.07 (.18)ab</td>
<td>2.00 (.04)ab</td>
<td>F (2.707) = 26.17***</td>
</tr>
<tr>
<td>Boredom</td>
<td>3.25 (.06)</td>
<td>3.62 (.25)</td>
<td>3.30 (.06)</td>
<td>F (2.709) = 1.72</td>
</tr>
<tr>
<td>Enjoyment</td>
<td>2.67 (.06)ab</td>
<td>2.21 (.22)ab</td>
<td>2.37 (.05)</td>
<td>F (2.709) = 9.05***</td>
</tr>
<tr>
<td>Hopelessness</td>
<td>1.44 (.05)ab</td>
<td>2.56 (.19)bc</td>
<td>1.71 (.05)bc</td>
<td>F (2.709) = 29.56***</td>
</tr>
<tr>
<td>Pride</td>
<td>3.57 (.06)ab</td>
<td>2.86 (.22)ab</td>
<td>3.24 (.05)b</td>
<td>F (2.708) = 13.01***</td>
</tr>
<tr>
<td>Shame</td>
<td>1.49 (.05)ab</td>
<td>2.27 (.18)</td>
<td>1.89 (.05)b</td>
<td>F (2.708) = 26.46***</td>
</tr>
</tbody>
</table>

Note. Means with same subscripts differ significantly by profile on the basis of Tukey-Kramer post-hoc tests. FS = Fulfilled Socializers; MS = Malcontented Socializers; AS = Acquiescent Socializers.

* p < .05, ** p < .01, *** p < .001.

a Fulfilled Socializers significantly different from Malcontented Socializers, p < .05.
b Fulfilled Socializers significantly different from Acquiescent Socializers, p < .05.
c Malcontented Socializers significantly different from Acquiescent Socializers, p < .05.
This prediction was tested using Multicategorical Mediation Analysis. Due to profile differences in the prevalence of ethnic minority status and free-reduced lunch status, I adjusted for these variables in the analysis. I used indicator coding in order to quantify the effects of being Malcontented or Acquiescent Socializers relative to the reference category—Fulfilled Socializers. As represented in Figure 3.1, the relative direct effect \( (c') \) is the extent to which a Fulfilled Socializer differs from another profile on the dependent variable (e.g., intrinsic value), when equal on the mediator variable—identification with English class. Still, the question of whether identification with English class mediates the relation between profile membership and the outcome variables is of primary interest. Correspondingly, the relative indirect effect \( (a,b) \) serves as a measure of mediation. This statistic represents whether identification with English class serves as a means by which Malcontented or Acquiescent Socializers differ from the Fulfilled Socializers on a dependent variable. In addition to the specific contrast provided by the relative indirect effect, an omnibus test of the relative indirect effect reveals whether there is an overall effect of being a Fulfilled Socializer on the dependent variable through identification with English class.

**Mediation Analysis of Profile Membership, Identification, and Task Value.**

Path coefficients modeling the multicategorical mediation of profile membership on task value dependent variables are found in Table 3.7. Profile membership was directly associated with adjusted means in intrinsic value. When adjusting for group differences in identification, Malcontented Socializers reported less intrinsic value than Fulfilled Socializers \( (c') \), and Acquiescent Socializers reported less intrinsic value than Fulfilled
Socializers ($c'_2$). There were no significant associations of free/reduced lunch status or ethnic minority status with intrinsic value, $\beta = -0.10, p = .22$ and $\beta = -0.10, p = .26$ respectively. In terms of mediation overall, being a Fulfilled Socializer was indirectly associated with intrinsic value as hypothesized (Omnibus Test of Relative Indirect Effect = .03, 95 % CI [.01, .07]). Relative to Fulfilled Socializers, the intrinsic value of Malcontented Socializers was lower ($a_1b = -0.61, 95 \% CI [-1.01, -0.19]$) as a function of the association between profile membership with identification with English class ($a_1$), which, in turn, was associated with lower intrinsic value ($b$). In addition, the Acquiescent Socializers were lower than Fulfilled Socializers in intrinsic value ($a_1b = -0.40, 95 \% CI [-0.56, -0.22]$) as a function of the association between profile membership and identification with English class ($a_2$); subsequently, identification was related to lower intrinsic value ($b$).

Profile membership was directly associated with adjusted means in attainment value. When adjusting for group differences in identification, Malcontented Socializers reported less attainment value than Fulfilled Socializers ($c'_1$), as did Acquiescent Socializers ($c'_2$). Free/reduced lunch status and ethnic minority status were not significantly associated with attainment value, $\beta = -0.10, p = .22$ and $\beta = -0.10, p = .26$ respectively. In terms of mediation, relative indirect effects were consistent with predictions (Omnibus Test of Relative Indirect Effect = .03, 95 % CI [.01, .05]). Compared with Fulfilled Socializers, Malcontented Socializers expressed less attainment value ($a_1b = -0.48, 95 \% CI [-0.08, -0.17]$) due to weaker identification. Likewise,
Acquiescent Socializers expressed less attainment value than Fulfilled Socializers ($a_1b = -0.31$, 95 % CI [-0.44, -0.19]) due to weaker identification.

Like intrinsic value and attainment value, profile membership was directly associated with adjusted means in utility value. When adjusting for group differences in identification, both Malcontented Socializers ($c'_1$) and Acquiescent Socializers ($c'_2$) expressed less utility value as compared with Fulfilled Socializers. Free/reduced lunch status and ethnic minority status were not significantly associated with utility value, $\beta = -0.10$, $p = .22$ and $\beta = -0.09$, $p = .28$ respectively. An examination of an overall indirect effect revealed support for a mediation hypothesis (Omnibus Test of Relative Indirect Effect = .03, 95 % CI [.01, .06]). When contrasted with Fulfilled Socializers, Malcontented Socializers expressed less utility value ($a_1b = -0.55$, 95 % CI [-0.94, -0.21]) due to weaker identification. Similarly, Acquiescent Socializers expressed less utility value than Fulfilled Socializers ($a_1b = -0.36$, 95 % CI [-0.53, -0.21]) due to weaker identification.
Table 3.7
Path Coefficients and Standard Errors Modeling the Mediation of the Association of Fulfilled Socializer Membership with Class-related Motivation Dependent Variables (Y) through Identification with English Class (M).

| Dependent Variable Predictor | Outcome M (β for X → M) | Outcome Y (β for X → Y) | Outcome Y (β for X|M → Y) |
|------------------------------|--------------------------|--------------------------|--------------------------|
| **Intrinsic Value**          |                          |                          |                          |
| Constant                     | 0.34*** (0.07)          | -4.18*** (0.10)         | 3.93*** (0.09)           |
| Malcontented Socializers     | -0.79*** (0.23)         | -1.09*** (0.36)         | -0.49 (0.32)             |
| Acquiescent Socializers      | -0.52*** (0.10)         | -0.32* (0.15)           | 0.07 (0.14)              |
| Identification               |                          |                          | 0.76*** (0.05)           |
| **Attachment Value**         |                          |                          |                          |
| Constant                     | 0.34*** (0.07)          | -5.76*** (0.08)         | 5.56*** (0.07)           |
| Malcontented Socializers     | -0.79*** (0.23)         | -0.98*** (0.27)         | -0.50* (0.24)            |
| Acquiescent Socializers      | -0.52*** (0.10)         | -0.41*** (0.12)         | -0.10 (0.10)             |
| Identification               |                          |                          | 0.61*** (0.04)           |
| **Utility Value**            |                          |                          |                          |
| Constant                     | 0.33*** (0.07)          | -4.89*** (0.11)         | 4.66*** (0.10)           |
| Malcontented Socializers     | -0.79*** (0.23)         | 1.07** (0.38)           | -0.52 (0.35)             |
| Acquiescent Socializers      | -0.51*** (0.10)         | -0.26 (0.17)            | 0.10 (0.15)              |
| Identification               |                          |                          | 0.69*** (0.06)           |

Note. Fulfilled Socializers used as a reference group.
*p < .05. **p < .01. ***p < .001.
Mediation Analysis of Profile Membership, Identification, and Class-related Emotions. Path coefficients modeling the multicategorical mediation of profile membership on class-related emotions are found in Table 3.8. Profile membership was directly associated with adjusted means in enjoyment. When adjusting for group differences in identification, Malcontented Socializers reported less enjoyment during English class than Fulfilled Socializers ($c'_1$), and Acquiescent Socializers reported less enjoyment than Fulfilled Socializers ($c'_2$). Whereas a positive association was found between ethnic minority status and enjoyment ($\beta = .17, p = .02$), no significant association was found between free/reduced lunch status and enjoyment ($\beta = -.01, p = .86$). In terms of mediation in general, being a Fulfilled Socializer was indirectly associated with enjoyment as hypothesized (Omnibus Test of Relative Indirect Effect = .03, 95% CI [.01, .05]). Relative to Fulfilled Socializers, Malcontented Socializers experienced less enjoyment during their English class ($a_1b = -.61, 95\% \text{ CI } [-1.01, -0.19]$) due to weaker identification. In addition, the Acquiescent Socializers were lower than Fulfilled Socializers in enjoyment ($a_1b = -.31, 95\% \text{ CI } [-0.43, -0.19]$) due to weaker identification.

Profile membership was directly associated with adjusted means in hopelessness. When adjusting for group differences in identification, Malcontented Socializers reported greater feelings of hopelessness during class than Fulfilled Socializers ($c'_1$), as did Acquiescent Socializers ($c'_2$). Free/reduced lunch status and ethnic minority status were not significantly associated with pride, $\beta = -.11, p = .18$ and $\beta = -.10, p = .25$ respectively.
In terms of mediation in general, relative indirect effects were consistent with predictions (Omnibus Test of Relative Indirect Effect = -.02, 95 % CI [-0.04, -0.09]). Compared with Fulfilled Socializers, Malcontented Socializers felt more hopeless ($a_1b = .38$, 95 % CI [0.13, 0.65]) due to weaker identification. Similarly, identification mediated group differences in hopelessness between Fulfilled Socializers and Acquiescent Socializers ($a_1b = .25$, 95 % CI [0.15, 0.36])

Profile membership was directly associated with adjusted means in pride. When adjusting for group differences in identification, both Malcontented Socializers ($c'_1$) and Acquiescent Socializers ($c'_2$) expressed less pride, compared with Fulfilled Socializers. Free/reduced lunch status and ethnic minority status were not significantly associated with pride, $\beta= -.10$, $p = .20$ and $\beta = -.10$, $p = .27$ respectively. An examination of an overall indirect effect revealed support for a mediation hypothesis (Omnibus Test of Relative Indirect Effect = .02, 95 % CI [.01, .05]). When contrasted with Fulfilled Socializers, Malcontented Socializers were less likely to experience feelings of pride during class ($a_1b = -.42$, 95 % CI [-0.73, -0.11]) due to weaker identification. Similarly, identification mediated group differences in pride between Fulfilled Socializers and Acquiescent Socializers ($a_1b = -.30$, 95 % CI [-0.42, -0.18]).

Profile membership was directly associated with adjusted means in boredom. When adjusting for group differences in identification, Malcontented Socializers reported more boredom during English class than Fulfilled Socializers ($c'_1$), and Acquiescent Socializers reported more boredom than Fulfilled Socializers ($c'_2$). Free/reduced lunch status and ethnic minority status were not significantly associated with boredom, $\beta= -.11$, 95 % CI [-0.22, 0.04].
\( p = .18 \) and \( \beta = -.10, p = .25 \) respectively. In terms of mediation in general, being a Fulfilled Socializer was indirectly associated with boredom as hypothesized (Omnibus Test of Relative Indirect Effect = -.02, 95% CI [-.04, -.01]). Relative to Fulfilled Socializers, Malcontented Socializers experienced greater boredom during their English class \((a_1b = .38, 95\% \text{ CI } [0.13, 0.65])\) due to weaker identification. In addition, the Acquiescent Socializers experienced more boredom than did Fulfilled Socializers \((a_1b = .25, 95\% \text{ CI } [.15, .36])\) due to weaker identification.

Profile membership was directly associated with adjusted means in anxiety. When adjusting for group differences in identification, Malcontented Socializers reported greater feelings of anxiety during class than Fulfilled Socializers \((c'_1)\), as did Acquiescent Socializers \((c'_2)\). Free/reduced lunch status and ethnic minority status were not significantly associated with anxiety, \(\beta = -.11, p = .18\) and \(\beta = -.10, p = .25\) respectively. In terms of mediation in general, relative indirect effects did not support predictions (Omnibus Test of Relative Indirect Effect = -.0008, 95% CI [-0.004, 0.002]). Identification with English class did not mediate group differences in anxiety between Fulfilled Socializers and Malcontented Socializers \((a_1b = .01, 95\% \text{ CI } [-0.03, 0.7])\); nor did identification mediate group differences in anxiety between Fulfilled Socializers and Acquiescent Socializers \((a_1b = .009, 95\% \text{ CI } [-0.02, 0.04])\).

Profile membership was directly associated with adjusted means in shame. When adjusting for group differences in identification, both Malcontented Socializers \((c'_1)\) and Acquiescent Socializers \((c'_2)\) expressed feeling more shame during class, compared with Fulfilled Socializers. Free/reduced lunch status and ethnic minority status were not
significantly associated with shame, $\beta = -.10, p = .21$ and $\beta = -.09, p = .30$ respectively.

An examination of an overall indirect effect revealed marginal support for a mediation hypothesis (Omnibus Test of Relative Indirect Effect = -.0030, 95 % CI [-.0079, .0000]).

When contrasted with Fulfilled Socializers, Malcontented Socializers tended to experience more shame during class ($a_1b = .05, 95 \% CI [-0.0000, 0.1347]$) as a function of the association between profile membership with identification with English class ($a_1$). In turn, identification was associated with shame during class ($b$). Similarly, Acquiescent Socializers tended to experience more shame than Fulfilled Socializers ($a_2b = .04, 95 \% CI [0.0000, 0.0757]$) as a function of the association between profile membership and identification with English class ($a_2$). In turn, identification was related to shame ($b$).
Table 3.8.
Path Coefficients and Standard Errors Modeling the Mediation of the Association of Fulfilled Socializer Membership with Class-related Emotion Dependent Variables (Y) through Identification with English Class (M).

<table>
<thead>
<tr>
<th>Dependent Variable Predictor</th>
<th>Path Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Outcome M (Effect of X → M)</td>
</tr>
<tr>
<td><strong>Enjoyment</strong></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.34*** (0.07)</td>
</tr>
<tr>
<td>Malcontented Socializers</td>
<td>-0.79*** (0.23)</td>
</tr>
<tr>
<td>Acquiescent Socializers</td>
<td>-0.52*** (0.10)</td>
</tr>
<tr>
<td>Identification</td>
<td></td>
</tr>
<tr>
<td><strong>Hopelessness</strong></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.34*** (0.07)</td>
</tr>
<tr>
<td>Malcontented Socializers</td>
<td>-0.79*** (0.23)</td>
</tr>
<tr>
<td>Acquiescent Socializers</td>
<td>-0.52*** (0.10)</td>
</tr>
<tr>
<td>Identification</td>
<td></td>
</tr>
<tr>
<td><strong>Pride</strong></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.33*** (0.07)</td>
</tr>
<tr>
<td>Malcontented Socializers</td>
<td>-0.73** (0.23)</td>
</tr>
<tr>
<td>Acquiescent Socializers</td>
<td>-0.52*** (0.10)</td>
</tr>
<tr>
<td>Identification</td>
<td></td>
</tr>
<tr>
<td><strong>Boredom</strong></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.34*** (0.07)</td>
</tr>
<tr>
<td>Malcontented Socializers</td>
<td>-0.79*** (0.23)</td>
</tr>
<tr>
<td>Acquiescent Socializers</td>
<td>-0.52*** (0.10)</td>
</tr>
<tr>
<td>Identification</td>
<td></td>
</tr>
<tr>
<td><strong>Anxiety</strong></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.34*** (0.07)</td>
</tr>
<tr>
<td>Malcontented Socializers</td>
<td>-0.79*** (0.23)</td>
</tr>
<tr>
<td>Acquiescent Socializers</td>
<td>-0.52*** (0.10)</td>
</tr>
<tr>
<td>Identification</td>
<td></td>
</tr>
<tr>
<td><strong>Shame</strong></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.33*** (0.07)</td>
</tr>
<tr>
<td>Malcontented Socializers</td>
<td>-0.80*** (0.23)</td>
</tr>
<tr>
<td>Acquiescent Socializers</td>
<td>-0.51*** (0.10)</td>
</tr>
<tr>
<td>Identification</td>
<td></td>
</tr>
</tbody>
</table>

*Note. Fulfilled Socializers used as a reference group.

*p < .05, **p < .01, ***p < .001.
Discussion

Previous research examines how satisfying intergroup assimilation and differentiation are linked with social identity (e.g., Brewer, 1991; Leonardelli et al., 2010), but few studies are available to examine whether satisfying intragroup assimilation and differentiation may contribute to social identities processes. I tested the validity of distinctiveness need satisfaction measures at the intragroup level, and then explored the need satisfaction profiles of high school students using classrooms as the social group of interest. This ultimately facilitated my efforts to examine whether the simultaneous satisfaction of personal differentiation and assimilation needs might be associated with greater valuing for learning and positive affect through a process of academic identification. Results indicated that a sizable portion of the sample confirmed experiencing the simultaneous satisfaction of assimilation and differentiation needs. Importantly, results supported the theorized mediated relations of need satisfaction with academic identification, and academic identification with class-related motivation and emotion.

As research in the distinctiveness frame continues to develop, it is incumbent upon researchers to devote considerable attention to the measurement of need satisfaction, because doing so contributes to new ways of capturing the in-the-moment satisfaction of these needs. In addition, the use of sound measures helps to further demonstrate the utility of distinctiveness research in applied venues. Correspondingly, I inaugurate this undertaking as the present study is the first step toward an empirical
validation of complementary measures of assimilation and differentiation need satisfaction, with a special focus on similarity and difference. Results of both a principal components analysis using one half of the sample, and a confirmatory analysis using the other half of the sample, indicate that assimilation and differentiation need satisfaction are best represented as separate factors.

Among the limited number of studies that have previously sought to quantify assimilation and differentiation needs using self-report measures (Badea et al., 2010; Bornoldt, 2000; Gray & Rios, in press; Sheldon & Bettencourt, 2002; Vignoles, Regalia, Manzi, Golledge, & Scabini, 2006), variable-centered approaches predominate statistical analyses of these needs. A person-centered approach may be more encompassing at times, however, because it provides information on the satisfaction of assimilation and differentiation needs when these needs are juxtaposed against one another. Using a person-centered approach in the present study, I identified a cluster of students who appeared fulfilled in terms of both their assimilation and differentiation needs (i.e., the fulfilled socializers). The person-centered approach also revealed intriguing findings that have implications for the ways in which optimal distinctiveness needs are discussed in applied contexts. Assimilation and differentiation needs are typically characterized as countervailing forces that oppose one-another (Brewer, 1991; Brewer & Roccas, 2001), and we strive to resolve this tension or conflict among them. Though not a focus of the present study, one might also expect that such tensions would possibly be reflected in profiles in the present study; perhaps, for example, among a group of students whose differentiation need was completely satisfied, but whose assimilation need was not met,
or vice versa. None of the emergent profiles reflected this characterization. In addition to supporting Vignoles’ (2009) claim that similarity and uniqueness do not necessarily oppose one another, these findings should be considered in light of the sample, and the potential phenomenological accounts underlying students’ experiences in and around their school. Compared with the Fulfilled Socializers, Malcontented Socializers and Acquiescent Socializers were more likely to be members of underrepresented groups in terms of their ethnicity and socioeconomic status. But why would it be so difficult for underrepresented students, in particular, to find ways of satisfying their optimal distinctiveness needs? A Malcontented Socializer, for example, who wanted to stand out more, could self-express simply by voicing opinions when views differ from the views of classmates. Recent work by Rios (Rios Morrison, 2011), however, shows that ethnic minorities—or anyone belonging to a different social category than the numerical majority—are more likely to voice unique opinions only on topics for which they feel a sense of legitimacy or a subjective sense of entitlement (also referred to as psychological standing). Psychological standing may originate, Rios explains, from an individual’s previous experiences around the issue or from the issue’s prospects of personally affecting the individual. So, in a classroom of students, being the “only one” of a particular ethnic background or the “only one” from an economically disadvantaged community could sometimes lead to a lack of self-expression, particularly when sharing one’s diverging opinion feels inappropriate, or “out of place.” Thus, the Malcontented and Acquiescent Socializers’ low levels of differentiation need satisfaction relative to the
Fulfilled Socializers could be the result of a perceived lack of opportunity structures for asserting their uniqueness within their classrooms.

Assimilation need satisfaction was positively correlated with differentiation need satisfaction in the present study ($r = .38$, $p < .01$). This mirrors the positive association between personal distinctiveness and group inclusion ($r = .43$, $p < .01$) found by Sheldon and Bettencourt (2002). Likewise, in a study of students in grades seven through eleven, Bornholt (2000) found perceptions of self-expression to be positively related to perceptions of social connectedness ($r = .50$, $p < .001$). These results and others (e.g., Vignoles et al., 2006) suggest that, at least for studies conducted in Western societies, the more individuals are able to differentiate themselves within their groups, the more successful they are at assimilating. In this way, the previous findings speak to Malcontented and Acquiescent Socializers’ significantly lower levels of assimilation need satisfaction, as compared with Fulfilled Socializers.

Identities are important because they help us make sense of our environment and our own behavior (Oyserman & Markus, 1998). By comparing Fulfilled Socializers to Malcontented Socializers, and by comparing Fulfilled Socializers to Acquiescent Socializers, I showed need satisfaction to be indirectly associated with class-related motivation and affect through academic identification. Previous attempts have been made to demonstrate connections between feeling optimally distinct and social identification (e.g., Badea et al., 2010; Sheldon & Bettencourt, 2002), but these attempts did not capture the ways in which individuals experience these separate need states at the same time.
Hornsey and Jetten (2004) also explain that understanding how intragroup processes are related to social identity contributes to a more fluid understanding of the individual and the collective self. The indirect effects of need satisfaction on affect through identity are not only a testament to the relevance of intragroup differentiation for the adoption of social identities; these finding also speak to the possible interconnections between different levels of self-representation. The types of emotions that are expressed and experienced are tied to different levels of self-representation (Markus & Kitayama, 1991). Specifically, the individual level of self-representation is linked with the expression of ego-focused emotions that are descriptive of the person, such as pride. By contrast, the collective level of self-representation is linked with the expression of other-focused emotions that originate from the feelings of others, such as sympathy or shame.

In addition to finding that greater identification was linked with greater overall well-being (i.e., greater enjoyment and pride, and less boredom, hopelessness, and shame), what is clear is that students construed their emotional experiences in ways that were symbolic of individual and collective levels of self-representation in their classrooms, and that these feelings could be traced to their perceptions of assimilation and intragroup differentiation.

There is a human tendency to gravitate toward behaviors that reinforce the ways we see ourselves (Oysterman & Markus, 1998). Because identities provide scripts for our behavior (Markus & Wurf, 1987), it follows that social identities, such as seeing oneself as “male” or “female,” are consistently linked with students’ academic motivation in systematic ways (Eccles, 1994; 2007; Eccles, Barber, & Jozefowicz, 1999). These
findings are explained in terms of the salience of a particular social identity (e.g.,
gender); those identities, in-turn, script our identity congruent behavior (Eccles, 2009;
Oyserman & Destin, 2011). The present study has focused on students’ academic
identification with the classroom as a social group, with the assumption that the content
of such identities include proclivity toward scholastic engagement. Results suggest that
the satisfaction of assimilation and differentiation needs at the intragroup level may
trigger students’ collective self-representations as identified members of their classrooms
which, in turn, helps them to interpret academic tasks in ways that work for, and not
against, scholastic engagement.

Future Directions

A few considerations must be acknowledged when interpreting this initial
investigation of intragroup distinctiveness and academic identification. First, data
collected reflect a concurrent design. Though the indirect effects models tested in the
present study are firmly grounded in theory, the design of the present study restricts the
discussion of a causal link between these variables in the present analysis. The important
theoretical questions raised in the present research should therefore serve as a supplement
to, and not a replacement of, experimental research. In the same token, testing causality
in an experimental fashion demonstrates that one variable could cause the other, and not
that the causal effects of two variables are not reciprocal. In this light, future research
should examine the complex ways in which values and identity formation process are
intertwined. A next step for research in natural settings might be to explore how
academic values students bring with them to class affects the extent to which they feel that they “fit in” and “stand out” among their classmates.

Second, the latent profile analysis was conducted on a large sample of high school students who all answered questions about the same ingroups (i.e., their English classrooms). Future research should ascertain whether emergent profiles in the present study are a product of the school classrooms, a product of the sample, a product of background factors, or a product of English classrooms. For example, if the profiles found in the present study are in fact a product of school classrooms, then one should find similar patterns in a low-income, urban school. In such a sample, Caucasian students—who might be the ethnic minority within that school—would theoretically emerge with need satisfaction levels similar to those of the Malcontented Socializers. Such a finding would provide a more solid foundation for the present speculation that Malcontented Socializers and Acquiescent Socializers perceived fewer opportunity structures to assert their uniqueness in order to satisfy their differentiation needs.

Fortunately, identity development may be facilitated when students are presented with forms of participation that are relevant to their lived experiences (Roeser, Peck, & Nasir, 2006). Thus, through teachers’ instructional practices, students from various backgrounds may feel more invited to self-express (Ladson-Billings, 1995). In light of this, applied researchers might consider the ways in which teachers serve as “social facilitators” whose efforts foster a supportive classroom climate in ways that help students satisfy assimilation and differentiation needs. The aforementioned interpretation
is qualified, however, by the relatively low number of students in the malcontented socializers profile.

In addition, because this is the first study examining the synergism between the satisfaction of students’ needs to fit in and stand out, there was little theoretical basis for what covariates might be appropriate to use in the latent profile analysis. Indeed, the use of covariates could potentially have impacts on the profiles that emerge from this sample. Future investigations of assimilation and differentiation needs in natural environments should examine the critical role of socioeconomic status and ethnic majority versus minority status on assimilation and differentiation need arousal and satisfaction. Such directions may provide theoretical underpinnings for the use of these factors as covariates in profile-based distinctiveness research moving forward.

Informal cognitive interviewing techniques provided initial support for the cognitive validity of the optimal distinctiveness need satisfaction measures; expert social identity researchers confirmed the content validity of these measures; and factor analysis confirmed the factor structure of these measures. In doing so, the present study makes a special contribution to extending the study of fitting in and standing out to classroom settings, where the experimental manipulation of assimilation and differentiation needs would require careful consideration (or may in some cases be unsuitable). Even so, the process of validating a measure cannot be fully captured using a single sample of students. It is therefore necessary to test the structure of these measures in different ways (e.g., demonstrating divergent validity from measures of autonomy and relatedness) and with individuals of various backgrounds.
Finally, whereas I focused on whether students’ optimal distinctiveness needs were met, other researchers may be concerned with how students’ optimal distinctiveness needs are met. In such cases, researchers may want to specify the ways in which students feel assimilated and differentiated. In addition to preserving the conceptual formulations of assimilation and differentiation as needs, the two-factor solution for the blanket dimensions of need satisfaction provided in the present study serve as a frame that can accommodate subcomponents in the course of more detailed elaboration.

**Theoretical and Practical Contributions**

The present research represents, to my knowledge, the first attempt to demonstrate separate factor structures for measures of assimilation and differentiation need satisfaction; the first use of a person-centered clustering approach to characterize individuals based on their intragroup assimilation and differentiation need satisfaction; and the first examination of how these two factors conjoined are linked with identity, motivation, and emotion. Situated at a critical juncture in distinctiveness research between theoretical and applied significance, the present research is conceptually and practically informative in the following ways:

1) It contributes to an understanding of social identity by showing that intragroup assimilation and differentiation needs can be simultaneously met without undermining ingroup identification.

2) It contributes to an understanding of distinctiveness research by showing support for the claims of Vignoles (2009) that intragroup assimilation and differentiation
needs are not necessarily in direct conflict with one another, but work together in meaningful ways.

3) It contributes to an understanding of identity-based motivation by showing that the satisfaction of assimilation and differentiation needs in classroom settings has positive, indirect connections to how much students value learning, via academic identification.

4) It contributes to an understanding of adolescent well-being by showing that—via academic identification—the satisfaction of distinctiveness needs in classroom settings is indirectly associated with greater enjoyment and pride, and with less boredom, hopelessness, and shame.

5) It contributes to the applied literature on school belonging by showing the relevance of not only fitting in, but also standing out, for adolescent motivation and affect. According to Leary and Cox (2008), “maximizing one’s social acceptance requires people to be sufficiently assimilated to share fundamental attributes with the group, but sufficiently differentiated to be uniquely valued” (p. 33).

6) Above all, it contributes to education reform efforts by highlighting uniqueness as an important social dimension in classroom environments—as previous researchers have convincingly demonstrated the need for improved social climates in schools (Juvonen, 2007).
Conclusion

Until the present study, the notion that fitting in while standing out from peers might play an important role in promoting, as opposed to undermining, motivation and positive affect, has remained dormant in research on the identity and school belonging. Here, initial empirical support for this theoretical link was made explicit in a study of high school students who expressed stronger academic identification with their classroom communities when they were able to assimilate and differentiate within these environments. The take-home message from this study is not solely that similarity and uniqueness may serve as social identity needs; more broadly, there are real-life situations in which groups may embrace the self-expression among their members. The results of the present research suggest that such conditions may be fertile ground for cultivating productivity and mental health. By contributing to both the theoretical and practical branches of distinctiveness research, the present study serves as an entrée into future investigations of the social identity benefits of the intragroup needs for assimilation and differentiation among adolescent populations.
Chapter 4

Understanding STEM-Focused High School Students’ Perceptions of Task Importance: The Role of “Fitting In” and “Standing Out” in Math Class

Motivation research continues to play a critical role uncovering the factors that attract young people to the STEM workforce. As noted by President Obama (2011), “The truth is, we have everything we need to compete [globally]: bold entrepreneurs, bright new ideas, and world-class colleges and universities. And, most of all, we have young people just brimming with promise and ready to help us succeed. All we have to do is tap that potential” (para 13).

Researchers have devoted considerable attention to examining the value students place on learning in science, technology, engineering, and mathematics (STEM) disciplines. This research demonstrates that the more students value learning about a particular academic discipline, the more likely they will engage in that academic subject on their own volition (e.g., future course enrollment and career choices) (Eccles, Barber, & Jozefowicz; 1999; Updegraff, Eccles, Barber, & O’Brien; 1996). Yet students can engage in a number of achievement behaviors within a single course—from jotting down notes, to asking questions, to working in groups, to taking tests—and little is known about the value students place on specific achievement behaviors within an academic domain.
A fine-grained approach of examining students’ valuing of specific achievement behaviors becomes more important when considering a subpopulation of adolescents students who—perhaps due to their concerns for the environment, national security, public health, human life quality, or other reasons—have chosen to engage in the rigorous study of STEM subjects by attending STEM-focused high schools. These individuals already define themselves as future contributors to the STEM workforce, and educators must enhance these students’ motivation to an even greater extent so they can reach their promise.

Students’ values can be traced back, at least in part, to their identities and identity-formation processes (Eccles, 2009). Researchers have described adolescents as preoccupied with understanding who they are (Arnett, 2000; Erikson, 1968; Keniston, 1971) and how they interact socially with others (Harter, 1995). Social needs have received considerable attention in the form of interpersonal relationships (e.g., Deci, Vallerand, Pelletier, & Ryan, 1991; Juvonen, 2007; Solomon, Battistich, Kim, & Watson, 1997), but less attention has been directed toward understanding the motivational significance of students’ personal concerns for fitting in (similarity) and standing out (uniqueness) at school. To begin filling this chasm, the present research examines whether systematic variation in the importance students place on specific achievement behaviors may be explained by the extent to which such behaviors serve as vehicles for satisfying their personal desires to assimilate and to differentiate.
Task Value

The expectancy value model of achievement performance and choice developed by Eccles and colleagues (Eccles et al., 1983) is a motivational framework that explains expectancies and values as positively related constructs that contribute to students’ achievement behaviors. According to the Eccles and Wigfield (2002), the greater a student expects to perform, the better the student does. More relevant to understanding students’ decisions to pursue STEM subjects and careers is task value. Specifically, the more a student values participating in a domain such as mathematics, the greater the chance the student will participate in the mathematics when participation is optional.

Task Importance

Expectancy-Value theorists (Battle, 1965; 1966; Crandall, 1969) refer to attainment value as the importance a student places on achieving on a task for that individual’s self-image. Attainment value—also referred to as task importance (Eccles & Wigfield, 1995)—can be viewed as the extent to which a task serves an identity function. For example, a student should be more motivated to achieve in mathematics when the engaging in math is consistent with the student’s self-schema. Alternatively, if math achievement is inconsistent with the student’s self-image, the student should be much less likely to enact math achievement-related behaviors. In a similar vein, the Identity Based Motivation Model (Oyserman (2007; Oyserman & Destin, 2010) explains that exerting effort on identity congruent tasks should be viewed by students as worthwhile, whereas exerting effort on tasks that are identity incongruent may be viewed as pointless.
Thus, multiple theoretical perspectives converge on the notion that students are drawn to, and should persist on, tasks that confirm central aspects of their identities.

Previous research documents the influence of task importance on adolescents’ achievement-related choices in mathematics. In a study of junior high school students, Battle (1965) predicted that students who expressed greater task importance would demonstrate greater persistence. The investigator’s hypothesis was supported; students persisted longer on a math problem set when they viewed math achievement as important. Meece, Wigfield, and Eccles (1990) found that adolescents who assigned importance to mathematics also expressed greater intentions of enrolling in elective math courses. Studies also have measured task importance as part of an overall task value construct. Eccles et al. (1983) proposed task value as a function of four components—attainment value (importance), utility value (usefulness), intrinsic value (enjoyment), and cost (what is lost when engaging in the task); and demonstrated links between adolescents’ math-based task values and their math course enrollment plans. In terms of behavioral outcomes, task values predict adolescents’ actual course enrollment in advanced math courses (Updegraff, Eccles, Barber, & O’Brien; 1996); a finding that is consistent with studies of task value at the collegiate level (Feather, 1988). Finally, in terms of occupational choices, high school students who value logic-based tasks (math and computing) express occupational aspirations of pursuing science and math-intensive careers (Eccles, Barber, & Jozefowicz; 1999). The outcomes of task importance have received considerable attention, but the antecedents of task importance warrant greater attention in light of recent theoretical discussions around identity and motivation.
Eccles (2009) discusses how identities and identity-formation processes may be responsible for task values, stressing connections between identity and task importance. Specifically, Eccles pinpoints seven dimensions that may influence task importance: 1) personalities and capabilities, 2) long-term goals, 3) gender roles, 4) broader institutional values and societal standards, 5) personal desires, 6) ideal and ought future possible selves, and 7) social scripts regarding contextually appropriate behavior. Eccles proposes that individuals seek to demonstrate that they possess these characteristics, view certain tasks as vehicles for confirming these self-views, and thus place greater importance on these tasks. In the present study, I put Eccles’s postulation to empirical scrutiny—with an emphasis on how task importance is influenced by adolescents’ personal desires to assimilate with, and differentiate from, their peers.

“Fitting In” and “Standing Out”

According to Optimal Distinctiveness Theory (Brewer, 1991), one primary psychological concern of human beings is how we relate to others. For this reason, the experience of being excessively different from others around us can be aversive. Feeling socially connected is not only adaptive, but also necessary for healthy human functioning (Baumeister & Leary, 1995). Whether we are able to connect to others on the basis of physical qualities, beliefs, abilities, attitudes, or behaviors, we want to feel some degree of overlap between our own characteristics and those of others in our social environments. In ODT, this desire for similarity is referred to the need for assimilation. We also have a need to understand how we are different from others (Brewer, 1991). Uniqueness is a critical aspect of understanding who we are (Vignoles, 2009). Therefore,
perceiving contrast between one’s own characteristics and those of others contributes to a sense of differentiation. Our personal desires to assimilate and differentiate regulate one another as we strive to strike a balance so that both needs have been sufficiently satisfied (Brewer, 1991). Thus, fitting in and standing out at the same time allow us to affiliate with others while maintaining a sense of personal integrity.

Optimal Distinctiveness Theory has implications for understanding connections between the social needs of students and their achievement beliefs and behavior. Because assimilation and differentiation are social needs, one would expect that the way students navigate their academic environments would reflect attempts to satisfy these needs. Regarding achievement behavior specifically, students should be drawn to achievement tasks that are perceived as satisfying personal desires to fit in and stand out. At present, there is a limited amount of research that bears directly on the question of whether a student’s needs for both assimilation and differentiation contribute to the student’s motivational patterns in school.

Recent studies conducted by Gray and Rios (in press) provided initial support for the notion that students actively pursue academic tasks in service of satisfying their needs for assimilation and differentiation. In Study 1, the researchers examined whether students’ perceptions of academic tasks for satisfying assimilation and differentiation needs were associated with the importance students placed on these tasks for their self-definition (task importance). Gray and Rios asked 19 undergraduate students in an Educational Psychology course to rate 16 achievement behaviors that students enrolled in this course might enact (e.g., reading for class, writing papers, participating in class
discussion). There was a positive association between tasks seen as satisfying students’ assimilation needs and ratings of task importance, as well as a positive association between tasks seen as satisfying students’ differentiation needs and ratings of task importance.

In Study 2, Gray and Rios experimentally tested the extent to which undergraduates would persist longer and perform better on a word task they perceived to satisfy these social needs. Using a recall exercise from Pickett, Silver, and Brewer (2002), Gray and Rios heightened assimilation needs by asking some students to write about times in which they felt that they stuck out like a sore thumb; and heightened the differentiation needs by asking other students to write about times in which they felt so similar to others around you that you didn’t have your own identity. The researchers then asked students to play a word game known as Boggle™, while the students were led to believe that success at Boggle served as an indication of their “blendability” (ability to fit in) or “uniqueness/quirkiness” (ability to stand out). Students performed better when achievement was framed as a tool for either distinguishing oneself when wanting to stand out, or as a tool for gaining peer acceptance when wanting to fit in—a finding that was mediated by students’ persistence on the task.

The work of Gray and Rios represents an important first step in understanding students’ achievement patterns as a function of their personal desires to fit in and stand out. Results of Study 1 indicated that perceptions of assimilation and differentiation both contribute to the importance students place on academic tasks. Specifically, even within
the same academic subject, students place greater importance on tasks when these tasks are perceived as satisfying assimilation or differentiation needs. Results of Study 2 demonstrated directionality—suggesting that students will self-regulate and ultimately achieve when they perceive a task as possibly fulfilling a social need that has been triggered.

**Overview of Research**

The primary objective of the present study was to explore whether the importance students place on math tasks could be explained by their perceptions of these tasks as helping them assimilate with, or differentiate from, their peers. Study 1 by Gray and Rios (in press) is important for understanding links between social needs and task importance, though questions remain as to whether their findings would hold when accounting for between-person variation in task importance ratings, or whether the strength or direction of task assimilation and task differentiation effects on task importance vary as a function of between-persons variables. In addition, since Gray and Rios used a sample of college students taking an elective course, the argument could be made that there is more variation in students’ responses to be explained by the nature of the course alone. One might attribute these findings to the sample having little history of involvement within the academic subject area of educational psychology; and that such findings would be different among students studying a traditional academic subject for which they have identified as an academic area of focus. Thus, accounting for the aforementioned concerns would provide stronger theoretical support for the notion that students place more importance on academic tasks they perceive as satisfying their social needs. Indeed,
more stringent tests are needed to be sure that such links exist in natural classroom settings.

In examining the task importance, it is necessary to adjust for background factors that may account for students’ motivational patterns in STEM subjects. First, previous research indicates that female adolescents value math less than male students (Eccles et al., 1983; Eccles, Adler, & Meece, 1984). Second, expectancies for success are positively related to students’ valuing of math (Eccles & Wigfield, 1995). Third, the value that adolescents place on learning math declines throughout adolescence (Wigfield & Eccles, 1992). Last, research indicates possible links between socioeconomic status (SES) and students’ values in STEM. Sandoval and Harven (2011) found that students from lower SES backgrounds expressed greater value for inquiry tasks in science. The authors explained the association as a tentative finding that warrants further investigation in future studies of students’ motivational beliefs. In light of these previous findings, I accounted for possible relations of background characteristics to task importance (including gender, expectations of success, age, and SES).

The importance students place on academic tasks may also be linked with their perceptions of the messages teachers convey about achievement (Ames & Archer, 1988; Maehr & Midgley, 1996). These “goal-related messages that are made salient in the achievement setting” are known as goal structures (Kaplan, Middleton, Urdan, & Midgley, 2002, p. 24). Specifically, through their interactions and dialogue with their students, teachers may place a premium on the development of competence in their classroom. Thus, a teacher’s emphasis of learning, effort, and improvement is referred to
as a *mastery goal structure*. Teachers also may place a premium on the demonstration of competence in their classroom. The term *performance goal structure* describes teacher practices that include showcasing the work of high-performing students as examples to others, or fostering a sense of competition among students. Goal structures are related to students’ motivational beliefs such that students express less academic value when teachers emphasize performance (e.g., Anderman et al., 2001) and more academic value when teachers emphasize mastery (e.g., Anderman, Cupp, Lane, Zimmerman, Gray, & O’Connell, 2011). Thus, I accounted for perceptions of classroom goal structures when assessing contribution of assimilation and differentiation on task importance.

Whereas ODT proposes that all humans want to assimilate and differentiate to some degree, the perceived attractiveness of assimilating and differentiating may vary from person to person (Brewer & Roccas, 2001). It is possible that the effects found by Gray and Rios might depend on how attractive students found fitting in and standing out to be. For this reason, I account for perceptions of the positive valence (attractiveness) of assimilation and differentiation.

The present study tests the findings of Gray and Rios (in press) with greater empirical scrutiny. I sought to demonstrate that even among students with a track record of rigorous involvement in a traditional academic subject (mathematics), task importance could be explained by their perception of tasks as social mediums for helping them assimilate and differentiate. In a sample of STEM-focused high school students, the present study addresses two specific hypotheses.
1) Students will perceive tasks that satisfy their need to “fit in” (task assimilation) as more important than tasks that are not perceived to satisfy their need to fit in—even when accounting for gender, expectations of success, age, SES, and students’ perceptions of classroom goal structures.
   a. The predicted positive association between task assimilation and task importance should be stronger the more attractive students perceive fitting in to be.
   b. The predicted positive association between task assimilation and task importance should be stronger the more students perceive their teacher to focus on mastery, and should be weaker the more students perceive their teacher to focus on performance.

2) Students will perceive tasks that satisfy their need to stand out (task differentiation) as more important than tasks that are not perceived to satisfy their need to stand out—even when accounting for gender, expectations of success, age, SES, and students’ perceptions of classroom goal structures.
   a. The predicted positive association between task differentiation and task importance should be stronger the more attractive students perceive standing out to be.
   b. The predicted positive association between task differentiation and task importance should be stronger the more students perceive their teacher to focus on mastery, and should be weaker the more students perceive their task to focus on performance.
Method

Participants

Participants in the present study were 106 students from a small, STEM-focused high school in the Midwest. This STEM high school is part of a state public school system and is not a charter school. Students who are passionate about STEM enter this school through a lottery-based system. In addition to taking courses at the high school, students are required to engage in academic experiences at a university, including research and introductory level coursework. Students who were currently enrolled in a math course at the STEM high school (and were not concurrently enrolled in a math course at the partnering university) participated in this study. In the sample, 43% were freshmen, 29% were sophomores, 20% were juniors, and 8% were seniors. The price students paid for lunch was used as a proxy for household income, where 70% of students paid full price for lunch, and 30% received a free school or reduced-price lunch. In terms of gender, 58% of the participants were female. In terms of ethnicity, 50% were Caucasian, 24% African American, 6% Asian/Pacific Islander, 8% Latino/a, and 12% reported being multiracial or of other ethnic backgrounds.

This sample is reflective of the demographics of the school. During the 2010-2011 academic year when these data were collected, the school had a total enrollment of 336 students. In terms of ethnicity, 55% of the school’s student population was Caucasian, 26% African American, 9% Multiracial, 5% Asian, 4% Latino, and <1%
Native American. Additionally, 30% of the school’s population was eligible for free or reduced-price lunch.

**Procedure**

**Survey development.** I sought to capture the breadth of math activities that students at this school could potentially enact. Two math teachers at the high school were provided a list of 16 achievement tasks from Gray and Rios (2011). Each teacher was approached separately and asked: *What types of activities do students typically engage in before, during, and after your math classes?* Each teacher amended the original list by naming math-related academic tasks that students at this high school engaged in, regardless of classification or the math subject being taught. The final list consisted of a total of 18 math-related academic tasks. The following week, these teachers were again interviewed about the wording of the academic tasks. Through these informal interviews, the teachers critiqued the wording of each of the tasks in an effort to make the tasks easily interpretable to students for the final online survey.

After the online survey was constructed, a classroom of students (N = 21) served as a focus group during their math period. These students reviewed questions pertaining to math-related academic tasks. Two questions were about task importance and two questions were about students' social perceptions of the academic tasks. I posed cognitive interviewing questions to the group based on Karabenick et al. (2006) (i.e., *What is this question trying to find out from you?*; *Which answer would you choose?*; *Can you explain to me why you chose that answer?*). Each item was discussed until there
was consensus among the class on clear wording for the item. In general, students indicated that the items were clear, and no substantial changes were made.

**Data collection.** On the day of survey administration, I gave instructions for the study to the entire student body during morning announcements. The study was described as an investigation of students' perceptions of their high school learning environment. All students were then dismissed to their homeroom classes to complete the survey.

I took steps to ensure the privacy of all students while completing the questionnaire. Specifically, all students were told to bring their school-issued laptops to their first period classes and to check their school email accounts for an online link to the survey. Administering the survey electronically facilitated my efforts to present the survey questions in randomized order such that participants who began working on the survey at the same time would be presented with different questions.

Research assistants were present to ensure that students were able to access their email accounts and the online survey. Within the email, the text read, 1) *Click on this link if you are currently enrolled in a mathematics course at this high school* and 2) *Click on this link if you are NOT currently enrolled in a mathematics course at this high school.* The first link in the email gave students access to the present study. The second link gave students who were not eligible for the present study access to a different online survey that was comparable in length. The survey used in this study was approximately 10-15 minutes in length. Students were instructed to work quietly on their computers after submitting their survey electronically.
The design of the present study was approved by the Ohio State’s Institutional Review Board. Because school where I conducted the present study seeks to optimize STEM learning for all students, donors, researchers, and prospective students frequently visit to observe classroom practices and student engagement. For this reason, the school may determine whether adequate protections are in place before visitors are allowed to interact with students and teachers. Thus, the school provided consent that students could participate in the present study. Verbal assent was obtained from students before the study was conducted by reading students a script about the study. Specifically, in order to determine participation rate—while at the same time protecting the integrity of those students who chose not to participate—all students were asked to click on the web link for the survey, but close the webpage immediately and work quietly on their computers on an activity of their choosing if they did not plan to participate in the study. I obtained a headcount of participating and non-participating students. Of the students who were eligible for the present study, 85% chose to participate.

Measures

For the online survey, participants were first prompted to indicate their math teacher before beginning the study. Next, a question was presented at the top of the screen. Below was a list of 18 tasks and an accompanying Likert-type response scale beside each task. Each student was asked to rate each of the 18 math-related academic tasks (e.g., doing homework, working out problems on the board, being on time, taking tests) separately in terms of task importance and in terms of how much engaging in the task would help the student fit in and stand out in her or his math class. A full listing of
each of the academic tasks can be found in Table 4.1. The various academic tasks were presented in an order that was unique to the student, and the order changed each time students were presented with a new question about the tasks. In addition to affording students privacy during survey administration, the randomized presentation of the survey items enhanced my confidence that significant findings in support of my hypotheses could be attributed to deliberative responses by students (as opposed to cursory responses that were marked without reading the survey items). Students were then asked about their perceptions of the motivational climate of their math classroom, and about how much the idea of fitting in and standing out appealed to them.
Table 4.1.
Descriptive Statistics for Intra-Individual Level Variables in Descending Order of Task Importance.

<table>
<thead>
<tr>
<th>Academic Task</th>
<th>Mean (SD)</th>
<th>Task Importance Reliability</th>
<th>Mean (SD)</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paying attention</td>
<td>5.92 (1.51)</td>
<td>0.82</td>
<td>4.55 (2.00)</td>
<td>4.86 (2.04)</td>
</tr>
<tr>
<td>Asking questions</td>
<td>5.76 (1.43)</td>
<td>0.69</td>
<td>4.66 (2.01)</td>
<td>5.13 (1.87)</td>
</tr>
<tr>
<td>Taking Notes</td>
<td>5.75 (1.55)</td>
<td>0.83</td>
<td>4.54 (2.07)</td>
<td>4.58 (2.01)</td>
</tr>
<tr>
<td>Doing in-class assignments</td>
<td>5.49 (1.35)</td>
<td>0.70</td>
<td>4.58 (1.90)</td>
<td>4.45 (1.93)</td>
</tr>
<tr>
<td>Participating in class discussions</td>
<td>5.38 (1.60)</td>
<td>0.81</td>
<td>4.66 (1.92)</td>
<td>5.13 (1.71)</td>
</tr>
<tr>
<td>Working out problems on the board</td>
<td>5.35 (1.49)</td>
<td>0.85</td>
<td>4.41 (1.94)</td>
<td>4.87 (1.94)</td>
</tr>
<tr>
<td>Doing homework</td>
<td>5.28 (1.59)</td>
<td>0.75</td>
<td>4.28 (2.03)</td>
<td>4.79 (1.89)</td>
</tr>
<tr>
<td>Taking tests</td>
<td>5.21 (1.64)</td>
<td>0.69</td>
<td>4.35 (2.14)</td>
<td>4.32 (2.00)</td>
</tr>
<tr>
<td>Being on time for class</td>
<td>5.18 (1.70)</td>
<td>0.77</td>
<td>4.53 (2.03)</td>
<td>4.41 (2.10)</td>
</tr>
<tr>
<td>Taking quizzes</td>
<td>5.13 (1.63)</td>
<td>0.78</td>
<td>4.21 (2.10)</td>
<td>4.20 (1.88)</td>
</tr>
<tr>
<td>Reviewing notes for class</td>
<td>5.12 (1.71)</td>
<td>0.82</td>
<td>3.92 (2.11)</td>
<td>4.19 (1.97)</td>
</tr>
<tr>
<td>Working in groups</td>
<td>5.09 (1.69)</td>
<td>0.82</td>
<td>4.96 (2.01)</td>
<td>4.39 (1.92)</td>
</tr>
<tr>
<td>Teaching other students</td>
<td>5.05 (1.47)</td>
<td>0.71</td>
<td>4.71 (2.04)</td>
<td>4.89 (1.86)</td>
</tr>
<tr>
<td>Working on class projects</td>
<td>4.75 (1.67)</td>
<td>0.75</td>
<td>4.67 (1.93)</td>
<td>4.04 (2.04)</td>
</tr>
<tr>
<td>Sharing answers with classmates</td>
<td>4.64 (1.74)</td>
<td>0.82</td>
<td>4.64 (1.96)</td>
<td>4.20 (1.92)</td>
</tr>
<tr>
<td>Attending after-school tutoring</td>
<td>4.57 (1.80)</td>
<td>0.79</td>
<td>3.61 (1.96)</td>
<td>4.04 (2.16)</td>
</tr>
<tr>
<td>Doing warm-up problems</td>
<td>4.41 (1.79)</td>
<td>0.80</td>
<td>3.88 (1.93)</td>
<td>3.92 (1.96)</td>
</tr>
<tr>
<td>Using the school's online math help resource</td>
<td>3.85 (2.00)</td>
<td>0.86</td>
<td>3.46 (2.05)</td>
<td>3.52 (2.08)</td>
</tr>
</tbody>
</table>

Note. A score of “1” represents lowest value of task importance, assimilation and differentiation measures; a score of “7” represents highest value on each variable.
**Task importance.** Task value was measured using two items adapted from Eccles and Wigfield's (1995) task value scale. Specifically, for each task, students were asked: *Is it worthwhile for you to put effort into this task?* (1 = Not at all worthwhile, 7 = Very worthwhile) and *I feel that being good at this task is:* (1 = Not at all important, 7 = Very important). For ratings of task importance, each of the 18 tasks demonstrated acceptable internal consistency with reliability coefficients ranging from .69 to .86. Means, standard deviations, and reliability estimates can be found on Table 4.1.

**Task assimilation and task differentiation.** To measure the extent to which each of the 18 tasks would help students assimilate and differentiate, single item measures were employed from previous repeated ratings studies of assimilation and differentiation (Gray & Rios, in press). The items read as follows: *How much does being engaged in this task help you fit in with other students?* and *How much does being engaged in this task help you stand out from other students?* (1 = Not at all, 7 = Extremely). These items in particular were used because 1) as noted by Gray and Rios, these items are reflective of conceptualizations of assimilation and differentiation; and 2) the use of single items reduces cognitive load on participants when repeatedly rating stimuli on the same dimensions (Vignoles, 2004). The use of single items is a sound approach in repeated-ratings research (e.g., Reis, Sheldon, Gable, Roscoe, & Ryan, 2000); but extra care was taken to ensure that students understood these items. Students in the focus group articulated that they viewed these items as tapping into their perceptions of the extent to which the 18 tasks would contribute to how distinct or similar they felt, relative to their
peers. Additionally, when responding to the question, *How clear is this item to you?* (1 = *Not at all clear*, 5 = *Very Clear*), focus group participants expressed that both the task assimilation item (clarity $M = 4.48$, $SD = .87$) and the task differentiation item were very clear (clarity $M = 4.57$, $SD = .60$).

**Classroom goal structures.** Students completed measures on the extent to which they perceived that their teachers emphasized the development (mastery goal structure) and demonstration (performance goal structure) of competence in the classroom. Three-item scales of perceived mastery and performance goal structures previously validated by Ciani, Middleton, Summers, and Sheldon (2010) were used in the present study. The scales contained selected items from the Patterns of Adaptive Learning Survey (Midgley et al., 2000). Scale items representing perceived mastery goal structure were as follows: *My teacher really wants us to enjoy learning new things; My teacher wants us to understand our work, not just memorize it; My teacher thinks mistakes are okay as long as we are learning* (from 1 = *Not at all true* to 5 = *Very true; $\alpha = .83$). Scale items representing perceived performance goal structure were as follows: *My teacher points out those students who get good grades as an example to all of us; My teacher lets us know which students get the highest scores on a test; My teacher tells us how we compare to other students* (from 1 = *Not at all true* to 5 = *Very true; $\alpha = .84$).

**Positive valence (attractiveness) of assimilation and differentiation.** The positive valence of task assimilation and task differentiation was assessed using two items each: Specifically, students were asked: *In general, "fitting in" ["standing out"] at school seems like a positive thing to do; I like the idea of ["fitting in"] ["standing out"]*
at school. (from 1 = Not at all true to 5 = Very true; assimilation connotation $\alpha = .73$, differentiation connotation $\alpha = .70$).
Table 4.2.
Descriptive Statistics for Inter-Individual Level Variables.

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD)</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td>4.44 (1.19)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>2. Expected Grade</td>
<td>6.16 (2.60)</td>
<td>-0.35**</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>3. Lunch Price (Proportion)</td>
<td>0.30 (0.46)</td>
<td>0.08</td>
<td>-0.28**</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>4. Mastery Goal Structure (3 Item Measure)</td>
<td>3.77 (1.12)</td>
<td>-0.10</td>
<td>0.22*</td>
<td>-0.09</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>5. Performance Goal Structure (3 Item Measure)</td>
<td>2.27 (1.27)</td>
<td>0.00</td>
<td>0.01</td>
<td>0.09</td>
<td>0.03</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>6. Gender (Proportion)</td>
<td>0.42 (0.50)</td>
<td>-0.11</td>
<td>-0.01</td>
<td>-0.08</td>
<td>0.12</td>
<td>0.01</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>7. Positive Valence of Assimilation</td>
<td>3.16 (1.22)</td>
<td>-0.26**</td>
<td>0.17</td>
<td>0.09</td>
<td>0.01</td>
<td>0.07</td>
<td>0.04</td>
<td>--</td>
</tr>
<tr>
<td>8. Positive Valence of Differentiation</td>
<td>3.57 (1.09)</td>
<td>-0.12</td>
<td>0.04</td>
<td>0.02</td>
<td>0.06</td>
<td>0.21*</td>
<td>-0.07</td>
<td>0.42**</td>
</tr>
</tbody>
</table>

*Note.* Lunch price coded as 0 = Full Price, 1 = Free/Reduced Price; Gender coded as 0 = Female, 1 = Male.
Results

Means standard deviations, and correlations are presented in Table 4.2. The correlations in Table 4.2 indicate no potential multicollinearity issues among predictor variables; the strongest correlation was between students’ perceptions of the positive valence of assimilation and the positive valence of differentiation ($r = .42$, $p < .01$).

I predicted that students’ perceptions of achievement tasks that satisfy assimilation and differentiation needs would explain variation in the importance students placed on these tasks. Within a repeated ratings approach, it was necessary to remain sensitive to potential independence violations, the inflation of Type-I error, and biased parameter estimates. Thus, the use of Hierarchical Linear Modeling (HLM; Raudenbush & Bryk, 2002) with Full Maximum Likelihood estimation facilitated my efforts to account for the nested structure of the continuous data by specifying variables at the appropriate unit of analysis; with tasks representing level-1 units and individual students representing level-2 units. A within-persons HLM model was tested incrementally to assess improvement in model quality as predictors were added to the model.

Level-1 predictors in the multilevel model are represented by the equation below. I modeled achievement tasks using effect coding in order to enhance interpretation of the intercept. Thus, the intercept represents the overall mean rating of task importance across tasks.

\[
\text{Task Importance} = \pi_0 + \pi_1 \text{(Task 1 Effect Code)} + \pi_2 \text{(Task 2 Effect Code)} + \ldots + \pi_{17} \text{(Task 17 Effect Code)} + \pi_{18} \text{(Task Assimilation)} + \pi_{19} \text{(Task Differentiation)} + e_i.
\]
Level-2 predictors included in the multilevel model are expressed below, with variables modeled on the intercept, the slope for task assimilation ($\pi_{18}$), and the slope for task differentiation ($\pi_{19}$).

$$
\pi_0 = \beta_{00} + \beta_{01} \text{ (Age)} + \beta_{02} \text{ (Expected Grade)} + \beta_{03} \text{ (Lunch Price)} + \beta_{04} \text{ (Mastery Goal Structure)} + \beta_{05} \text{ (Performance Goal Structure)} + \beta_{06} \text{ (Gender)} + r_{0i}.
$$

$$
\pi_{18} = \beta_{180} + \beta_{181} \text{ (Mastery Goal Structure)} + \beta_{182} \text{ (Performance Goal Structure)} + \beta_{183} \text{ (Positive Valence of Assimilation)} + r_{18i}.
$$

$$
\pi_{19} = \beta_{190} + \beta_{191} \text{ (Mastery Goal Structure)} + \beta_{192} \text{ (Performance Goal Structure)} + \beta_{193} \text{ (Positive Valence of Differentiation)} + r_{19i}.
$$

The final model was built in five steps. First an intercepts-only model was tested, followed by a random-intercepts model that included academic tasks as effect codes at level-1. Next, a contextual model was tested in which I added background variables to the model. By including these background factors, I could examine associations of subsequent variables to ratings of task importance when accounting for age, expected grade, lunch price, gender, and lunch price (proxy for SES). Each continuous level-2 predictor was grand-mean centered. I then included two random coefficients, where task assimilation and task differentiation were modeled as person-mean centered level-1 variables. In the final model, I included students’ perceptions of mastery goal structure and performance goal structure as between-persons predictors of the intercept. For the random effects of task assimilation and task differentiation, the final model included mastery goal structure, performance goal structure, and positive valence on the slopes for task assimilation and differentiation. The first four models are reported in terms of their
efficacy for explaining variance at the intra-individual and inter-individual level. The final model is reported in terms of both fixed effects and random effect.

**Preliminary Models**

The one-way random effects analysis of variance model determined the degree of between-individual variance, or intraclass correlation (ICC). In the present study, the ICC represents the amount of variability that is attributed to task differences across students (i.e., percentage of level-2 variance) but that is not attributed to importance ratings within the same person (i.e., level-1 variance). Results revealed that a significant proportion of the variance in a student’s repeated ratings of task importance could be attributed to between-person differences. Specifically, 44% of the variation in task importance can be attributed to differences across students.

Disregarding specific tasks, there was considerable variation across individuals in this one-way random effects model, $\chi^2(99) = 1498.74, p < .001$.

I used the Raudenbush and Bryk (2002) convention for determining proportion of variance accounted (PVAF) for at Level 1 ($\frac{\hat{\sigma}_b^2 - \hat{\sigma}_f^2}{\hat{\sigma}_b^2}$) and Level 2 ($\frac{\hat{\tau}_{qqb} - \hat{\tau}_{qqf}}{\hat{\tau}_{qqb}}$). When using this formula, the variance components of two all-but-identical models are compared, except the second model includes additional predictors (fitted model) above and beyond the variables that are included in the first model (base model). The only difference between the two models is that the additional predictors of interest are included in the fitted model. The PVAF therefore represents the reduction in residual variance.
variance as additional predictors are added to a particular unit of analysis of the multilevel model.

In the random-intercepts model, when including effect codes in the model, within-person variability in task importance was reduced by 16.37% (PVAF = .1637; \(\sigma^2_w\) Model 1 = 1.66; \(\sigma^2_w\) Model 2 = 1.39). In the contextual model, 13.90% of the variance in ratings of task importance across students was accounted for by the inclusion of background variables including age, expected math grade, lunch price, and gender. (PVAF = .1390; \(\tau_{00}\) Model 2 = 1.30; \(\tau_{00}\) Model 3 = 1.12). Still, there are considerable differences between students that might be explained by other level 2 variables, \(\chi^2\) (95) = 1556.83, \(p<.001\).

Within-person variability in task importance was reduced by an additional 37.03% after including task assimilation and task differentiation as predictors of task importance at Level 1 (PVAF = .3703; \(\sigma^2_w\) Model 3 = 1.39; \(\sigma^2_w\) Model 4 = 0.86). Additionally, I found significant variability across individuals in slopes for task assimilation (\(\chi^2\) (75) = 176.51, \(p<.001\)), and task differentiation (\(\chi^2\) (75) = 160.52, \(p<.001\)). This finding justified the inclusion of level-2 variables to model this variation in slopes for task assimilation and task differentiation.
Table 4.3.
Final Multilevel Model of Task Importance, using Full Maximum Likelihood Estimation.

<table>
<thead>
<tr>
<th>Fixed Effects</th>
<th>Coefficient (SE)</th>
<th>t (df)</th>
<th>p</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model for individual mean task importance (π₀)</td>
<td></td>
<td></td>
<td></td>
<td>.937</td>
</tr>
<tr>
<td>Intercept (β₀₀)</td>
<td>5.01 (.13)</td>
<td>38.23 (91)</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>Age (Standardized) (β₀₁)</td>
<td>-0.07 (.09)</td>
<td>-0.79 (91)</td>
<td>.431</td>
<td></td>
</tr>
<tr>
<td>Expected Grad (Standardized) (β₀₂)</td>
<td>0.18 (.10)</td>
<td>1.78 (91)</td>
<td>.079</td>
<td></td>
</tr>
<tr>
<td>Lunch Price (Full vs. Free/Reduced) (β₀₃)</td>
<td>0.41 (.20)</td>
<td>2.00 (91)</td>
<td>.048</td>
<td></td>
</tr>
<tr>
<td>Mastery Goal Structure (β₀₄)</td>
<td>0.65 (.08)</td>
<td>7.73 (91)</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>Performance Goal Structure (β₀₅)</td>
<td>0.06 (.07)</td>
<td>0.82 (91)</td>
<td>.414</td>
<td></td>
</tr>
<tr>
<td>Gender (Female vs. Male) (β₀₆)</td>
<td>-0.21 (.18)</td>
<td>-1.15 (91)</td>
<td>.255</td>
<td></td>
</tr>
<tr>
<td>Task Effect - Doing Homework (π₁)</td>
<td>-0.01 (.09)</td>
<td>-0.05 (1728)</td>
<td>.962</td>
<td></td>
</tr>
<tr>
<td>Task Effect - Doing In-Class Assignments (π₂)</td>
<td>0.30 (.09)</td>
<td>3.27 (1728)</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>Task Effect - Taking Notes (π₃)</td>
<td>0.52 (.09)</td>
<td>5.61 (1728)</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>Task Effect - Working on Class Projects (π₄)</td>
<td>-0.27 (.09)</td>
<td>-2.88 (1728)</td>
<td>.005</td>
<td></td>
</tr>
<tr>
<td>Task Effect - Participating in Class Discussions (π₅)</td>
<td>-0.09 (.09)</td>
<td>-0.97 (1728)</td>
<td>.332</td>
<td></td>
</tr>
<tr>
<td>Task Effect - Working in Groups (π₆)</td>
<td>-0.06 (.09)</td>
<td>-0.64 (1728)</td>
<td>.523</td>
<td></td>
</tr>
<tr>
<td>Task Effect - Taking Tests (π₇)</td>
<td>0.15 (.09)</td>
<td>1.56 (1728)</td>
<td>.119</td>
<td></td>
</tr>
<tr>
<td>Task Effect - Sharing Answers (π₈)</td>
<td>-0.39 (.09)</td>
<td>-4.13 (1728)</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td>Task Effect - Paying Attention (π₉)</td>
<td>0.68 (.09)</td>
<td>7.30 (1728)</td>
<td>&lt;.001</td>
<td></td>
</tr>
</tbody>
</table>

Continued
Table 4.3 Continued

<table>
<thead>
<tr>
<th>Task Effect - Taking Quizzes ($\pi_{10}$)</th>
<th>0.08 (.09)</th>
<th>0.83 (1728)</th>
<th>.408</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Effect - Using Class’s Online Resources ($\pi_{11}$)</td>
<td>-0.68 (.10)</td>
<td>-7.03 (1728)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Task Effect - Working Out Problems on Board ($\pi_{12}$)</td>
<td>0.06 (.09)</td>
<td>0.60 (1728)</td>
<td>.549</td>
</tr>
<tr>
<td>Task Effect - Asking Questions in Class ($\pi_{13}$)</td>
<td>0.33 (.09)</td>
<td>3.56 (1728)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Task Effect - Teaching Other Students ($\pi_{14}$)</td>
<td>-0.22 (.09)</td>
<td>-2.32 (1728)</td>
<td>.020</td>
</tr>
<tr>
<td>Task Effect - Being on Time for Class Task ($\pi_{15}$)</td>
<td>-0.01 (.09)</td>
<td>-0.13 (1728)</td>
<td>.901</td>
</tr>
<tr>
<td>Task Effect - Reviewing Class Notes ($\pi_{16}$)</td>
<td>0.18 (.09)</td>
<td>1.98 (1728)</td>
<td>.048</td>
</tr>
<tr>
<td>Task Effect - Attending After-School Tutoring ($\pi_{17}$)</td>
<td>-0.16 (.09)</td>
<td>-1.68 (1728)</td>
<td>.092</td>
</tr>
</tbody>
</table>

Model for task assimilation ($\pi_{18}$)

<table>
<thead>
<tr>
<th>Intercept ($\beta_{180}$)</th>
<th>0.23 (.03)</th>
<th>7.59 (94)</th>
<th>&lt;.001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery Goal Structure ($\beta_{181}$)</td>
<td>-0.03 (.03)</td>
<td>-1.03 (94)</td>
<td>.307</td>
</tr>
<tr>
<td>Performance Goal Structure ($\beta_{182}$)</td>
<td>0.05 (.02)</td>
<td>2.17 (94)</td>
<td>.032</td>
</tr>
<tr>
<td>Positive Valence of Assimilation ($\beta_{183}$)</td>
<td>-0.01 (.02)</td>
<td>-0.30 (94)</td>
<td>.763</td>
</tr>
</tbody>
</table>

Model for task differentiation ($\pi_{19}$)

<table>
<thead>
<tr>
<th>Intercept ($\beta_{190}$)</th>
<th>0.36 (.03)</th>
<th>11.99 (94)</th>
<th>&lt;.001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery Goal Structure ($\beta_{191}$)</td>
<td>0.03 (.03)</td>
<td>1.04 (94)</td>
<td>.301</td>
</tr>
<tr>
<td>Performance Goal Structure ($\beta_{192}$)</td>
<td>-0.02 (.02)</td>
<td>-0.99 (94)</td>
<td>.324</td>
</tr>
<tr>
<td>Positive Valence of Differentiation ($\beta_{193}$)</td>
<td>0.01 (.03)</td>
<td>0.15 (94)</td>
<td>.878</td>
</tr>
</tbody>
</table>

Note. Level-1 variables are group-mean centered; level-2 variables are grand-mean centered. Level-1 N = 1,800; Level-2 N = 100. Intercept represents the overall mean rating of task importance across all tasks.
Final Model

The final model is presented in Table 4.3.

Explaining Inter-Individual Effects on the Intercept. After controlling for other background predictors and perceptions of classroom goal structures, free/reduced lunch students were identified as expressing greater mean task importance than students who paid full price for lunch, $\beta_{03} = .41, t(91) = 2.00, p < .05$. Thus, when students reported a free/reduced lunch status, they were more likely to report higher average ratings of task importance across the 18 tasks, after controlling for background characteristics, perceptions of classroom goal structures, task assimilation, and task differentiation.

Controlling for other predictors of the intercept of task importance across students, perceived mastery goal structure was positive and significantly related to mean task importance, $\beta_{04} = .65, t(91) = 7.73, p < .001$. Thus, perceiving math instruction as being focused on the development of competence was related to higher average ratings of task importance. Simply stated, the more students perceive a mastery goal structure, the higher their average ratings of task importance.

Explaining intra-individual effects. The coefficients for the effect codes represent deviations in the task importance rating of a specific task from the mean rating of task importance across all tasks. Compared with their ratings of other tasks, students assigned greater importance to doing in-class assignments ($\pi_2 = .30, t(91) = 3.27, p < .001$), taking notes ($\pi_3 = .52, t(91) = 5.61, p < .001$), paying attention ($\pi_9 = .68, t(91) = 7.30, p < .001$), asking questions ($\pi_{13} = .33, t(91) = 3.56, p < .001$), and reviewing class notes ($\pi_{16} = .18, t(91) = 1.98, p = .05$). On average, students assigned significantly less
importance to working on class projects ($\pi_4 = -2.27$, $t(91) = -2.88$, $p < .01$), sharing answers ($\pi_8 = -3.9$, $t(91) = -4.13$, $p < .001$), using the school’s online math resource tools ($\pi_{11} = -6.8$, $t(91) = -7.03$, $p < .001$), and teaching other students ($\pi_{14} = -2.22$, $t(91) = -2.32$, $p < .05$).

After adjusting average ratings of task importance for students’ background factors and perceptions of classroom goal structures, task assimilation was positively and significantly related to ratings of task importance within individual students, $\beta_{180} = .23$, $t(94) = 7.59$, $p < .001$. Consistent with my prediction, this indicates that—above and beyond background factors and perceptions of classroom goal structures—students perceive tasks that help them “fit in” as more important than tasks that do not help them “fit in.” On average across individual students, task assimilation is represented as an increase of .23 points in task importance for each one-unit increase in task assimilation. Likewise, on average across students, task differentiation is positively and statistically significantly related to task importance, $\beta_{190} = .36$, $t(94) = 11.99$, $p < .001$. Consistent with my prediction, this indicates that students perceive academic tasks that help them stand out as more important than tasks that do not help them stand out. Specifically, task importance is expected to increase by .36 units for every one-unit increase in a student’s perception of a task as a social medium for differentiating oneself from classmates.

**Explaining inter-individual effects on slopes of assimilation and differentiation.** A cross-level interaction was found between task assimilation and performance goal structure. Performance goal structure moderated the association between task assimilation and task importance, $\beta_{182} = .05$, $t(94) = 2.17$, $p < .05$. In other words, the slope for task
assimilation on task importance becomes significantly steeper on average when students perceive their teachers as placing an emphasis on performance. This means that as students increasingly perceive a performance goal structure, the association between task assimilation and task importance becomes stronger (see Figure 4.1). No significant association was found for perceptions of a mastery goal structure ($\beta_{18.1}$) or positive valence ($\beta_{18.3}$). In terms of task differentiation, no cross-level interactions were found. Performance goal structure did not moderate the association between task differentiation and task importance ($\beta_{19.2}$). No significant cross-level interactions were found for perceptions of a mastery goal structure ($\beta_{19.1}$) or positive valence ($\beta_{19.3}$) on the slope for task differentiation.

**Variance components for final model.** The inclusion of classroom goal structures as predictors of the intercept accounted for 37.03\% of the variability in mean task importance across students (PVAF = .3703; $\tau_{00}$ Model 3 = 1.23; $\tau_{00}$ Model 5 = 0.71). However, significant variability across students remains to be explained, $\chi^2$ (69) = 1028.86, $p < .001$. For the task assimilation slope, 15.18\% of the variability between students was explained by students’ perceptions of the classroom motivational climate, (PVAF = .15.18; $\tau_{18}$ Model 4 = 0.04; $\tau_{18}$ Model 5 = 0.03). Still, significant variability in this random coefficient remains to be explained $\chi^2$ (72) = 155.73, $p < .001$. For the task differentiation slope, only 2.36\% of the variability between students was explained by students’ perceptions of the classroom motivational climate, (PVAF = .0236; $\tau_{19}$ Model 4 = 0.04; $\tau_{19}$ Model 5 = 0.04). Considerable variability in this random coefficient remains to be
explained, $\chi^2 (72) = 159.60, p < .001$. Variance components for the final model are found in Table 4.4.

Table 4.4. Variance Components for Final Model of Task Importance using Full Maximum Likelihood Estimation.

<table>
<thead>
<tr>
<th>Random Effects (Var. Components)</th>
<th>Variance</th>
<th>df</th>
<th>Chi-square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Var. between individual means ($r_0$)</td>
<td>0.71</td>
<td>69</td>
<td>1028.86 ($p &lt; .001$)</td>
</tr>
<tr>
<td>Task assimilation slope ($r_{18}$)</td>
<td>.03</td>
<td>72</td>
<td>155.73 ($p &lt; .001$)</td>
</tr>
<tr>
<td>Task differentiation slope ($r_{19}$)</td>
<td>.04</td>
<td>72</td>
<td>159.60 ($p &lt; .001$)</td>
</tr>
<tr>
<td>Var. within individuals ($\epsilon$)</td>
<td>0.86</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. Deviance (FEML) = 5124.96; 39 estimated parameters.*

![Figure 4.1. Mean Ratings of Task Importance as a Function of Task Assimilation and Performance Goal Structure.](image-url)
Discussion

Previous research on students’ social needs discusses associations between interpersonal relationships and students’ academic values (e.g., Martin & Dowson, 2009), but few studies are available to examine whether the needs for similarity and uniqueness may be associated with such outcomes. Building on previous research (Gray and Rios, Study 1, in press), I employed a repeated-ratings approach to examine whether students were more motivated to engage in academic tasks as a function of task assimilation—fitting in with peers by engaging in a task—and task differentiation—standing out from peers by engaging in a task. The importance students placed on engaging in math activities varied from task to task. This variation was modeled with greater specificity in the present study by accounting for background characteristics and classroom goal structures when testing the contributions of task assimilation and task differentiation. The current study extends the work of Gray and Rios by (a) examining predictors of task importance in mathematics among STEM-focus high school students, (b) assessing between-person factors that might account for variation in task importance, and (c) examining factors that might moderate relations of task assimilation and task differentiation to task importance.

I expected that task assimilation and task differentiation would independently explain variation in task importance. Findings supported this prediction. Students viewed tasks as important when these tasks satisfied their personal desires for fitting in and standing out. Previous literature on task importance has examined this construct in terms of students’ motivational beliefs for math courses in general (Battle, 1965; Meece et al., 1990).
1990). The person-centered approach I used in the present study extends this work by demonstrating that, within the domain of mathematics and among students who have a history of academic rigor within this domain, the same person may rate some math activities as more desirable than others.

This within-person variability in task importance suggests that a very “math-motivated” student may gravitate toward some activities and shy away from others. By extension, this might also mean that glimpses of motivation might even be seen in students who one might otherwise identify as “unmotivated” when discussing their motivation for the mathematics course in general. My work contributes to research in the expectancy-value tradition by demonstrating that this variation in the importance students assign to specific activities within their math courses not only exists, but can be explained systematically. Eccles (2009) briefly mentions personal desires as a means by which identity and identity-formation processes influence task importance. Building on optimal distinctiveness theory, the present study—along with the work of Gray and Rios—suggests that students’ needs to fit in and stand out are specific personal desires that may dictate the extent to which students view academic tasks as important for their self-image.

One practical concern is whether students’ social needs matter when teachers emphasize learning, effort, and improvement. In addition to math values (Anderman et al., 2001), a mastery goal structure has been related to a host of positive academic outcomes for students including academic help-seeking (Ryan & Pintrich, 1997), persistence (Elliott & Dweck, 1988, and meta-cognitive strategy use (Meece & Miller, 2001). Consistent with previous research, the present study revealed a significant and
positive contribution of mastery goal structure to students’ overall mean ratings of task importance. One take home message from this finding is that math teachers are able to increase the relevance of specific academic tasks as they convey messages about learning for understanding. The other message is that even when teachers emphasize mastery in their classrooms, students’ needs for assimilation and differentiation remain positively associated with perceptions of task importance. The contribution of a mastery goal structure to students’ motivational beliefs cannot be overstated, but the relevance of students’ social needs—even within a motivationally supportive classroom—should not be overlooked.

The present study revealed that students on free and reduced-price lunch expressed higher mean task importance ratings than did students who paid full price for lunch. Though speculative, one possible explanation of this finding may be related to the reputation of the STEM-focused school the students attended. Indeed, disparities exist in the academic resources allotted to schools in different economic strata (e.g., U.S. Department of Education, 2011). The resources at this well-funded STEM-focused school may not be much different from what students of higher SES backgrounds might expect from their neighborhood school. It is possible that students from low SES backgrounds relished the opportunity to attend this STEM-focused school to a greater extent, because of the perceived unattractiveness of their district high schools in terms of lighting, textbooks, and other resources. In light of previous research that also demonstrates students from lower socioeconomic backgrounds value STEM learning more than students from higher socioeconomic backgrounds, the link between SES and students’
values in STEM in the present study may represent a trend. At present, this finding might be best viewed as a tentative finding that remains to be explored in future research.

Unexpectedly, a cross-level interaction was found such that a stronger association between task assimilation and task importance was observed when students perceived their teachers as emphasizing the demonstration of competence. The present finding has theoretical implications for understanding linkages between goal structures, social comparison, and students’ motivational beliefs. Ames (1984a, 1984b, 1992) viewed a focus on the demonstration of competence as promoting social comparison—that is, performing better than others or some norm-based standard. Social comparison was viewed as particularly negative for students’ motivation due to past research linking social comparison with undesirable outcomes such as unwillingness to take on challenging tasks (Elliott & Dweck, 1988). Tasks are important to a student when engagement in such tasks is perceived as a vehicle by which the student can affiliate with others, but the importance of such tasks is enhanced in contexts where achieving is recognized and validated by the teacher.

This finding also has practical implications. Performance goal structures are generally regarded as counterproductive teaching practices in terms of increasing students’ motivation (Kaplan et al., 2002). However, the era of high-stakes testing makes the emphasis on performance in schools nearly inevitable (Anderman, Anderman, Yough, & Gimbert, 2010). Some researchers have become focused on promising avenues for increasing students’ motivation even in the presence of performance-focused demands of schooling environments (Ciani et al., 2010). The present study correspondingly
demonstrates that performance-focused classroom climates may be less harmful when students are given a chance to engage in tasks they perceive as helping them assimilate with their peers.

The null effects of the valences of assimilation and differentiation were also surprising. The degree of attractiveness students assigned to fitting in and standing out had no bearing on the extent to which task assimilation and task differentiation were associated with task importance. This finding suggests that—regardless of the strength of students’ desires to assimilate and differentiate—students’ social needs matter for understanding their motivational beliefs. Though speculative, this finding might suggest that assimilation and differentiation serve an operating role in students’ academic activities even beyond their conscious awareness, or at least beyond what students were willing to report. In addition to the research questions raised in the following section, assessing role of valence plays in students’ assimilation and differentiation patterns will provide a greater grasp on the meaning of the valence findings in the present study.

Limitations and Suggestions for Future Research

The aforementioned interpretations are bounded by a number of factors, but should spur further investigation on the relation between students’ social needs and their academic motivation. First, data were collected from adolescents with a track record of high scholastic engagement in mathematics—allowing for a stringent examination of associations between social needs and task importance within math classrooms in a manner that might have most direct implications for theory. Further examination of task
assimilation and task differentiation in future studies would facilitate discussion of the
generality of my findings to more traditional student populations.

Second, the repeated-ratings approach in the present study reflects a concurrent
design. Though the previous experimental work of Gray and Rios (in press, Study 2)
serves as the basis for my approach of modeling task assimilation and task differentiation
as predictors of task importance, the design of the present study limits my discussion of
directionality. Future research should examine whether intervening to enhance students’
social perceptions of academic tasks — perhaps in the form of a brief writing exercise
(Aronson, Fried, & Good, 2002) — might lead them to place more value on these tasks.

Third, whereas the randomized presentation of questions and academic tasks
contributed to a more rigorous computed-based survey research design, the examination
of behavioral outcomes is also necessary to better-understand how students’ social
perceptions translate into actual achievement behavior. Future work should therefore
examine how much students actually engage in achievement tasks when they perceive
tasks as satisfying their needs for assimilation and differentiation.

Finally, Eccles et al. (1983) proposed different components of task value. Task
importance has received greater theoretical attention than other task value components in
discussions of the role of identity formation processes in students’ motivational beliefs
(Eccles, 2009). Whereas the present study and previous empirical research demonstrates
links between identity formation processes and the task importance component of task
value (Gray & Rios, in press), future research should investigate the extent to which task
assimilation and task differentiation also are associated with intrinsic value and utility
value. Wigfield (1993) noted that “the distinctions between these different aspects of task value are empirically, theoretically, and substantively meaningful” (p. 114). Thus, it is possible that personal desires to fit in and stand out may differentially predict various components of task value.

**Conclusion**

Researchers have argued that identity formation processes are responsible for students’ achievement values (Eccles, 2009) but, until recently, this argument has not been tested in terms of the students’ identity concerns with fitting in and standing out. Without the present analysis of task importance, we would not be able to understand that even students who are recognized as future scientists and mathematicians can view some math achievement behaviors as worthwhile and other math achievement behaviors as pointless. Nor would we understand which personal desires (e.g., assimilation and differentiation) are influential in helping students view specific achievement behaviors within their math classrooms as important. Without also exploring students’ perceptions of the motivational climate set by their teachers, the consideration of students’ needs to fit in and stand out might appear secondary—if not altogether trivial—with respect to a teacher’s emphasis on the development and the demonstration of competence. To the contrary, the present analysis suggests that these personal desires should not be an afterthought for educators—leveraging students’ perceptions of how to fit in and stand out in class may not only sustain, but also enhance adolescents’ devotion to their STEM career choices. To this end, closely examining ways in which some educators consider
and appeal to students’ assimilation and differentiation needs during classroom instruction represents a meaningful next step in this line of research.
Chapter 5

Toward a Program of Research on “Fitting In” and “Standing Out”

At present, there are few attempts to explain how social interactions in and around schools might, at times, facilitate “adaptive” beliefs and behaviors, or at other times facilitate “maladaptive” beliefs and behaviors (but see Juvonen, 2006). The conceptual formulations in the first essay (Chapter Two) describe how student efforts to view themselves as a part of their school can serve as “pivot points” for guiding students in the direction of outcomes that educators strive to produce, and guiding students away from the outcomes that educators strive to diminish. Not only does this framework consider the positive outcomes of positive social interactions, but also to sheds light on the negative potentiality of satisfying one’s needs for fitting in and standing out. In this way, this essay is by no means a “happy” framework of school belonging. But in order to deepen our understanding of belonging in schools, we must first understand a broader spectrum of capabilities in studies of student interactions. In doing so we ultimately are more effectively equipped to leverage students’ social concerns in ways that are consistent with scholastic achievement. The formulations presented in this essay are by no means intended to challenge the relevance of friendship and social attachment to student
motivation and achievement. These relational aspects of peer interactions are undoubtedly important. Instead, this conceptual essay calls attention to the crossover between peer interactions and identity as a critical undertaking for the advancement and application of achievement motivation research on school belonging and identity.

Chapter Three highlights questions of theory and practical utility. In the social psychology literature, the argument that group members will place greater importance on groups when they feel similar to one another, but different from non-group members, is made explicit by Optimal Distinctiveness Theory. The literature also suggests, albeit implicitly, that group members may place greater importance on groups when they are able to both fit in with, while standing out from, fellow ingroup members. I made the argument that—at least in Western societies where uniqueness is embraced—group members should express more positive emotions and greater motivation for enacting behaviors that are consistent with the norms of the group. This was conceptualized as a process of increased group identification.

Through examining these connections in English classrooms, Chapter Three supports the aforementioned hypotheses but raises important theoretical and practical questions that must be considered. Some conceptualize the needs to fit in and stand out as opposite ends of a continuum (Crosnoe, 2011); others conceptualize the needs to fit in and stand out as separate, opposing drives (Brewer, 1991), and still others argue that no tension exists at all between these needs (Vignoles, 2009). Empirical support was found for the argument that fitting in and standing out are indeed separate drives (Brewer & Roccas, 2001). Consistent with arguments later made by Vignoles (2004), these needs
were not found to oppose one another. The question must therefore be raised of whether the simultaneous satisfaction of assimilation and differentiation needs should be referred to as “Optimal Balance” (Chapter Two) or something else (e.g., “Dual Need Satisfaction”).

Race and socioeconomic status tied into students’ needs for similarity and uniqueness being met. From a Racial Identity-Congruence Perspective (Byrd & Chavous, 2011), ethnic minority students should feel a sense of school belonging, and subsequently, greater motivation to achieve in school contexts that with positive student interactions around race. More generally, a person-environment fit perspective (Hunt, 1975) argues that an individual’s optimal functioning and well-being occurs in environments whose characteristics match the characteristics of this individual. The question must therefore be raised of whether ethnic and economically underrepresented students in this sample perceived the norms and culture of their classroom environments as a culturally supportive of students like me.

Researchers have questioned the importance students place on academic subjects as a whole (e.g., mathematics) to understand future behavior and career choice (see Eccles, 2009). But what can be said of the educational experiences of students who have already expressed interest in pursuing math-intensive careers? In Chapter Four, students’ perceptions of the importance of achievement behaviors in math class are examined at the micro-level. This chapter describes a study in which STEM-focused high school students (Science, Technology, Engineering, and Mathematics) placed greater importance on specific achievement behaviors during math class, when enacting these behaviors
contributed to their needs to fit in and stand out. This research, along with prior experimental work by Gray and Rios (in press), bridges perspectives on optimal distinctiveness with the expectancy-value framework—demonstrating that achievement behaviors are more attractive to students when achieving works in service of satisfying personal desires to fit in and stand out. Additionally, when students perceived their teachers as placing a premium on student demonstrations of competence—as compared to when students did not hold these perceptions—students placed even greater importance on academic behavior that helped them fit in. So, not only were there stand-alone contributions in each chapter. There also were themes that cut across these chapters.

**Mergers**

There are a number of connections among the chapters in this dissertation that bridge research on fitting in and standing out with motivation in an ecologically valid manner. Chapter Three links with Chapter Two by providing the first empirical support linking the simultaneous satisfaction of similarity and uniqueness needs with motivation, by way of group identity. Conceptualizations of measurement in Chapter Two also were supported in the second. Chapter Three extends formulations in Chapter Two by demonstrating connections of need satisfaction not only to motivation, but to positive emotion—suggesting the role that similarity and uniqueness may also play in adolescents’ healthy psychological development.

Chapter Four also connects with conceptual formulations in the Chapter Two by providing continued support for the notion that students are likely to gravitate toward
achievement behaviors to satisfy their needs to feel a part of the classroom (after Gray and Rios, in press). The argument made in these chapters, which does not appear explicitly in other research on school belonging, is that students possess some degree of agency in terms of satisfying their own social desires. Thus, change does not always come from the environment fitting the person, but may also come from the person changing the environment, or their status therein.

Each of these chapters is connected in that each stresses the “adaptive” motivational outcomes associated with fitting in and standing out. As discussed in Chapter 2, feeling assimilated and differentiated, and subsequently identifying, with a group whose norms do not prescribe scholastic engagement might lead a student to be less motivated for scholastic achievement. Most critical in this line of research will be to devise techniques that help students feel both similar and unique in groups; thus directing their self-perceptions toward identities whose norms are scholastic engagement and academic excellence.

Moving Forward

The present research provides a window into the interrelations between students’ need to fit in and stand out, identity, motivation, and emotion. This research serves as the necessary groundwork in support of a new perspective on school belonging. To be clear, this dissertation is not intended to negate existing perspectives that stress the importance of social attachment in school. This dissertation does, however, extend conceptualizations of what it means for a student to be a part of a school community. By supporting my proposed formulations in initial empirical demonstrations, this foundational work will
contribute to productive conversations on understanding the important and complex role of “fitting in” and “standing out” in ways that previously have remained unarticulated.

Because students’ perceptions of how much their needs to fit in and stand out are of primary importance for understanding their motivation, self-report measures facilitated efforts to support the theoretical arguments that were offered. Moving forward, a deeper understanding of assimilation and differentiation needs may be gained by exploring the stability and change in the satisfaction of these needs across different points in the academic year, different subject areas, and different social units (e.g., a clique within a classroom, a classroom, and a school). In addition, open-ended responses, interviews, and ethno-photography should complement the deductive methods used to understand students’ perceptions in the present study.

In addition to understanding students’ motivation from a cognitive perspective, the foundation has now been set for understanding connections between these needs and behavioral outcomes. Gray and Rios (in press) experimentally demonstrated that achievement on a word task was increased when students perceived achieving as helping them fit in or stand out. Findings of the present self-report research in actual classrooms justify the importance of future laboratory and classroom-based experiments targeted toward leveraging assimilation and differentiation needs. This work appears promising in increasing critical outcomes including increased standardized test performance, transcript grades, writing quality, teacher reports of students’ on-task behavior, in addition to better attendance records and disciplinary records.
The present chapters focused primarily on students’ needs and their perceptions, but the role that the teacher plays here should be better understood. Perhaps the social climate (i.e., the norms for what certain behaviors mean in the classroom), is set by the teacher, who directs social interactions. As suggested in Chapter Four, the role of the teacher could be that of a “social facilitator” who enhances students’ motivation by showing them productive ways of satisfying their needs for similarity and uniqueness. Another role a teacher might play is that of a “social buffer.” In Chapter Three, students who were satisfied in terms of how similar and different they felt were more likely to express stronger identification with their classrooms. Another, competing route might be identifying with the classroom through a student’s rapport with the teacher. There may be multiple social routes (teacher or student interactions) to establishing a strong academic identity with one’s classroom environment. Finally, teachers could serve to enhance or suppress the salience of the social dimensions of the classroom altogether. In other words, teachers’ encouragement or discouragement of social interactions, might regulate the extent to which students consciously process the (dis)satisfaction of their social needs.

Finally, this dissertation assumes that schools have met some basic standard or criteria for operation. Such standards would include—but are not limited to—well-lit classrooms and hallways; each student being accounted for by having an assigned place to be at all points during the school day (i.e., in class, lunch, study hall, or work study); teachers who have or will soon receive accreditation; books which are not moldy, badly stained, unclean, or severely outdated. It would seem that all schools would meet such
standards. But after having conducted research in schools which have not met the aforementioned conditions, I have adopted the perspective that these institutions should not exist in their current form. One could not begin to consider these schools when discussing the possibility of a world-class education system. Thus, the fact that the present dissertation is not equipped to address the concerns of students in these environments is not a weakness of my dissertation, but—as Kozol (2005) and Payne (2008) decry—an embarrassment on the part of the American formal education system for allowing such schools to exist. Nevertheless, it remains to be seen whether satisfying needs to fit in and stand out is a higher-level need which only matters when basic conditions are met (after Maslow, 1954); or whether the satisfaction of these needs armor students against their otherwise damming topographies in which they are expected to excel.

**Take-Home Points**

Previous literature underscores the importance of social attachment for students’ motivation and well-being, but less is known about how student perceptions of similarity and uniqueness contribute to these outcomes. Findings of this dissertation suggest these factors are, in fact, related to motivation and well-being through a process of identity. Students are likely to define themselves in academic terms in classrooms in which they are able to fit in and stand out at the same time. In turn, these students place greater value on academic content, and have more positive emotional experiences in these socially fulfilling environments. In a complementary fashion, when students want to fit in more, or stand out more, they place greater importance on achievement behaviors that help
them reach these ends. This foundational work echoes previous work by showing school belonging to be germane to the formal educational experience, but provides a new take on school belonging by linking both similarity and uniqueness to positive academic pathways. Finding ways of translating students’ latent potential into realized potential remains the basis for school reform. But a world-class education system will first recognize that adolescents’ preoccupation with social interactions—and with understanding *Who am I?*—fundamentally contribute to scholastic engagement and success.
References


Elmore & Oyserman (In press) If 'we' can succeed, 'I' can too: Identity-based motivation and gender in the classroom. *Contemporary Educational Psychology.*


Packer, D. J., & Miners, C. T. H. (2012). At the first sign of trouble, or through thick and thin? When nonconformity is and is not disengagement from a group. *Journal of Experimental Social Psychology, 48*, 316-322.


## Appendix A: Items and Chronbach’s Alpha from Chapter 3

### Task Value (Eccles & Wigfield, 1995)

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Chronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intrinsic Value</strong></td>
<td>84</td>
</tr>
<tr>
<td>In general, I find working on English assignments: (Very Boring...Very Interesting)</td>
<td></td>
</tr>
<tr>
<td>How much do you like learning English? (Not at all...Very much)</td>
<td></td>
</tr>
<tr>
<td><strong>Attainment Value (Importance)</strong></td>
<td>78</td>
</tr>
<tr>
<td>I feel that, to me, being good at English Language Arts is: (Not at all important...Very important)</td>
<td></td>
</tr>
<tr>
<td>How important is it to you to get good grades in English? (Not at all important...Very important)</td>
<td></td>
</tr>
<tr>
<td><strong>Utility Value</strong></td>
<td>74</td>
</tr>
<tr>
<td>How useful is learning about advanced high school English for what you’ll do after you graduate? (Not at all useful...Very useful)</td>
<td></td>
</tr>
<tr>
<td>How useful is learning about advanced high school English for your daily life outside of school? (Not at all useful...Very useful)</td>
<td></td>
</tr>
</tbody>
</table>

### Class-related emotions (adapted from Pekrun, Goetz, & Perry, 2005)

<table>
<thead>
<tr>
<th>Emotion</th>
<th>Chronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enjoyment</strong></td>
<td>86</td>
</tr>
<tr>
<td>I enjoy being in class.</td>
<td></td>
</tr>
<tr>
<td>My enjoyment of this class makes me want to participate.</td>
<td></td>
</tr>
<tr>
<td>It’s so exciting that I could sit in class for hours listening to my teacher.</td>
<td></td>
</tr>
<tr>
<td>I enjoy participating so much that I get energized.</td>
<td></td>
</tr>
<tr>
<td><strong>Hopelessness</strong></td>
<td>82</td>
</tr>
<tr>
<td>I have lost all hope in understanding this class.</td>
<td></td>
</tr>
<tr>
<td>Because I don’t understand the material I look disconnected.</td>
<td></td>
</tr>
<tr>
<td><strong>Pride</strong></td>
<td>86</td>
</tr>
<tr>
<td>I take pride in being able to keep up with the material.</td>
<td></td>
</tr>
<tr>
<td>I am proud that I do better than others in this course.</td>
<td></td>
</tr>
<tr>
<td>When I make good contributions in class, I get even more motivated.</td>
<td></td>
</tr>
<tr>
<td>When I do well in class, I am filled with pride.</td>
<td></td>
</tr>
<tr>
<td><strong>Boredom</strong></td>
<td>88</td>
</tr>
<tr>
<td>I get bored.</td>
<td></td>
</tr>
<tr>
<td>The lessons bore me.</td>
<td></td>
</tr>
<tr>
<td>I get so bored I have problems staying alert.</td>
<td></td>
</tr>
<tr>
<td>I get restless because I can’t wait for the class to end.</td>
<td></td>
</tr>
<tr>
<td>I start yawning in class because I’m so bored.</td>
<td></td>
</tr>
<tr>
<td><strong>Anxiety</strong></td>
<td>85</td>
</tr>
<tr>
<td>I feel nervous in class.</td>
<td></td>
</tr>
<tr>
<td>I worry that others will understand more than me.</td>
<td></td>
</tr>
</tbody>
</table>

Continued
I get scared that I might say something wrong, so I’d rather not say anything.
I get tense in class.
When I don’t understand something important in class, my heart races.

**Shame**

<table>
<thead>
<tr>
<th>Item</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the others knew that I didn’t understand the material I would be embarrassed.</td>
<td>.89</td>
</tr>
<tr>
<td>When I say anything in class I feel like I am making a fool of myself.</td>
<td></td>
</tr>
<tr>
<td>I’m embarrassed that I can’t express myself well.</td>
<td></td>
</tr>
<tr>
<td>After I have said something in class I wish I could crawl into a hole and hide.</td>
<td></td>
</tr>
<tr>
<td>Because I get embarrassed, I become tense.</td>
<td></td>
</tr>
</tbody>
</table>

**Group Identification (adapted from Castano, Yzerbyt, & Bourguignon, 2003)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>I identify with others in my English class.</td>
<td>.74</td>
</tr>
<tr>
<td>Being a student in this English class is important to me.</td>
<td></td>
</tr>
<tr>
<td>I perceive myself as a member of this English class.</td>
<td></td>
</tr>
<tr>
<td>Being a student in this English class does not mean a lot to me.</td>
<td></td>
</tr>
</tbody>
</table>

**Standing Out and Fitting In**

**STEM: "In this English class..."**

**Assimilation Need Satisfaction**

<table>
<thead>
<tr>
<th>Item</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am okay with how similar I feel to other students.</td>
<td>.76</td>
</tr>
<tr>
<td>I blend in enough with other students.</td>
<td></td>
</tr>
<tr>
<td>The amount of similarity I feel to other students meets my standards.</td>
<td></td>
</tr>
</tbody>
</table>

**Differentiation Need Satisfaction**

<table>
<thead>
<tr>
<th>Item</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am okay with how different I am.</td>
<td>.75</td>
</tr>
<tr>
<td>I am satisfied with how unique I am from other students.</td>
<td></td>
</tr>
<tr>
<td>I stand out enough from my peers.</td>
<td></td>
</tr>
</tbody>
</table>

Note: All scales used 5-point Likert-type response anchors (from 1 = *Not at all true* to 5 = *Very true*), except the task value subscales, which used 7-point anchors. For all scales, higher scores indicate that students expressed greater levels of academic value, emotion, group identification, and optimal distinctiveness need satisfaction.

Indicates reverse-coded item.