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School Engagement: Potential of the Concept, State of the Evidence

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The concept of school engagement has attracted increasing attention as representing a possible antidote to declining academic motivation and achievement. Engagement is presumed to be malleable, responsive to contextual features, and amenable to environmental change. Researchers describe behavioral, emotional, and cognitive engagement and recommend studying engagement as a multifaceted construct. This article reviews definitions, measures, precursors, and outcomes of engagement; discusses limitations in the existing research; and suggests improvements. The authors conclude that, although much has been learned, the potential contribution of the concept of school engagement to research on student experience has yet to be realized. They call for richer characterizations of how students behave, feel, and think—research that could aid in the development of finely tuned interventions.

KEYWORDS: motivation, school engagement, self-regulated learning.

The concept of school engagement has attracted growing interest as a way to ameliorate low levels of academic achievement, high levels of student boredom and disaffection, and high dropout rates in urban areas (National Research Council & Institute of Medicine, 2004). Some studies examine how contexts interact with individual needs to promote or undermine engagement (Connell, 1990; Eccles & Midgley, 1989; Skinner & Belmont, 1993). Others explore how classroom instruction and tasks can heighten intellectual engagement (Newmann, 1992; Newmann, Wehlage, & Lamborn, 1992). Yet others investigate the relationship between school engagement and dropping out (Finn & Rock, 1997; Wehlage, Rutter, Smith, Lesko, & Fernandez, 1989).

There are historical, economic, theoretical, and practical reasons for the growing interest in school engagement. Historians note a general decline in respect for authority and institutions among students; one consequence, they argue, is that students can no longer be counted on to automatically respect and comply with the behavioral and academic expectations imposed by teachers and school administrators (Janowitz, 1978; Modell & Elder, 2002). As portrayed in recent popular books, students view

schooling as boring or as a mere grade game, in which they try to get by with as little effort as possible (Burkett, 2002; Pope, 2002). Studies find steep declines in motivation across the grade levels (Eccles, Midgley, & Adler, 1984; Fredricks & Eccles, 2002). Some scholars argue that these problems are most intense for minority students, whose group dropout rates are the most severe (Rumberger, 1987). These observations are particularly troubling in light of the claim that the new global, fast-changing economy requires knowledgeable workers who can synthesize and evaluate new information, think critically, and solve problems. Even though attendance is compulsory, establishing a commitment to education is essential if youth are to benefit from what schools have to offer and acquire the capabilities they will need to succeed in the current marketplace.

School engagement is seen as an antidote to such signs of student alienation. The term, in both popular and research definitions, encapsulates the qualities that are seen as lacking in many of today's students. For instance, *Merriam Webster's Collegiate Dictionary* (11th ed.) lists "commitment" among the most common usages of "engagement." The *American Heritage College Dictionary* (4th ed.) defines engagement as "[being] actively committed"; to be engaged is "to involve oneself or become occupied; to participate" (a definition based on behavior). Finally, as defined in the *New Oxford American Dictionary,* to engage is to "attract or involve" (a definition based on emotion).

The multifaceted nature of engagement is also reflected in the research literature, which defines engagement in three ways. *Behavioral engagement* draws on the idea of participation; it includes involvement in academic and social or extracurricular activities and is considered crucial for achieving positive academic outcomes and preventing dropping out. *Emotional engagement* encompasses positive and negative reactions to teachers, classmates, academics, and school and is presumed to create ties to an institution and influence willingness to do the work. Finally, *cognitive engagement* draws on the idea of investment; it incorporates thoughtfulness and willingness to exert the effort necessary to comprehend complex ideas and master difficult skills.

In many ways, the concepts included in the three types of engagement overlap with constructs that have been studied previously. For example, research on behavioral engagement is related to that on student conduct and on-task behavior (Karweit, 1989; Peterson, Swing, Stark, & Wass, 1984). Research on emotional engagement is related to that on student attitudes (Epstein & McPartland, 1976; Yamamoto, Thomas, & Karns, 1969) and student interest and values (Eccles et al., 1983). Research on cognitive engagement is related to that on motivational goals and self-regulated learning (Boekarts, Pintrich, & Zeidner, 2000; Zimmerman, 1990). Because there has been considerable research on how students behave, feel, and think, the attempt to conceptualize and examine portions of the literature under the label "engagement" is potentially problematic; it can result in a proliferation of constructs, definitions, and measures of concepts that differ slightly, thereby doing little to improve conceptual clarity.

Despite these problems, we argue that engagement has considerable potential as a multidimensional construct that unites the three components in a meaningful way. In this sense, engagement can be thought of as a "meta" construct. In fact, some scholars suggest that the term engagement should be reserved specifically for work where multiple components are present (Guthrie & Anderson, 1999; Guthrie

& Wigfield, 2000). The fusion of behavior, emotion, and cognition under the idea of engagement is valuable because it may provide a richer characterization of children than is possible in research on single components. Defining and examining the components of engagement individually separates students' behavior, emotion, and cognition. In reality these factors are dynamically interrelated within the individual; they are not isolated processes. Robust bodies of work address each of the components separately, but considering engagement as a multidimensional construct argues for examining antecedents and consequences of behavior, emotion, and cognition simultaneously and dynamically, to test for additive or interactive effects.

The idea of commitment, or investment (the two terms are used interchangeably in this article), which is central to the common understanding of the term engagement, also makes engagement an appealing and valuable concept because it implies that there may be qualitative differences in the level or degree of engagement along each component. For instance, behavioral engagement can range from simply doing the work and following the rules to participating in the student council. Emotional engagement can range from simple liking to deep valuing of, or identification with, the institution. Cognitive engagement can range from simple memorization to the use of self-regulated learning strategies that promote deep understanding and expertise. These qualitative differences within each dimension suggest that engagement can vary in intensity and duration; it can be short term and situation specific or long term and stable. The potential for evolution in intensity makes engagement a desirable outcome. It is reasonable to assume that engagement, once established, builds on itself, thereby contributing to increased improvements in more distal outcomes of interest.

Another reason for the growing interest in engagement is that it is presumed to be malleable. It results from an interaction of the individual with the context and is responsive to variation in environments (Connell, 1990; Finn & Rock, 1997). Routes to student engagement may be social or academic and may stem from opportunities in the school or classroom for participation, interpersonal relationships, and intellectual endeavors. Currently, many interventions, such as improving the school climate or changing curriculum and standards, explicitly or implicitly focus on engagement as a route to increased learning or decreased dropping out. For instance, Guthrie and Wigfield (2000) argue that engagement mediates the impact of curricular and instructional reforms on achievement. A multifaceted approach to engagement argues for exploring how attempts to alter context influence all three types of engagement and determining whether outcomes are mediated by changes in one or more components. The study of engagement as multidimensional and as an interaction between the individual and the environment promises to help us to better understand the complexity of children's experiences in school and to design more specifically targeted and nuanced interventions.

The purpose of this article is to critically evaluate the strengths, weaknesses, and gaps in the literature on behavioral, emotional, and cognitive engagement so that the potential of the concept can be realized. We include research on engagement in the classroom and in the larger school community. Although it is important to distinguish between these two types of engagement because they are likely to have different antecedents and outcomes, several of the studies reviewed have failed to make this distinction.

The central information in this article is organized into four sections. In the first, we define engagement and the assumptions about why each of the three types of engagement is important. In the second, we outline the measurement of the construct. In the third and fourth, we examine research on the outcomes and antecedents of engagement. To help synthesize that information, the definitions (or measures), samples, methods, and key findings of studies that have explicitly used the term engagement are summarized in the Appendix. In each section we indicate where the literature on engagement overlaps with other bodies of work that do not specify engagement as a focus but use similar variables or concepts and are often cited by engagement researchers as support for their ideas and findings. Our goal is not to review these related literatures in detail; it is to suggest how insights gained from them can contribute to our understanding of what engagement is and how to enhance it in practice. Finally, we make an overall assessment of the quality of the research, highlighting the strengths and limitations of the current work on engagement. We end with several suggestions for future investigation.

What Is Engagement?

In this section, we describe how the three types of engagement have been defined, how the definitions vary, and where they overlap. Although we present behavioral, emotional, and cognitive engagement separately, we note where studies combine components of engagement. Finally, we discuss how these definitions resemble other motivational and cognitive constructs and how the literature on those constructs can inform the research on engagement.

Behavioral Engagement

Behavioral engagement is most commonly defined in three ways. The first definition entails positive conduct, such as following the rules and adhering to classroom norms, as well as the absence of disruptive behaviors such as skipping school and getting in trouble (Finn, 1993; Finn, Pannozzo, & Voelkl, 1995; Finn & Rock, 1997). The second definition concerns involvement in learning and academic tasks and includes behaviors such as effort, persistence, concentration, attention, asking questions, and contributing to class discussion (Birch & Ladd, 1997; Finn et al., 1995; Skinner & Belmont, 1993). A third definition involves participation in school-related activities such as athletics or school governance (Finn, 1993; Finn et al., 1995).

In general, these definitions do not make distinctions among various types of behavior, such as participation in academic and nonacademic school activities. One exception is Finn's (1989) definition of behavioral engagement. He divides participation into four levels, which range from responding to the teacher's directions to activities that require student initiative, such as involvement in extracurricular activities and student government. The assumption is that participation at the upper levels indicates a qualitative difference in engagement in terms of greater commitment to the institution. From research on classroom participation, there also is evidence of differences in typologies of behavior. Some studies separate cooperative participation, or adhering to classroom rules, from autonomy participation, or self-directed academic behaviors (Birch & Ladd, 1997; Buhs & Ladd, 2001).

Emotional Engagement

Emotional engagement refers to students' affective reactions in the classroom, including interest, boredom, happiness, sadness, and anxiety (Connell & Wellborn, 1991; Skinner & Belmont, 1993). Some researchers assess emotional engagement by measuring emotional reactions to the school and the teacher (Lee & Smith, 1995; Stipek, 2002). Some conceptualize it as identification with school (Finn, 1989; Voelkl, 1997). Finn defines identification as belonging (a feeling of being important to the school) and value (an appreciation of success in school-related outcomes).

The emotions included in these definitions duplicate an earlier body of work on attitudes, which examined feelings toward school and included survey questions about liking or disliking school, the teacher, or the work; feeling happy or sad in school; or being bored or interested in the work (Epstein & McPartland, 1976; Yamamoto et al., 1969). Emotions that were included in this construct, such as interest and value, also overlap considerably with constructs used in motivational research. In fact, the authors of a recent report entitled *Engaging Schools* (National Research Council & Institute of Medicine, 2004) consider motivation and engagement as synonyms and use the words interchangeably. However, the definitions used in engagement studies are much less elaborated and differentiated than those used in the motivational literature. For example, motivational studies of interest distinguish between situational and personal interest. The former is transitory, aroused by specific features of an activity, such as novelty. The latter is a relatively stable orientation that is more likely to involve consistent choices to pursue an activity or studying a topic and willingness to undertake challenging tasks (Krapp, Hidi, & Renninger, 1992). The conceptualization of personal interest assumes that interest is directed toward a particular activity or situation. In contrast, the definitions in the engagement literature tend to be general and not differentiated by domain or activity. As a consequence, the source of the emotional reactions is not clear. For instance, it may not be clear whether students' positive emotions are directed toward academic content, their friends, or the teacher.

The theoretical work on values also outlines finer distinctions than are currently present in the engagement literature. Eccles et al. (1983) describe four components of value: *interest* (enjoyment of the activity), *attainment value* (importance of doing well on the task for confirming aspects of one's self-schema), *utility value/importance* (importance of the task for future goals), and *cost* (negative aspects of engaging in the task). Furthermore, definitions of emotional engagement do not make qualitative distinctions between positive emotions and high involvement or investment. The concept of flow makes this distinction: Flow is a subjective state of complete involvement, whereby individuals are so involved in an activity that they lose awareness of time and space (Csikzentmihalyi, 1988). The definition of flow provides a conceptualization that represents high emotional involvement or investment.

Cognitive Engagement

Research on cognitive engagement comes from the literature on school engagement, which stresses investment in learning, and from the literature on learning and instruction, which involves self-regulation, or being strategic. One set of definitions focuses on psychological investment in learning, a desire to go beyond the requirements, and a preference for challenge (Connell & Wellborn, 1991; Newmann et al.,

1992; Wehlage et al., 1989). For example, Connell and Wellborn's conceptualization of cognitive engagement includes flexibility in problem solving, preference for hard work, and positive coping in the face of failure. Other researchers have outlined general definitions of engagement that emphasize an inner psychological quality and investment in learning, implying more than just behavioral engagement. For example, Newmann et al. define engagement in academic work as the "student's psychological investment in and effort directed toward learning, understanding, mastering the knowledge, skills or crafts that the academic work is intended to promote" (p. 12). Similarly, Wehlage et al. define engagement as "the psychological investment required to comprehend and master knowledge and skills explicitly taught in schools" (p. 17).

These definitions are quite similar to constructs in the motivation literature, such as motivation to learn (Brophy, 1987), learning goals (Ames, 1992; Dweck & Leggett, 1988) and intrinsic motivation (Harter, 1981). Brophy describes a student who is motivated to learn as valuing learning and striving for knowledge and mastery in learning situations. Similarly, students who adopt learning rather than performance goals are focused on learning, mastering the task, understanding, and trying to accomplish something that is challenging. Intrinsically motivated students prefer challenge and are persistent when faced with difficulty. Each of these concepts emphasizes the degree to which students are invested in and value learning and assumes that the investment is related to, but separate from, strategic learning.

The learning literature defines cognitive engagement in terms of being strategic or self-regulating. Whether described as cognitively engaged or self-regulated, strategic students use metacognitive strategies to plan, monitor, and evaluate their cognition when accomplishing tasks (Pintrich & De Groot, 1990; Zimmerman, 1990). They use learning strategies such as rehearsal, summarizing, and elaboration to remember, organize, and understand the material (Corno & Madinach, 1983; Weinstein & Mayer, 1986). They manage and control their effort on tasks, for example, by persisting or by suppressing distractions, to sustain their cognitive engagement (Corno, 1993; Pintrich & De Groot, 1990). A qualitative distinction is made between deep and surface-level strategy use. Students who use deep strategies are more cognitively engaged; they exert more mental effort, create more connection among ideas, and achieve greater understanding of ideas (Weinstein & Mayer). The school engagement literature could benefit from incorporating ideas from the strategy literature to specify what more general terms such as "hard work," "mental effort," and "flexibility" actually entail.

In addition, the use of the term *effort* is problematic in that it is included in definitions of both cognitive and behavioral engagement. A distinction needs to be made between effort that is primarily behavioral, a matter of simply doing the work, and effort that is focused on learning and mastering the material. Research in the motivational literature that addresses the concept of volition can inform these distinctions. It emphasizes cognitive, or psychological, effort, characterizing volition as "psychological control processes that protect concentration and directed effort in the face of personal and/or environmental distractions, and so aid learning and performance" (Corno, 1993, p. 16). Similarly, it is important to distinguish among various types of "going beyond requirements" to further differentiate behavioral and mental effort.

In summary, definitions of cognitive engagement draw from two different literatures. One group specifically highlights a psychological investment in learning;

another targets cognition and emphasizes strategic learning. Neither definition alone adequately deals with the qualitative aspects of engagement. Students may be both highly strategic and highly invested in learning; they may be strategic only when it is necessary to get good grades, not because they are motivated to learn; or they may be motivated to learn but lack skills or knowledge about how or when to use strategies. Overall, the idea of cognitive engagement would be more valuable for understanding school success if scholars integrated the specificity of cognitive processes provided by the self-regulated learning literature with definitions of psychological investment found in the motivational literature.

Summary

We have noted several strengths and limitations of current conceptualizations of behavioral, emotional, and cognitive engagement. First, definitions of engagement incorporate a wide variety of constructs. For example, behavioral engagement encompasses doing the work and following the rules; emotional engagement includes interest, values, and emotions; and cognitive engagement incorporates motivation, effort, and strategy use. This inclusiveness comes at a price. Some of the definitions overlap almost completely with prior literatures, such as those on attitudes toward school or those that use teachers' ratings of behavior to predict achievement. In addition, many of the definitions in the engagement literature are more general than those in other bodies of research from which it draws. The engagement literature is also marked by duplication of concepts and lack of differentiation in definitions across various types of engagement. For example, effort is included as part of definitions of behavioral and cognitive engagement, and no distinction is made between effort aimed merely at fulfilling behavioral expectations and that aimed at understanding the material and mastering the content. Finally, many conceptualizations of engagement include only one or two of the three types.

Measurement of Engagement

In this section, we present measures of behavioral, emotional, and cognitive engagement; discuss varying approaches to measuring the same types of engagement; and look at the duplication of questionnaire items across the three types. Finally, we discuss limitations of current measurement techniques.

Measuring Behavioral Engagement

There have been several teacher ratings and self-report surveys of behavioral engagement. These include a variety of indicators of conduct, work involvement, and participation, although few studies measure all types of behavior. Aspects of behavior are sometimes separated into different scales (Finn, Folger, & Cox, 1991; Ladd, Birch, & Buhs, 1999). However, the majority of studies combine conduct, persistence, and participation in a single scale. This combination may be problematic because students who are poorly behaved but persist and complete the work are different from those who conform to classroom rules but do not meet academic requirements.

Conduct measures include positive behaviors such as completing homework and complying with school rules (Birch & Ladd, 1997; Finn et al., 1995). Other measures incorporate negative behaviors, at both the classroom and school levels, which are indicative of disengagement, such as the frequency of absences and tardiness,

fighting or getting into trouble, and interfering with others' work (Finn, 1993; Finn et al., 1995; Finn & Rock, 1997). To assess work-related behaviors, some scales include effort, attention, and persistence. For example, teachers are asked to rate the extent to which a particular student "is persistent when confronted with difficult problems" and "approaches new assignments with sincere effort" (Finn et al., 1995). The Rochester School Assessment Package (Wellborn & Connell, 1987) has been used by many researchers to measure behavioral engagement. It contains questionnaire items about effort and attention, such as "I work very hard on my schoolwork" and "When I'm in class I usually think of other things." Finally, some studies have used teachers' reports of helpless behavior as indicators of engagement (Rudolph, Lambert, Clark, & Kurlakowsky, 2001).

Other scales focus on students' participatory behaviors. For example, teachers are asked to rate students' level of participation with items such as "Student participates actively in class discussions" and "Student is withdrawn and uncommunicative" (Finn et al., 1995; Wellborn & Connell, 1987). In addition, students are asked to report on their level of initiative with survey items such as "I ask questions to get more information" (Birch & Ladd, 1997; Finn et al., 1995; Wellborn & Connell, 1987). Participation at the school level is assessed with survey questions about involvement in extracurricular activities and governance decisions (Finn, 1993; Finn & Rock, 1997).

Observation techniques also are used to assess behavioral engagement (Lee & Anderson, 1993; Newmann, 1992; Stipek, 2002). For example, Stipek had observers rate students' engagement by using scales ranging from *off-task* to *deeply involved,* where behaviors included student attentiveness, doing the assigned work, and showing enthusiasm. One potential problem with observational measures is that they provide limited information on the quality of effort, participation, or thinking. Peterson et al. (1984) found that some students judged to be on-task by observers reported in subsequent interviews that they were not thinking about the material. In contrast, many of the students who appeared to be off-task actually were highly cognitively engaged, that is, they were trying to relate new ideas to what they had already learned.

Measuring Emotional Engagement

Most of the studies of emotional engagement use self-report measures, which include survey items about a variety of emotions related to the school, schoolwork, and the people at school. The Rochester School Assessment Package also contains items about positive and negative emotions such as being happy, interested, sad, bored, frustrated, and angry (Connell & Wellborn, 1991; Skinner & Belmont, 1993). Others assess emotional engagement by asking young children to report on their general feelings about their teacher and their school (Stipek, 2002; Valeski & Stipek, 2001). Finn and Voelkl take a different approach, operationalizing emotional engagement as identification with school (Finn, 1989; Voelkl, 1997). In Finn's research, indicators of emotional engagement include student–teacher relations (e.g., "Students get along well with teachers at this school") and values (e.g., "Math will be useful to my future"). Finally, Steinberg, Brown, and Dornbush (1996) measure emotional engagement by assessing students' work orientation (e.g., "I find it hard to stick to anything that takes a long time to do") and their orientation toward school (e.g., "I feel satisfied with school because I am learning a lot").

We noted several issues with how emotional engagement has been measured. First, items that tap behavioral engagement and emotional engagement are often combined in a single scale (see Appendix for examples). This practice makes it more difficult to identify the precursors and consequences of each type of engagement. Second, the survey items do not specify the source of the emotions. For example, one student may be happy because of the school community, whereas another may be happy because of classroom processes. Third, the measures of emotional engagement tend to be more general than related constructs such as interest and value (Eccles et al., 1983; Krapp et al., 1992). Finally, the quality and intensity of emotion may vary depending on the type of class activity and setting (Larson & Richards, 1991). Experience-sampling techniques (see Csikzentmihalyi, 1988) are one way to determine the extent to which emotional engagement is a function of stable and enduring qualities or a function of contextual factors.

Measuring Cognitive Engagement

The measures of cognitive engagement, conceptualized as a psychological investment in learning, are limited. In a theoretical piece, Connell and Wellborn (1991) describe measures of cognitive engagement such as survey items about flexible problem solving, preference for hard work, independent work styles, and ways of coping with perceived failure. However, we were unable to find any published studies using these measures. Many of the items parallel those used in the intrinsic motivation literature to tap preference for challenge and independent mastery attempts (e.g., Harter, 1981). This is another example of the overlap of engagement literature with previous research.

One area of literature that can inform the measurement of a psychological investment in learning is goal theory. Although a variety of terms have been used, such as learning, mastery, and task-focus, the measurement of goals tends to be very consistent. The measurement scales include items such as being committed to understanding the work, in contrast to wanting to get a good grade or wanting to look smart. The different types of investment lead to different levels of strategy use. For example, students who endorse mastery goals are more likely to use deep-level strategies such as elaboration or organization than are students who endorse performance goals (Ames & Archer, 1988; Pintrich & De Groot, 1990; Wolters, Yu, & Pintrich, 1996).

Other studies have assessed a psychological investment in learning by rating the quality of instructional discourse in classrooms. Nystrand and Gamoran (1991) distinguish between *substantive engagement,* a sustained commitment to the content of schooling, which is similar to cognitive engagement, and *procedural engagement,* or trying to complete task requirements, which lasts only as long as the task itself. In this research, substantive engagement is inferred from the frequency of high-level evaluation and authentic questions (Gamoran & Nystrand, 1992; Nystrand & Gamoran, 1991). Although the quality of discourse is a measure of engagement at the classroom level, these indicators also could be used to assess an individual's level of engagement.

Researchers who write about "cognitive engagement" or "self-regulation," or both, using the terms interchangeably, have developed several measures of student strategy use. One common method for assessing strategy use is self-report questionnaires. These instruments typically measure metacognition, volitional and effort control, and cognitive strategy use. Students are asked about their metacognitive

strategies, or how they set goals, plan, and organize study efforts, and how they monitor and modify cognition. They are also asked about how they manage effort and exercise volitional control that helps them to concentrate and complete work effectively (Pintrich & De Groot, 1990; Zimmerman & Martinez-Pons, 1988). Some researchers specifically differentiate between deep and surface-level strategy use (Meece, Blumenfeld, & Hoyle, 1988; Miller, Greene, Montalvo, Ravindran, & Nichols, 1996). Deep strategy use includes metacognitive and effort management strategies such as regulating attention, persistence, relating new information to existing knowledge, and actively monitoring comprehension (e.g., "I went back over things that I did not understand"). Surface strategy use includes help seeking or effort-avoidant strategies that maximize short-term retention of information (e.g., "I skipped the hard parts"). These measures tend not to be situation specific; rather, they ask students to generalize about their cognitions and actions across situations and contexts.

Observational techniques also have been used to assess cognitive engagement and strategy use in specific subject areas, including math, reading, and science, although these techniques are less common. For example, Helme and Clarke (2001) observed mathematics classrooms for indicators of cognitive engagement such as self-monitoring, exchanging ideas, giving directions, and justifying an answer. Turner (1995) observed four categories of behavior during reading activities: use of reading strategies, use of learning strategies, evidence of volitional control strategies, and evidence of persistence. Lee and colleagues examined students' attempts to achieve scientific understanding (Lee & Anderson, 1993; Lee & Brophy, 1996), noting behaviors such as relating the task to prior knowledge, requesting clarification, and using analogies as measures of cognitive engagement. These observational studies measured students' cognitive engagement in specific tasks and domains.

Several issues complicate the measurement of cognitive engagement. One is the inherent difficulty of assessing cognition (Pintrich, Wolters, & Baxter, 2000; Winne & Perry, 2000). Because cognition is not readily observable, it must be either inferred from behavior or assessed from self-report measures. As students work, it is difficult to discern by observation whether they are trying to get the work done as quickly and easily as possible or whether they are using a variety of deep-level learning strategies to master the content. Moreover, tasks in many classrooms involve drill and practice or memorization of facts, which may require only surface-level strategy use. Hence it may be difficult to find deep-level strategy use, because what can be measured is a function of what is afforded by the classroom. In addition, tapping cognitive engagement in elementary grades is particularly difficult. There are several measures for older students (middle school, high school, and college) and a dearth of self-report measures for younger children. Because children's metacognitive knowledge increases with age (Schneider & Pressley, 1997), it is challenging and perhaps developmentally inappropriate to assess their strategy use with questions that fundamentally require reflection on cognition. Another problem is that most self-report measures do not link strategy use to specific tasks. Consequently, students are asked to think hypothetically about what might happen, which is also problematic for younger children.

In summary, the cognitive engagement literature can be strengthened by drawing on the broader motivational literature on goals and intrinsic motivation, which includes survey items that might be indicators of psychological investment. Cur-

rently, investment and strategy use are measured separately or, in some cases, are not measured at all. To fully assess psychological investment in academic tasks, a more inclusive measure is needed that combines measures that target preferences for hard work and challenge with measures that target precisely how students think. In addition, researchers should consider including survey items from the self-regulation literature or observational techniques that assess the quality of engagement.

Summary

In addition to the specific problems that we have noted concerning the measurement of each type of engagement, there are measurement problems that span all three. Some scholars include conceptually distinct and discrete scales for each type of engagement (e.g., Miller et al., 1996; Nystrand & Gamoran, 1991; Patrick, Skinner, & Connell, 1993; Skinner & Belmont, 1993); others combine these into a single, general engagement scale (e.g., Connell, Halpern-Felsher, Clifford, Crichlow, & Usinger, 1995; Marks, 2000; Lee & Smith, 1995). The practice of combining items into general scales precludes examining distinctions among the types of engagement. In addition, conceptual distinctions are blurred because similar items are used to assess different types of engagement. For example, questions about persistence and preference for hard work are included as indicators of both behavioral engagement (Finn et al., 1995) and cognitive engagement (Connell & Wellborn, 1991).

An additional problem is that most measures do not distinguish a target or source of engagement. In some measures the target is quite general, such as "I like school"; in others, the social and academic aspects of school are combined. This melding makes it impossible to determine the actual source of engagement. In addition, most of the self-report measures of behavioral, emotional, and cognitive engagement do not specify subject areas. Incorporating domain-specific measures can help to determine to what extent engagement represents a general tendency and to what extent it is content specific. Recent research has begun to address this problem; observational methods and discourse analysis are being used to examine emotional and cognitive engagement in math (Helme & Clarke, 2001), science (Blumenfeld & Meece, 1988; Lee & Anderson, 1993) and reading (Alvermann, 1999; Guthrie & Wigfield, 2000). Furthermore, measures are rarely attached to specific tasks and situations, instead yielding information about engagement as a general tendency. Thus it is difficult to ascertain to what extent engagement is a function of individual differences or contextual factors. Finally, current measures do not tap qualitative differences in the level of engagement, making it difficult to distinguish the degree of behavioral, emotional, or cognitive investment or commitment.

Each type of engagement combines several constructs that are usually measured individually. As a consequence, the measures of the constructs in engagement scales are less well developed than when each construct is examined separately. For example, emotional engagement scales typically include one or two items about interest and values along with items about feelings. Other measures that focus only on interest and value include many items that make distinctions within interest, such as intrinsic versus situational interest, and within value, such as intrinsic, utility, and attainment value (Eccles et al., 1983; Krapp et al., 1992). Obviously, to measure every construct in detail is not practical, because of time and resource constraints. If the goal is to study and understand a particular construct in depth, then the typical measures of engagement that are more inclusive are insufficient. However, if the

goal is to predict staying in school or academic success, then any disadvantages of using only a few items to tap each construct may be offset by the increased predictive strength of a streamlined single measure. The benefits of the tradeoff remain to be determined by researchers who study engagement.

Outcomes of Engagement

Achievement

Several studies have demonstrated a positive correlation between behavioral engagement and achievement-related outcomes (e.g., standardized tests, grades) for elementary, middle, and high school students (Connell, Spencer, & Aber, 1994; Marks, 2000; Skinner, Wellborn, & Connell, 1990; Connell & Wellborn, 1991). Discipline problems also have been associated with lower school performance across grade levels (Finn et al., 1995; Finn & Rock, 1997). For example, Finn et al. categorized fourth-grade elementary school students as disruptive, inattentive, or withdrawn and contrasted them with students who displayed none of these types of behavior. The authors found that disruptive and inattentive students had lower scores on achievement tests. In addition, Finn and Rock documented large, significant differences on behavioral engagement measures among high school students classified as resilient (still in school and academically successful), nonresilient completers (still in school and not academically successful), and noncompleters (dropouts). Although much of the research in this field has been cross-sectional, longitudinal studies show that early problems with behavioral engagement have long-lasting effects on achievement. For example, the Beginning School Study (Alexander, Entwisle, & Dauber, 1993; Alexander, Entwisle, & Horsey, 1997) showed that teachers' ratings of behavioral engagement in the first grade were related to achievement test score gains, grades over the first 4 years, and decisions to drop out of high school.

In general, there is a consistent association between teacher and student reports of behavioral engagement and achievement across a variety of samples. The strength of this correlation varies across studies. One possible reason is the variety of students studied, ranging from at-risk to gifted students. Another is the use of various achievement measures, including self-reports of grades, teachers' grades, nationally standardized achievement tests, and tests administered by schools, districts, or states. The correlation may be overestimated in the case of grades because teachers take behaviors that indicate effort, such as completing work and paying attention, into account when assigning grades. In addition, the association may be overestimated in the case of tests, which often assess memory and low-level skills, where simply doing the work and paying attention (indicators of behavioral engagement) may be sufficient for success. In contrast, behavioral engagement may not be a very good predictor of performance on assessments that require deep understanding of the material.

Much less research exists on emotional engagement and achievement. Some studies show a correlation between achievement and a combined measure of emotional and behavioral engagement (Connell et al., 1994; Skinner et al., 1990). However, these studies do not allow for an examination of the unique contribution of emotional engagement on academic outcomes because they combine different types of engagement. Voelkl (1997) documented that school identification, measured by value and school belonging, was significantly correlated with achievement test scores in fourth and seventh grades for White students but not for African American students.

Studies of the relationship of specific constructs combined under the term emotional engagement, such as interest and value, also show varying associations with achievement (Pintrich & De Groot, 1990; Schiefele, Krapp, & Winteler, 1992).

Achievement benefits are found when students are rated as going beyond, doing more work than is required, or initiating discussions with the teacher about school subjects (Fincham, Hokoda, & Sanders, 1989). Research on instructional discourse also demonstrates the achievement benefits of cognitive engagement. Nystrand and Gamoran (1991) documented that substantive engagement (similar to cognitive engagement) in the classroom was positively related to scores on an achievement test developed to measure students' in-depth understanding and synthesis. Numerous studies from the field of learning also have shown the achievement benefits of strategy use. Children who use metacognitive strategies, such as regulating their attention and effort, relating new information to existing knowledge, and actively monitoring their comprehension, do better on various indicators of academic achievement (Boekarts et al., 2000; Zimmerman, 1990).

In conclusion, the research reviewed shows that behavioral engagement (e.g., participation, work behavior, and conduct) is correlated with higher achievement across various samples and ages. Similarly, the link between one aspect of cognitive engagement—strategy use—and achievement in the middle and high school years has been well documented. There also is some evidence of a correlation between emotional engagement and achievement. However, support for this correlation comes mainly from the literature on specific constructs incorporated into definitions of emotional engagement, such as interest and value. Because much of this research is cross-sectional, one concern is that the causal direction has not been identified and that any causality may be bidirectional over time. Moreover, measurement problems make it impossible to disentangle the unique contribution of each type of engagement to achievement. Finally, the correlation between engagement and achievement varies depending on how achievement is assessed. Behavioral engagement is likely to be associated with teacher grades and scores on tests that tap basic skills, whereas links with cognitive engagement are more likely to emerge when tests measure synthesis, analysis, and deep-level understanding of content. Although these problems make it difficult to draw firm conclusions, there is evidence from a variety of studies to suggest that engagement positively influences achievement.

Dropping Out

Engagement may help to protect individuals from dropping out of school. Most of the research on this correlation explores the impact of behavioral engagement on the decision to drop out of school. Ekstrom, Goertz, Pollack, and Rock (1986) showed that students who eventually drop out do less homework, exert less effort in school, participate less in school activities, and have more discipline problems at school. Other studies of urban minority samples demonstrate a correlation between low behavioral engagement and cutting class, skipping school, suspension, and retention (Connell et al., 1994; Connell et al., 1995). Involvement in these risky behaviors is a precursor to dropping out. Further evidence comes from the research on extracurricular participation, an aspect of behavioral engagement in school. Involvement in extracurricular activities has been associated with a decreased likelihood of dropping out of school and may be particularly important for certain populations, such as students who are academically at risk and low-income girls (Ekstrom et al.,

1986; Mahoney & Cairns, 1997; McNeal, 1995). Other research has shown that behavioral engagement can reduce the likelihood of dropping out and the likelihood of school-age pregnancy among teenage girls (Manlove, 1998; Pillow, 1997).

Behavioral engagement in the early years of schooling is a critical mediator in the dropout process (Rumberger, 1987). The Beginning School Study provides the most extensive research documenting the longitudinal effects of early school behaviors on decisions to drop out (Alexander et al., 1997; Ensminger & Slusarcick, 1992; Entwisle & Alexander, 1993). Teachers' ratings of children's behavioral engagement and academic adjustment in the first grade were related to the decision to drop out of high school (Alexander et al., 1997). Dropouts are more likely than other students to have poor attendance, display disruptive behaviors, and exhibit early school failure (Barrington & Hendricks, 1989; Cairns, Cairns, & Neckerman, 1989).

Students' emotional engagement also has impact on the decision to drop out. Some scholars have claimed that alienation, or feelings of estrangement and social isolation, contribute to the dropout problem (Finn, 1989; Newmann, 1981). Ethnographic studies support this claim; perceiving an emotional connection to the school or teachers can be a protective factor that keeps at-risk children in school (Fine, 1991; Mehan, Villanueva, Hubbard, Lintz, Okamato, & Adams, 1996; Wehlage et al., 1989). Studies that have examined specific concepts related to engagement point to similar findings. Students who have social difficulties and negative attitudes toward school are more likely to drop out of school (Cairns & Cairns, 1994; Ekstrom et al., 1986; Wehlage & Rutter, 1986).

Several conceptual models have been developed to explain how and why engagement is related to the decision to drop out, but to date there are few empirical studies testing the validity of these models. Finn's (1989) participation–identification model assumes that patterns of engagement and disengagement in the early grades have long-term effects on students' behavior and academic achievement in the later years. According to this model, lack of participation (i.e., lack of behavioral engagement) leads to unsuccessful school outcomes, which in turn lead to emotional withdrawal and lack of identification with the school. Lack of identification is related to nonparticipation in school-related activities, resulting in even less academic success. The process is cyclical: Participation and identification reciprocally influence each other. Other researchers argue that the dropout process is influenced jointly by engagement and school membership (Newmann et al., 1992; Wehlage et al., 1989). These models assume that the decision to drop out is shaped by individuals' social relationships, commitment to the institution, and belief in the value and legitimacy of school.

In summary, several studies show that behavioral disengagement is a precursor of dropping out. These findings have been based on various measures of behavior (participation, work involvement, and conduct) across ethnically diverse samples in the elementary and high school years. There is less empirical evidence of a correlation between emotional engagement and dropping out. However, the ethnographic research indicates that an emotional connection to teachers and peers can help to reduce dropout rates. We found no studies of cognitive engagement and dropping out. In addition, we know very little about the process by which disengagement influences the decision to drop out. Longitudinal research that explores the mediating processes between behavioral and emotional disengagement and dropping out is critical for intervention efforts. Furthermore, dropout rates vary dramatically by school, even after controlling for demographic characteristics (Rumberger, 1995). An impor-

tant issue for future study is which aspects of the school and classroom context can promote engagement. Some possible answers to this question can be found in the next section, where we review factors in the school and classroom that are related to engagement.

Antecedents of Engagement

Family, community, culture, and educational context influence engagement (Connell & Wellborn, 1991; Mehan et al., 1996; Ogbu, 2003). However, a discussion of the first three factors is beyond the scope of this article. Here, we focus on the impact of the educational context on engagement. First, we describe the school-level factors that are associated with engagement. Next, we review the research on classroom context and engagement. Finally, we discuss how individual needs may mediate the relation between the classroom context and engagement. We include findings from studies in major journals cited by engagement researchers as supporting a link between engagement and specific aspects of context when the amount of research on that aspect is relatively small. Our goal is not to provide a comprehensive review of the related literatures but to determine whether these aspects of context merit attention in future research on engagement.

School-Level Factors

In a review article, Newmann (1981) outlined characteristics of high schools that can reduce student alienation and "increase students' involvement, engagement, and integration in school" (p. 546). These include voluntary choice, clear and consistent goals, small size, student participation in school policy and management, opportunities for staff and students to be involved in cooperative endeavors, and academic work that allows for the development of products. There is evidence to support many of these principles. For instance, school size influences behavioral and emotional engagement. In a classic study, Barker and Gump (1964) found that students' opportunities to participate and develop social relations were greater in small schools than in large ones. Researchers who specifically study engagement report similar findings. Students in small schools participate more in extracurricular and social activities (Finn & Voelkl, 1993). Wehlage and Smith (1992) concluded that small alternative high schools were more likely to have the conditions that promote engagement for at-risk students, including an emphasis on building school membership and a curriculum characterized by authentic work. The school restructuring movement, which supports changing from a bureaucratic to a communal structure, embodies many of the principles outlined by Newmann (1981). Communal structures encourage shared responsibility and commitment to common goals, lateral decision making, and greater individual discretion. Using the National Educational Longitudinal Study, Lee and Smith (1993, 1995) found that students in schools with more elements of communal organization showed higher engagement and greater gains in engagement over time.

Other research has examined disciplinary practices, school engagement, and the decision to drop out. Fairness and flexibility in school rules are assumed to reduce the risk of disengagement (Finn & Voekl, 1993; Miller, Leinhart, & Zigmond, 1988; Natriello, 1984). However, the results concerning this assumption are mixed. Natriello (1984) interviewed students about disciplinary and evaluation practices in their schools and found that students who perceived lack of fairness in implementing

rules were more likely to be behaviorally disengaged. In contrast, Finn and Voelkl did not find that rigid rules and an emphasis on discipline had a negative impact on behavioral engagement. Other work shows that schools that hold students accountable for behavioral standards have a lower incidence of dropping out (Bryk & Thum, 1989; McDill, Natriello, & Pallas, 1986).

The goal of some current school reforms is to increase engagement. One example is the First Things First model (Institute for Research and Reform in Education, 2003), developed to increase engagement and achievement in under-performing urban and rural areas. This reform model focuses on teachers to decrease the student/adult ratio and to increase continuity of care; on academics to instantiate high standards and enriching and diverse learning tasks; and on staff to enhance collective responsibility and opportunities for instruction. Initial evaluations demonstrate positive effects on behavioral engagement (e.g., attendance, persistence, and misconduct) and emotional engagement (e.g., school connectedness and support from teachers). Another intervention model is the School Development Program, intended to mobilize the entire school community to support students' holistic development (Comer, 1980). Evaluations of this model in urban schools show increases in positive affect and attitudes toward school, which are aspects of emotional engagement, and decreases in truancy and disciplinary problems, which are aspects of behavioral engagement (Cook, Habib, Phillips, Settersten, Shagle, & Degirmencioglu, 1999).

In summary, this research suggests that school-level factors are associated with behavioral engagement. There is less evidence about the link between school-level factors and emotional and cognitive engagement. Future investigations need to systematically examine the impact of school-level factors, such as those noted by Newmann (1981), on the three types of engagement across diverse populations and ages. Longitudinal tracking of changes in engagement as a result of attempts to alter the school context also are needed. There are several widely implemented school reforms that focus on increasing achievement and not explicitly on engagement (see Borman, Hewes, Overmann, & Brown, 2003, for a review of school reforms). Although evaluations of these reforms do not specifically measure it, engagement may be the mediator that links reforms to outcomes. Including engagement measures in these intervention studies can provide insight into the degree to which engagement is responsive to variations in the environment and can point to the specific school and classroom changes that have the largest effects on behavioral, emotional, and cognitive engagement.

Classroom Context

In this section, we discuss classroom context and engagement. We focus on factors that have been studied in the engagement literature, including teacher support, peers, classroom structure, autonomy support, and task characteristics.

Teacher Support

Teacher support has been shown to influence behavioral, emotional, and cognitive engagement. Teacher support can be either academic or interpersonal, although the majority of studies do not make this distinction and many studies combine items about the two into one scale (Wenztel, 1997). Teachers' reports of the quality of the teacher–child relationship in the early school years have been associated with teachers' ratings of behavioral engagement, such as cooperative participation and self-

directedness (Birch & Ladd, 1997; Valeski & Stipek, 2001). Children's initial behavioral engagement also influences their relationship with the teacher (Ladd et al., 1999). In fact, an extensive literature suggests that teachers prefer students who are academically competent, responsible, and conform to school rules over students who are disruptive and aggressive (see Kedar-Voivodas, 1983). This preference is likely to lead teachers to provide different opportunities to behaviorally engaged and disengaged students. However, the majority of the research on teacher support and engagement has been cross-sectional, making it difficult to test these reciprocal links. One exception is the research by Skinner and Belmont (1993). They documented that teacher involvement was positively associated with engagement, and that, in turn, higher student engagement elicited greater teacher involvement.

Other work has examined the effect of perceived teacher support in the elementary, middle, and high school years. Teacher support and caring has been correlated with various aspects of behavioral engagement, including higher participation in learning and on-task behavior (Battistich, Solomon, Watson, & Schaps, 1997), lower disruptive behavior (Ryan & Patrick, 2001), and a lower probability of dropping out of school (Croninger & Lee, 2001) among samples of ethnically diverse elementary, middle, and high school students. Furthermore, Marks (2000) demonstrated that a classroom environment in which students received support from both teachers and peers was associated with higher engagement among elementary, middle, and high school students in schools undergoing reforms. Additional evidence of the importance of teacher support comes from the ethnographic research; students are more likely to drop out of school when they feel they do not have a positive or supportive relationship with their teachers (Farrell, 1990; Fine, 1991; Wehlage et al., 1989).

Teacher support has been correlated with emotional engagement in a primarily White middle-class sample (Connell & Wellborn, 1991; Skinner & Belmont, 1993). This research replicates an earlier literature on classroom climate that related perceived teacher support and student attitudes (Fraser & Fisher, 1982; Moos, 1979). It is also similar to research on the middle school transition, which shows a decline in the quality of teacher–student relations and may explain the decrease in adolescents' interest during this period of their lives (Feldlaufer, Midgley, & Eccles, 1988; Midgley, Feldlaufer, & Eccles, 1989).

Another body of literature has investigated teacher support and cognitive engagement. A sample of middle school students reported higher cognitive engagement and greater use of learning and metacognitive strategies in classrooms where teachers presented challenging work and pressed for understanding (Blumenfeld & Meece, 1988; Blumenfeld, Puro, & Mergendoller, 1992). Observational studies illustrate the benefits of a socially supportive and intellectually challenging environment. In classrooms where teachers created respectful and socially supportive environments, pressed students for understanding, and supported autonomy, students were more strategic about learning and had higher behavioral engagement and affect (Stipek, 2002; Turner, Meyer, Cox, Logan, DiCintio, & Thomas, 1998). If teachers focus only on academics but create a negative social environment, students are likely to experience emotional disengagement and be more apprehensive about making mistakes. In contrast, if teachers focus only on the social dimension but fail to attend to the intellectual dimensions, students are less likely to be cognitively engaged in learning.

In summary, numerous studies have illustrated a link between teacher support and behavioral engagement. These studies are based on a variety of measures of behavior

(e.g., participation, work involvement, and conduct) across diverse samples in the elementary, middle, and high school years. Most of the evidence concerning the association between teacher support and emotional engagement comes from related literatures. Findings concerning the impact of teacher support on cognitive engagement are beginning to accumulate and point to the importance of a combination of academic and social support. Determining whether the effects of social or academic support on engagement vary with student age and background requires further study. Finally, because the majority of research has been cross-sectional rather than longitudinal, we know very little about the long-term consequences of teacher support on behavioral, emotional, and cognitive engagement.

Peers

Researchers have focused less on the peer group than on teachers as a factor in the socialization of engagement (Ryan, 2000). Children in elementary and middle school cluster together in peer groups with similar levels of engagement, and this clustering strengthens existing differences (Kindermann, 1993; Kindermann, McCollam, & Gibson, 1996). For example, Kindermann (1993) used social composite mapping to document that elementary school children who were affiliated with high engagement peer groups increased their level of behavioral engagement across the school year.

The bodies of literature on peer acceptance and rejection have been used as theoretical justification for studying peers and engagement. Peer acceptance in both childhood and adolescence is associated with satisfaction in school, which is an aspect of emotional engagement, and socially appropriate behavior and academic effort, which are aspects of behavioral engagement (Berndt & Keefe, 1995; Ladd, 1990; Wentzel, 1994). In contrast, children who are rejected during the elementary school years are at greater risk for poor conduct and lower classroom participation, both elements of behavioral engagement, and lower interest in school, an aspect of emotional engagement (Buhs & Ladd, 2001; DeRosier, Kupersmidt, & Patterson, 1994). Peer support and engagement are likely to be reciprocal. Children who do not conform to school rules or who dislike school are less likely to perceive peers as supportive (Ladd et al., 1999; Ladd & Coleman, 1997). Peer rejection in both childhood and adolescence increases the probability of dropping out of school (French & Conrad, 2001; Parker & Asher, 1987).

Other work has focused on the negative effect of the peer group on adolescents' commitment to doing well in school, especially among minority youth. Ogbu's cultural ecological model attempts to explain the academic failure of involuntary minority groups (Ogbu, 1987, 2003). Ogbu claims that students in these groups disengage from school because they perceive limited opportunities to attain school success and they fear peer rejection for "acting White" in trying to get good grades. Several scholars have criticized Ogbu's theory for its failure to explain why some minority students do try to succeed whereas others disengage from school (Conchas, 2001; Mehan et al., 1996; O'Connor, 1997).[1] Recent qualitative descriptions of resistance and resilience examine minority youth's perceptions of discrimination, social support, and school engagement. Students who perceive that race and class constrain their educational opportunities, but who also have social supports that promote the development of agency and strategies for confronting discrimination, are

more likely to remain engaged in school (Conchas, 2001; Deyhle, 1995; Mehan et al., 1996; O'Connor, 1997; Stanton-Salazar, 2001).

Newer work on cognitive engagement and learning communities illustrates how peers can be more than friends or associates. Cognitive engagement is enhanced when class members actively discuss ideas, debate points of view, and critique each other's work (Guthrie & Wigfield, 2000; Meloth & Deering, 1994; Newmann, 1992). For example, Guthrie and colleagues created a year-long intervention program that emphasized peer interactions and the use of interesting materials as crucial aspects of enhancing engagement in reading (Guthrie, McGough, Bennett, & Rice, 1996).

In conclusion, the primary evidence for the effect of peers on engagement comes from studies of naturally occurring peer groups (Kindermann, 1993; Kindermann et al., 1996). Other work has shown that the peer group can contribute to school disengagement among minority youth. Related studies that use constructs and measures similar to those used in the engagement literature also illustrate the link between peers and engagement. For example, peer acceptance and peer rejection are predictors of outcomes that are aspects of behavioral engagement (e.g., participation, conduct, work involvement) and emotional engagement (e.g., interest, satisfaction in school). Future investigations should examine the impact of peers on cognitive engagement. They should also consider whether there are developmental and group differences in how peers affect engagement. For example, whether the relationship is stronger for older children, as they develop gender, racial, and cultural identities, remains to be explored.

Classroom Structure

Other research has explored the impact of classroom structure on behavioral and emotional engagement. Connell and others (Connell, 1990; Connell & Wellborn, 1991; Skinner & Belmont, 1993) have explored the association between students' perceptions of classroom structure and their behavioral engagement. Structure refers to the clarity of teacher expectations for academic and social behavior and the consequences of failing to meet those expectations (Connell, 1990). Teachers who are clear in their expectations and provide consistent responses have students who are more behaviorally engaged (Connell & Wellborn, 1991; Skinner & Belmont, 1993). Fredricks, Blumenfeld, Friedel, and Paris (2002) found that students' perceptions of work norms were positively correlated with behavioral, emotional, and cognitive engagement.

The research on classroom structure duplicates earlier work on classroom climate that showed a correlation between rules, clarity, work orientation, and student attitudes (Moos, 1979; Fraser, 1991). Another extensive body of research, which has not been cited in studies of engagement, demonstrates that teachers in well-managed classrooms create norms and employ efficient procedures that are associated with higher time on task and fewer disciplinary problems, both indicators of behavioral engagement (see reviews by Brophy & Evertson, 1976; Doyle, 1986). In summary, although only a few studies of structure and engagement exist, the findings, when considered along with those from other well-established literatures, indicate that classroom structure should be examined in future work on the effects of context on engagement.

Autonomy Support

Contexts that support autonomy are presumed to enhance engagement (Connell, 1990). Autonomy-supportive classrooms are characterized by choice, shared decision making, and absence of external controls, such as grades or rewards and punishments, as reasons for doing schoolwork or behaving well (Connell, 1990; Deci & Ryan, 1985). These claims derive from laboratory-based experiments on intrinsic motivation, which demonstrate that controlling environments diminish interest, preference for challenge, and persistence—all aspects of engagement (Deci & Ryan, 1987; Grolnick & Ryan, 1987; Ryan & Grolnick, 1986). In contrast, in a field study, Skinner and Belmont (1993) failed to document a link between perceived autonomy support and engagement.

Only limited research has been done on the consequences of autonomy support in classroom contexts where choices are more constrained than in laboratory settings. One example is research in literacy on open-choice tasks: In two separate studies, suburban elementary school students whose teachers offered more choices—about which literacy tasks to perform and when and where to perform them—worked more strategically and persisted longer in the face of difficulty, thus manifesting two aspects of cognitive engagement (Turner, 1995; Perry, 1998). In contrast, studies of the junior high school transition do not corroborate presumed influences of autonomy support. Junior high school classrooms are characterized by a greater emphasis on teacher control and discipline and fewer opportunities for student decision making than are elementary school classrooms (Midgley & Feldlaufer, 1987; Moos, 1979). Eccles and colleagues hypothesized that the lack of opportunities for student autonomy would help to explain declines in interest, one aspect of emotional disengagement, during the transition from elementary to middle school. This hypothesis has not been empirically supported in longitudinal research (Eccles et al., 1993).

Before claims can be made about the benefits of autonomy-supportive environments for engagement, there is a need for more research into the consequences of choice, opportunities for decision making, and reward structures for behavioral, emotional, and cognitive engagement in actual classroom settings. Most studies have been conducted with predominately White samples; research on the impact of autonomy support on engagement across various ethnic and racial populations is critical. Another important question is whether there are developmental differences in the effects of autonomy-supportive environments on engagement. For example, the engagement of adolescents, who are more capable and desirous of independence, may be more responsive to such contexts. Finally, it remains to be determined what is the optimal mix of autonomy support and classroom structure for promoting engagement.

Task Characteristics

Many studies demonstrate a link between behavioral engagement and achievement (Connell et al., 1994; Marks, 2000; Skinner et al., 1990). The reason may be that tasks that require recall or repetition of procedures are the most common instructional approach in classrooms (Larson, 2000; Newmann et al., 1992). Students can complete assignments by paying attention and staying on-task and using superficial learning strategies to memorize rather than deeper strategies to understand what is being taught. Unfortunately, this type of schoolwork is not likely to require intensive effort and self-regulation or to engender commitments to learning that pro-

mote deep understanding and flexible use of knowledge—hallmarks of cognitive engagement.

Newmann theorizes that engagement in learning will be enhanced in classrooms where the tasks (a) are authentic; (b) provide opportunities for students to assume ownership of their conception, execution, and evaluation; (c) provide opportunities for collaboration; (d) permit diverse forms of talents; and (e) provide opportunities for fun (Newmann, 1991; Newmann et al., 1992). Newmann's conceptualization incorporates academic and social aspects of context, such as the nature of academic work and peer interactions, whose influence usually is studied separately. Similar combinations of contextual factors are included in theories of engagement proposed by Guthrie and colleagues (Guthrie & Anderson, 1999; Guthrie & Wigfield, 2000). Guthrie and Wigfield argue that engagement in reading is enhanced in classrooms with interesting texts, real-world interactions, autonomy support, strategy instruction, opportunities for collaboration, and teacher involvement.

In one of the few empirical studies to examine task characteristics and engagement, Marks (2000) tested the impact of authentic instructional work and social support on engagement in schools undergoing reforms to improve achievement. Using a combined measure of behavior and emotion, she found that elementary, middle, and high school students' perceptions of the opportunities to be involved in authentic instruction were a strong unique predictor of engagement. Similarly, Fredricks et al. (2002) examined the impact of task challenge, work norms, teacher support, and peer support on behavioral, emotional, and cognitive engagement among low-income urban elementary school students. They found that perceptions of task challenge were uniquely associated with each type of engagement.

Other research has used observational techniques to examine task characteristics and cognitive engagement in math (Helme & Clarke, 2001) and science (Blumenfeld & Meece, 1988). Helme and Clarke concluded that cognitive engagement is more likely to be observed when students work with peers on novel tasks that have personal meaning. Blumenfeld and Meece showed that both tasks and teachers influence engagement. They found that students in science classes in Grades 4–6 who were assigned complex hands-on tasks reported higher cognitive engagement and motivation to learn when teachers provided instructional support and pressed students for understanding.

Few studies of context and engagement include measures of academic work (see Blumenfeld et al., in press; Fredricks et al., 2002; Marks, 2000). However, the studies that do include such measures show that authentic and challenging tasks are associated with higher behavioral, emotional, and cognitive engagement. This is especially true when studies examine social and academic dimensions together. One concern about this literature is that much of our knowledge of engaging tasks comes from theoretical pieces and observational studies in middle and high schools undergoing instructional reforms. We need to know more about the impact of task characteristics on engagement across age, socioeconomic status, and race. Another question for future inquiry is how individual differences, such as children's ability levels, moderate the relationship between task characteristics and engagement.

In summary, we reviewed school and classroom factors that are associated with engagement. In general, there is more research on social contextual factors than on academic factors and engagement. Many of the findings are based on related studies of context cited by engagement researchers as support for their ideas. Our review

indicates that these antecedents merit further consideration in an engagement framework. One concern is that the literature does not test the underlying assumption that engagement is the mediator between context and achievement. In general, researchers have examined engagement as an outcome rather than testing whether the relation between context and engagement leads to other outcomes of interest, such as achievement. Another concern is that almost no studies examine how a given classroom factor or school factor influences the three types of engagement simultaneously. As a consequence, we do not know whether the environment affects each type of engagement similarly. An additional concern is that researchers tend to examine aspects of context separately rather than considering how the pattern of contextual variables working together influences engagement. The literature on task characteristics is beginning to address this point. From the current body of work, however, it is not clear whether these classroom factors work additively or interactively to influence engagement, or whether the presence of some contextual factors compensates for the absence of others.

Individual Needs

In this section, we review studies that assume that individual needs are a mediator between contextual factors and engagement. We also draw on motivational research with similar conceptualizations of needs. The most prevalent theory of individual needs and engagement is Connell's self-system model (Connell, 1990; Connell & Wellborn, 1991). According to this perspective, individuals have fundamental psychological needs for relatedness, autonomy, and competence. The degree to which students perceive that the classroom context meets those needs determines how engaged or disaffected they will be in school. However, few scholars include measures of context, needs, and engagement in the same study. Instead most simply examine the direct link between individual needs and engagement.

Need for Relatedness

It is assumed that students will be more engaged when classroom contexts meet their needs for relatedness, which is likely to occur in classrooms where teachers and peers create a caring and supportive environment. Elementary school students who had higher perceived relatedness, conceptualized as the emotional quality of relationships, were more engaged, as rated by teachers (Connell & Wellborn, 1991). Similarly, Furrer and Skinner (2003) found that perceived relatedness to teachers, parents, and peers uniquely contributed to emotional engagement. Furthermore, using a combined measure of emotional and behavioral engagement, Ryan, Stiller, and Lynch (1994) found that middle school students who felt more secure with teachers had higher engagement.

The research on the concept of belonging, which is similar to the need for relatedness, also supports this assumption (see review by Osterman, 2000). Belonging is defined as an individual's sense of being accepted, valued, included, and encouraged by others (Baumeister & Leary, 1995). Osterman (2000) concluded that feelings of belonging were linked to engagement and ultimately to the decision to drop out. In addition, Goodenow and colleagues have shown a positive association between perceptions of school belonging in adolescence and effort, an aspect of behavioral engagement (Goodenow, 1993; Goodenow & Grady, 1993). Other work focuses on the development of schools as communities, which is similar to the need for related-

ness (Osterman, 2000; Solomon, Watson, Battistich, Schaps, & Delucchi, 1996). Battistich, Solomon, and others have shown a positive association between students' perceptions of community and positive affect and intrinsic motivation (Battistich et al., 1997; Solomon, Battistich, Watson, Schaps, & Lewis, 2000). All of the studies show a direct link between the need for relatedness, or similar needs, and engagement. We found only one study that tested whether the need for relatedness mediated the relation between context and engagement. Roeser, Midgley, and Urdan (1996) showed that perceptions of positive teacher–student relationships predicted positive school-related affect and that this relation was mediated through feelings of school belonging.

Need for Autonomy

Individuals have a need for autonomy, or a desire to do things for personal reasons, rather than doing things because their actions are controlled by others (Ryan & Connell, 1989). It is assumed that the need for autonomy is most likely to be met in contexts where students have choice, shared decision making, and relative freedom from external controls. When individuals' autonomy needs are met, it is assumed that they will be more engaged (Connell & Wellborn, 1991). A few studies have examined the link between engagement and the need for autonomy; no studies have tested whether autonomy needs are a mediator between measures of autonomy-supportive contexts and engagement. The need for autonomy is assessed by asking individuals to report on their reasons for participating in an activity. Reporting more autonomous (internal) reasons for involvement in schoolwork, such as pursuing the activity out of interest or for the pleasure of doing so, has been positively associated with behavioral engagement (e.g., participation, work involvement) and emotional engagement (e.g., interest and happiness) in elementary school (Connell & Wellborn; Patrick et al., 1993). Similarly, Ryan and Connell (1989) found a positive association between autonomy styles and positive affect.

Need for Competence

Competence involves beliefs about control, strategies, and capacity (Connell & Wellborn, 1991; Skinner et al., 1990). When individuals' need for competence is met, they believe that they can determine their success (control beliefs), can understand what it takes to do well (strategy beliefs) and to succeed (capacity beliefs). The assumption is that students' need for competence is met when they experience classrooms as optimal in structure and have adequate information about how to effectively achieve desired outcomes (Connell & Wellborn; Skinner & Belmont, 1993). We found no studies that tested the assumption that classroom structure is positively associated with the need for competence.

Several studies have tested the direct link between perceived competence and engagement. Perceived competence and control beliefs have been associated with behavioral and emotional engagement in both the elementary and middle school years (Connell et al., 1994; Rudolph et al., 2001; Skinner et al., 1990). The long-term consequences of control beliefs on engagement also have been examined. Using hierarchical linear modeling, Skinner, Zimmer-Gembeck, and Connell (1998) documented that high perceptions of control helped to offset declines in engagement (a combined measure of behavior and emotion) from third to seventh grade. Expectancy beliefs (Eccles et al., 1983) and self-concept of ability (Harter, 1983) are cited in the

engagement literature as similar to need for competence. In both junior high and high school samples, expectancy measures predicted students' use of cognitive and metacognitive strategies (Pintrich & De Groot, 1990; Pintrich & Garcia, 1991; Zimmerman & Martinez-Ponz, 1992). Furthermore, Valeski and Stipek (2001) found that first-grade students' perceptions of academic competence were significantly associated with teachers' ratings of engagement.

Summary of Needs

The literature on needs provides a theoretical perspective on why certain contextual factors promote engagement. However, the degree to which needs mediate between contextual factors and engagement is not examined in most studies. In general, the research has tested the direct link between needs and engagement. For example, there is fairly consistent evidence from the literature on relatedness, belonging, and community that feeling that one belongs to and is a member of the community is associated with behavioral and emotional engagement in the elementary and middle school years. In addition, a few studies show that the need for autonomy is correlated with behavioral and emotional engagement. These studies are based on a measure of autonomy that contrasts acting for internal reasons, such as interest and pleasure, with acting for external reasons, such the teacher's requirement. The reality is that classrooms are constrained situations and students often have to perform an activity for external reasons, whether they like it or not. Finally, several studies demonstrate a consistent association between the need for competence and behavioral, emotional, and cognitive engagement in the elementary, middle, and high school years.

Our review also raises several critical questions for future inquiry. Of the various topics in the research on needs, the least studied is the relation between needs and cognitive engagement. Much of the research on that subject has been based on samples of elementary school students. Those samples need to be expanded. We also know very little about how these processes operate among minority children and older youth. Finally, although a theoretical framework of engagement based on needs is a promising way to examine the interaction between the individual and context (Connell, 1990; Connell & Wellborn, 1991), surprisingly few studies actually test mediation. Clearly, more empirical research is needed to validate the hypothesized links between contextual factors, individual needs, and engagement.

Conclusion and Future Directions

At the beginning of this article, we observed that the concept of engagement is receiving increased attention because it offers several benefits for research and practice. It is multidimensional; it has the potential to link areas of research about antecedents and consequences of how students behave, how they feel, and how they think. Ultimately, although engagement might begin with liking or participating, it can result in commitment or investment and thus may be a key to diminishing student apathy and enhancing learning. Engagement is inclusive; each type of engagement combines constructs that are usually studied separately, which results in detailed information about the constructs. Thus the concept of engagement has the potential to unify insights from a considerable body of research for practical purposes. Engagement is malleable; it is presumed to be a function of both the individual and the context. Thus it can be changed more easily than an individual trait or a gen-

eral tendency. Moreover, engagement can result from a variety of antecedents in the context, both social and academic, at both the school and classroom levels, allowing for a wide range of intervention targets. This review suggests that although much has been learned, the potential contribution of the construct of engagement toward understanding school success has yet to be realized. In this section, we highlight how the current research maps onto each of these assumptions, and we discuss the limitations of this research and offer suggestions for future research.

Engagement as a Multidimensional Concept

To date, research has not capitalized on the potential of engagement as a multidimensional construct that encompasses behavior, emotion, and cognition. The richness of encompassing the three components leads to the challenge of defining and studying each and their combination in conceptually nuanced ways. Many of the studies of engagement include one or two types (e.g., behavior and emotion) but do not consider all three. The vast majority of studies test the impact of a single type of engagement and a single outcome of interest, such as the correlation between behavioral engagement and achievement. Similarly, with a few exceptions, the literature does not examine the influence of multiple classroom antecedents on the three types simultaneously. We do not know which contextual factors or combinations of factors have the most influence on each type. Nor do we know how the coherence among contextual factors affects engagement or how different types of engagement interact (Guthrie & Wigfield, 2000). For instance, it is likely that emotional engagement leads to increases in behavioral and cognitive engagement, both of which mediate subsequent achievement. Tests for nonlinear relationships also need to be conducted to address questions about thresholds—whether it is always desirable or necessary to enhance engagement or whether some amounts of particular components are sufficient to achieve particular outcomes.

Another strength of the multidimensional concept of engagement is that it allows for rich characterizations of individuals. Yet most studies use variable-centered techniques that assume linear relations among relevant dimensions, accounting for all other factors in the model. Pattern-centered analysis techniques could be used to examine various configurations of behavioral, emotional, and cognitive engagement. This methodological technique would help to answer important questions about the desirability of various configurations of engagement and synergy among the components (see Blumenfeld et al., in press; Connell & Wellborn, 1991; Patrick et al., 1993, for examples). Research on outcomes of interest is needed to answer the following questions:

1. Are some individual patterns more predictive than others?
2. Are dimensions of engagement additive, so that having more of each is beneficial?
3. Is some amount of one component enough to compensate for less of another?

Clarifying Definitions and Measures

There are several problems with the definitions and measures of engagement. One benefit of integrated definitions of engagement is that they combine more specific concepts into a larger entity. However, definitions of the three types of engagement vary, with considerable overlap across the components. Furthermore, the definitions

and measures of concepts that are combined within each type of engagement are less precise than in studies that focus on a single concept. For example, emotional engagement includes feelings, values, and interest, each of which is more fully unpacked in the literature on motivation than in the research on engagement. Similarly, investment and strategy use are less well defined and measured when considered as two aspects of cognitive engagement than when explored as separate concepts in the literatures on motivation and self-regulation.

Another measurement problem is the common practice of using a single scale or combined averages from different scales to measure engagement. This practice allows for the measurement of general levels of engagement. However, more specific measures are necessary to disentangle links between contextual factors, outcomes, and each type of engagement (for examples, see Skinner & Belmont, 1993; Patrick et al., 1993). Similarly, the practice of combining items that measure engagement in the classroom and in the school masks potentially important differences in antecedents and outcomes of engagement by level (Stipek, 2002).

Essentially, there is a tension between conceptual clarity and practical reality. One solution is that each of the concepts should be examined in detail when the goal is greater theoretical understanding about how it operates and its unique contributions to variance in outcomes of interest. However, when the goal is more practical, for example, to predict outcomes such as school success or persistence, it may not be feasible to examine independently each of the ideas included within the types of engagement because of the large number of survey questions that would be required and the time constraints on administering surveys in schools. Mixing various concepts in measures of engagement potentially has the benefit of greater predictive power, which may compensate for what it loses in conceptual clarity. The key is to make sure that the combinations are deliberately based on an understanding of what each concept means and how it contributes to the types of engagement under study.

Our review illustrates the need for clarity about what is and is not included in engagement and for an assessment of the "value added" by studying engagement. Currently, engagement is theoretically messy; sometimes it overlaps with other constructs, sometimes it simply substitutes different terminology for the same constructs, and sometimes it incorporates constructs from other literatures in very general rather than precise ways. It is necessary to consider whether the advantages of an inclusive construct outweigh the drawbacks of the loss of specificity about the individual concepts that it incorporates. Our concern is that, although engagement has considerable practical benefit as an umbrella that synthesizes a broad range of research, it suffers from being everything to everybody.

Developmental Issues and Longitudinal Models

Engagement has been explored in the elementary, middle, and high school years, although studies of antecedents have not been spread equally over the three age ranges. For example, we know more about peer support and engagement in the elementary school years and more about task characteristics and engagement in the middle and high school years. Student engagement is likely to take different forms in the elementary and high school years. One example of this is that students may not become deeply invested in learning until they have the intellectual capacity to self-regulate and become intentional learners, which tends to occur at later ages. Future

research needs to determine whether engagement becomes less context-dependent as individuals become more invested in the value of learning and schooling.

The majority of research on engagement is cross-sectional. However, some longitudinal research has been used to document changes in engagement over time (Skinner et al., 1998) and reciprocal relations between contextual factors and engagement (Skinner & Belmont, 1993). Longitudinal research is needed to determine how behavioral, emotional, and cognitive engagement develop and whether they are synergistic. Important questions for future inquiry include the following:

1. Which types of engagement are more likely to be displayed during the early grades?
2. How do the three types of engagement evolve and change over time?
3. Are any aspects of context more important among some age groups than others?

The idea of engagement as commitment also has not been adequately explored. A vast majority of the studies rely on average scores, assuming that higher averages mean more engagement, but do not examine whether the higher scores indicate greater commitment. Longitudinal designs are needed to examine how and why engagement evolves and whether the evolution is age related. Research is needed that differentiates students who become invested in learning from those who do what they are supposed to do (e.g., attend school and achieve) but do not become invested in learning.

To date, there are few developmentally based models of how relations between engagement and context may vary as a function of age. Eccles and colleagues provide an example of how that relationship may be conceptualized and examined (Eccles et al., 1993; Eccles & Midgley, 1989). They integrate models of person–environment fit within a developmental framework to explain declines in motivation and engagement over the junior high transition. In addition, there are not many conceptual models for understanding continuity and change in engagement. Finn's participant-identification model (1989) assumes that participation (behavioral engagement) enhances identification (emotional engagement), which in turn increases participation. Longitudinal research could help to test the validity of this model for explaining changes in engagement over time.

Malleability and Interaction of Individual and Context

Another problem is that the literature does not provide adequate evidence about the malleability of engagement. The limited number of longitudinal studies leaves open questions about how responsive engagement is to changes in context. Because surveys often combine questions about the classroom, the school, academics, and social relationships, it is difficult to determine the actual source of engagement, how engagement is related to context, and how engagement changes if conditions are altered. One important area for future inquiry is the impact of school and classroom interventions on behavioral, emotional, and cognitive engagement. Widely implemented school reforms where the goal is to increase achievement, not explicitly to improve engagement, often implicitly target aspects of the context that affect engagement (Borman et al., 2003). Including measures of engagement in these intervention studies can provide insight into the degree to which engagement is the mediator between context and achievement-related outcomes. To design effective interventions

and attain desirable outcomes such as higher achievement and lower dropout rates, it is crucial to ask questions about such connections. For instance, in the effort to influence behavioral engagement, is it more important to change student–teacher relations or to change academic tasks? Or is it equally important to deal with both?

We also assume that engagement lies in the interaction of the individual and the setting. Current studies do not tell us enough about how such interactions produce engagement. We know that children who have more favorable perceptions of particular classroom factors, such as a supportive teacher, are more engaged. The presumption is that support from the teacher meets an individual's need for relatedness; but, for the most part, the mediation assumption has not been tested. In addition, it is not clear why children in the same classroom respond differently to the same antecedents. Examinations of other individual factors, such as anxiety or ability, would also be of interest. It may be that challenges accompanied by teacher or peer support will have a different impact on anxious students' engagement than will similar challenges not accompanied by such support. Future research might use person–environment models, such as the self-system model (e.g., Connell & Wellborn, 1991), across samples of children with different individual characteristics. Such research would tell us which aspects of the classroom context are most salient, and hence potentially the most important, in increasing engagement for different types of students.

The diversity of participants in engagement studies needs to be expanded. Many of the studies of context and engagement are conducted with White middle-class samples. Changing demographics, the growing literature on disengagement among minority youth, and the obstacles that many minority youth face in school have made the study of engagement among immigrant and minority youth an imperative. One needed area of inquiry is how school and classroom factors influence behavioral, emotional, and cognitive engagement among children from various ethnic and racial groups and social classes. Another interesting population for further study is teenage pregnant girls, who are more likely to disengage and drop out of school after the birth of their child (Pillow, 1997). Such research can help us to discover whether some aspects of the classroom and school context are more important than others for enhancing the three types of engagement among different populations.

Use of Multiple Methods

Another concern is the narrow array of methods used to study engagement. Many studies use student and teacher surveys to measure engagement and classroom context. From this research, we can list contextual factors that influence engagement, but thick descriptions of classroom contexts are needed to enhance our understanding of how and why they work. For example, although the research shows that teacher support is associated with engagement, we know less about what aspects of the context create those perceptions of the teacher. Recent observational studies in math and reading that explore which aspects of context create individual perceptions (e.g., Helme & Clarke, 2001; Turner et al., 1998) are critical for knowing where and how to intervene.

Research that takes a qualitative approach to understanding the phenomenology of engagement is needed. Qualitative methods can illustrate the process whereby students construct the meaning and purpose of education in a highly complex and sometimes contradictory school environment (see Locke-Davidson, 1996). In addi-

tion, qualitative methods can shed light on how the various types of engagement develop and interact, as well on as why some students begin to disengage from school. Such methods can help to explain individual and cultural differences. Qualitative studies that investigate the complex interaction between identity development, school context, and engagement are critical for advancing our understanding of how and why some students do well in school and others do not (see Conchas, 2001; Locke-Davidson; Mehan et al., 1996). Although it is beyond the scope of this article to explore the impact of the family and the community on school engagement, long-term ethnographic studies on that topic have been very helpful in explaining variation in working-class and immigrant students' identity development and school engagement (see MacLeod, 1995; C. Suárez-Orozco & M. M. Suárez-Orozco, 2001).

In summary, the evidence that we reviewed suggests that the concept of engagement merits further exploration. Engagement is associated with positive academic outcomes, including achievement and persistence in school; and it is higher in classrooms with supportive teachers and peers, challenging and authentic tasks, opportunities for choice, and sufficient structure. Despite the great amount that we have learned about academic and school engagement, the literature has several gaps. In general, the definitions, measures, and designs do not capitalize on what a multidimensional conceptualization of engagement can offer. Distinctions among the three types of engagement and among the concepts within each type need to be specified. In addition, the overlap with other literatures should be acknowledged. Moreover, the individual types of engagement have not been studied in combination, either as results of antecedents or as influences on outcomes. In addition, the research has used variable-centered rather than pattern-centered analytic techniques. As a result, we have little information about interactions or synergy. Moreover, the current research sheds little light on the development or malleability of engagement, because there are few longitudinal studies or studies of interventions. Future research should address the difficulties of studying how individuals and contexts interact. We need to know more about age, individual, racial, and cultural differences in how individuals respond to opportunities afforded by educational contexts and how the differences affect school success. More multi-method, observational, and ethnographic studies would contribute to this effort. Such information is essential for creating finely tuned interventions that target specific aspects of the environment. The hope is that such interventions can counteract well-documented declines in motivation and engagement and bring about the level of commitment that students need to benefit from schooling and to meet the challenges of society.

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[1]One criticism of Ogbu's model is that the assumptions about the lack of school engagement among involuntary racial minorities are based on an inaccurate historical account of the value that African Americans have placed on education (Anderson, 1988).

Another criticism emerging from recent cross-cultural and ethnographic research is that the strict typology of immigrants and involuntary minorities fails to apply to many immigrant groups and does not describe the diversity of school experience among ethnic minorities (Gibson, 1997).

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APPENDIX

Description of studies that explicitly use the term "engagement"

Study	Definition/measure	Sample	Method	Key findings
Alexander, Entwisle, & Horsey (1997)	Academic engagement; behavioral measure (marks for work habits from report cards and teachers' report of externalizing behavior).	Random sample of 1st-grade students in Baltimore; collected school completion data.	Survey; longitudinal design; logistic regression.	The study found a strong relationship between behavioral disengagement in the early years and dropping out of high school.
Battistich, Solomon, Watson, & Schaps (1997)	Academic engagement; classroom observation (participation, on-task behavior).	24 ethnically diverse elementary schools that were participating in the intervention program entitled Caring School Communities.	Multi-method study: classroom observation, student and teacher survey.	Students' sense of community was positively associated with academic engagement.
Birch & Ladd (1997)	Engagement/school adjustment; scales for liking, avoidance, cooperative participation, and self-directedness.	Kindergarten students; primarily White.	Survey; cross-sectional design; regression analyses.	Dependency in teacher–child relations was correlated with less positive school engagement.
Blumenfeld & Meece (1988)	Cognitive engagement; self-reports of learning strategies; distinction made between superficial and higher-level learning strategies.	4th-to-6th-grade students in science classes; middle-class schools.	Multi-method-surveys, interviews, and classroom observations; cross-sectional design; quantitative and qualitative analysis of lessons where cognitive engagement scores differed substantially.	Procedural complexity of task was negatively related to use of high-level cognitive strategies; teachers who pressed students for understanding and communicated high expectations had students with higher cognitive engagement.

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APPENDIX *(continued)*

Study	Definition/measure	Sample	Method	Key findings
Conchas (2001)	School engagement (academic success and staying in school).	26 Latino 10th- and 12th-graders; urban high school.	Multi-method case study: participant observation, interviews, and focus groups.	Institutional support system (special academic programs) increased school engagement; variability in school engagement was found among Latino youth.
Connell (1990)	Behavioral, emotional, and cognitive engagement in school and classroom; RAPS.	Theoretical article.		The study hypothesized links between social context (e.g., teacher involvement, structure, autonomy support) and engagement; also hypothesized links between needs (e.g., competence, relatedness, and autonomy) and engagement.
Connell et al. (1995)	Combined measure of behavioral and emotional engagement; RAPS.	African American students in middle and high school; urban district.	Survey; longitudinal design; path analysis by gender.	Perceived autonomy support, competence, and relatedness were associated with engagement; engagement was associated with lower-risk behaviors; engagement was related to staying in school for males.

Connell, Spencer, & Aber (1994)	Combined measure of emotional engagement (e.g., being bored, being happy) and behavioral engagement (e.g., paying attention, doing schoolwork, expending effort); RAPS.	Three independent studies of African American early adolescents: two samples in at-risk communities.	Survey; cross-sectional design; path analysis.	Aspects of self-system (not clearly defined) were related to engagement; engagement was associated with attendance, achievement tests, and grades; engagement was negatively related to at-risk classification.
Connell & Wellborn (1991)	Three types of engagement: emotional (being bored, interested, happy, angry); cognitive (flexible problem solving, preferring hard work, independent work style); and behavioral (being on-task, participating in class, paying attention, participating in extracurricular activities); RAPS.	3rd-to-5th-grade students; primarily White middle class; suburban and rural.	Survey; cross-sectional design; path analyses; pattern analysis.	Perceived autonomy, competence, and relatedness were related to engagement; the study identified six prototypes of engagement and disengagement; the prototypes were related to competence beliefs (strategies, capacities); engagement was related to achievement scores and grades.
Locke-Davidson (1996)	Academic disengagement; alienation (isolation, estrangement, sense of meaninglessness, powerlessness).	High school students in ethnically diverse urban school.	Ethnographic methods: interviews, participant observations, and school data.	The study found a strong link between conceptualization of identity and school engagement; it found that distant relations with adults, bureaucratic practices, barriers to information, and tracking led to alienation.

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APPENDIX *(continued)*

Study	Definition/measure	Sample	Method	Key findings
Finn (1989)	Behavioral engagement (participation in school and class); emotional engagement (identification with school, sense of belonging and value).	Theoretical article; participation–identification model of engagement.		The study used a developmental model; it found that participation in school led to school success, which led to identification with school, which influenced further participation.
Finn (1993)	Behavioral engagement (attendance, preparation, misbehavior, attention, participation in school); emotional engagement (sense of belonging and valuing of school-related outcomes).	Nationally representative random sample of 8th-grade students in United States (NELS).	Survey; cross-sectional design; analysis of variance.	A strong association was found between academic achievement and behavioral engagement in the classroom and school; at-risk students had lower behavioral engagement in class and school; no difference was found between at-risk and successful students in school belonging.
Finn, Pannozzo, & Voelkl (1995)	Behavioral engagement; student participation measure (teacher report of student initiative, disruptive behavior, inattentive behavior).	4th-grade students; random sample of urban, rural, and suburban schools in Tennessee.	Survey; cross-sectional design; students classified as compliant, disruptive, or inattentive on basis of scores on participation measures.	Students who were rated as disruptive or inattentive had lower scores on achievement tests than compliant classmates; students who were rated as inattentive had the lowest achievement scores.

Finn & Rock (1997)	Behavioral engagement in school and classroom; teacher scales (works hard, is absent, engages); student scale in classroom (attends, prepares, causes trouble), student scale in school (does homework, participates in sports, participates in extracurricular activities).	Nationally representative random sample of 8th-, 10th-, and 12th-grade students in United States (NELS).	Survey; cross-sectional design; students classified as resilient, nonresilient completers, and dropouts; analysis of variance.	A significant difference was found between resilient and nonresilient students on engagement behaviors (e.g., coming to class, effort, completing assignments); extracurricular participation was not related to resilience.
Finn & Voelkl (1993)	School engagement; behavioral engagement in school and classroom (attendance, preparation, misbehavior), and emotional engagement (belonging, student–teacher relations).	Nationally representative random sample of 8th-grade students in United States (NELS).	Survey; cross-sectional design; hierarchical linear modeling.	Students in smaller schools had higher behavioral and emotional engagement; no relation was found between engagement and disciplinary structure of school.
Fredricks, Blumenfeld, Friedel, & Paris (2002)	Behavioral, emotional, and cognitive engagement.	3rd-to-5th-grade students in two Hispanic, African American low-income communities.	Multi-method: survey and interviews; longitudinal design; regression analyses; thematic analyses.	Teacher support was associated with emotional and cognitive engagement; peer support, work norms, and task challenge were correlated with three types of engagement.

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APPENDIX *(continued)*

Study	Definition/measure	Sample	Method	Key findings
Furrer & Skinner (2003)	Behavioral engagement (e.g., effort, attention, and persistence) and emotional engagement; RAPS.	3rd-to-6th-grade students; primarily White and middle class; suburban and rural.	Survey; longitudinal (fall and spring) design; regression analyses; person-centered analyses.	Students' relatedness to parents, peers, and teachers uniquely predicted changes in behavioral and emotional engagement from fall to spring; relatedness to teachers was a stronger predictor of engagement for boys than for girls.
Guthrie & Wigfield (2000)	Engagement in reading: cognitive (knowledge of strategies), social (participation in community), and motivational (goals, intentions).	Theoretical article.		Engagement in reading was influenced by teacher involvement, evaluation, learning goals, real-world interactions, autonomy support, interesting texts, strategy instruction, collaboration, praise, and rewards and evaluation.
Helme & Clarke (2001)	Cognitive engagement: "deliberate task-specific thinking while participating in classroom activity"; twelve behavioral indicators (e.g., self-monitoring, gestures, concentration, questioning, giving information, making evaluative comments).	24 middle school students in seven mathematics classrooms; private coeducational school in Australia.	Multi-method: student interviews prompted by video record of classroom events, observations, teacher interviews; discourse analysis.	The study documented more instances of cognitive engagement in student–student interactions than in teacher–student interactions; task characteristics (novelty, connection to personal experience) influenced cognitive engagement.

Kindermann (1993)	Behavioral engagement in classroom (e.g., effort, on-task behavior); RAPS.	4th- and 5th-grade students; primarily White and middle class; suburban and rural.	Survey; longitudinal (fall to spring) design; social composite mapping.	Children tended to affiliate with peers who had a similar level of behavioral engagement; children who were affiliated with high-engagement peer groups increased their level of behavioral engagement over the school year.
Kindermann, McCollam, & Gibson (1996)	Behavioral engagement in classroom (e.g., effort, on-task behavior); RAPS.	9th-to-12th-grade students; urban school district; ethnically diverse.	Survey; longitudinal (fall to spring) design; social composite mapping.	Adolescents tended to affiliate with peers who had similar levels of behavioral engagement.
Lee & Anderson (1993)	Cognitive engagement (students initiate activities to achieve understanding, use learning strategies); behavioral engagement (students on-task and involved in class activities).	Twelve 6th-grade students in two science classrooms; urban, ethnically diverse school district.	Multi-method case study: classroom observations, semi-structured interviews before and after unit, surveys of attitudes and interest.	The study identified four patterns of task engagement: intrinsically motivated to learn, motivated to learn science, task avoidance, and active task resistance.
Lee & Smith (1993)	Academic engagement; behavioral engagement (preparation, homework) and emotional engagement (boredom); at-risk behaviors in school and classroom (misbehavior, tardiness, missing class).	Nationally representative random sample of 8th-grade students in United States (NELS).	Survey; cross-sectional design; hierarchical linear modeling.	Students in schools that were engaged in restructuring toward a communal model had higher academic engagement and higher at-risk behaviors.

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APPENDIX *(continued)*

Study	Definition/measure	Sample	Method	Key findings
Lee & Smith (1995)	Academic engagement; student report of effort and feeling challenged.	Nationally representative random sample of 8th- and 10th-grade students in United States (NELS).	Survey; longitudinal design; hierarchical linear modeling.	Gains in engagement were higher in schools that were restructuring toward a communal model and lower in schools without reforms; students in small schools had higher academic engagement.
Marks (2000)	Combined measure of behavior (e.g., effort, attention, completing assignments) and emotional engagement (e.g., boredom) in classroom.	5th-, 8th-, and 10th-grade students in math and social studies classes; schools undergoing substantial restructuring.	Survey; cross-sectional design; hierarchical linear modeling.	Prior school success was related to engagement; authentic instruction was a predictor of engagement at all three grades; social supports for learning (school support, classroom support, parent involvement) were predictors of engagement at all three grades.
Meece, Blumenfeld, & Hoyle (1988)	Cognitive engagement; active engagement (use of cognitive and metacognitive strategies); superficial engagement (use of strategies to complete work with minimum effort).	5th- and 6th-grade students in science classrooms; middle-class schools.	Survey; cross-sectional design; structural equation modeling.	Task goal orientation was associated with more active cognitive engagement in learning activities.

Miller et al. (1996)	Academic engagement (self-regulation, deep and shallow strategy use, persistence, and effort).	10th-to-12th-grade students in math classes; middle-class suburban high school.	Survey; cross-sectional design; regression analyses.	Goals (learning, pleasing the teacher, obtaining future consequences) and perceived ability were associated with task engagement.
Natriello (1984)	Indicators of behavioral disengagement (absence from school, low effort, nonparticipation) and emotional disengagement (negative attitudes).	High school students; primarily White middle class.	Interviews with students at various levels of engagement.	Students who reported incompatibilities in the evaluation system also reported disengagement.
Newmann (1981)	Alienation (fragmentation, estrangement, separation), opposite of student involvement, engagement, and integration in school.	Theoretical article.		Alienation was reduced in schools with voluntary choice, clear and consistent goals, small size, opportunities for participation, extended and cooperative roles, and integrated work.
Newmann (1992)	Student engagement (e.g., effort, concentration, attention); challenge.	16 high schools, demographically diverse.	Multi-method: classroom observations, survey, student interviews; cross-sectional design; correlational analysis.	Student reports of engagement were correlated with observer's ratings of the level of higher-order thinking in the classroom.
Newmann, Wehlage, & Lamborn (1992)	Engagement in academic work: "psychological investment in and effort directed towards, learning, understanding, or mastering knowledge, skills or crafts."	Theoretical article.		Engagement was a function of authentic work (rewards, ownership, fun) and school membership (clear purpose, fairness, personal support, success, caring).

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APPENDIX *(continued)*

Study	Definition/measure	Sample	Method	Key findings
Nystrand & Gamoran (1991)	Procedural engagement (involvement in procedures of school that lasts only as long as task); substantive engagement (sustained commitment to content of schooling).	8th-grade students in English classes; 16 schools in variety of communities.	Multi-method: classroom observations, instructional discourse; student tests; regression analyses.	Classrooms had a high degree of procedural engagement and low substantive engagement; disengagement was negatively correlated with achievement; substantive engagement was positively related to achievement.
Ogbu (2003)	Academic disengagement, characterized by low effort, inability to focus on tasks, poor study habits, and low academic performance.	Elementary, middle, and high school students; affluent African American suburb in Midwestern United States.	Ethnography: classroom observations, 28 student interviews; participant observation.	The study found peer pressure against "acting White"; for most students, peer pressure had a negative impact on academic engagement; perception of an unequal opportunity structure was related to academic disengagement for some students but motivated other students to work hard.
Patrick, Skinner, & Connell (1993)	Separate measures of behavioral engagement (e.g., effort, persistence, attention, and participation) and emotional engagement (e.g., being bored, worried, sad, bad, angry) in the classroom; RAPS.	3rd-to-5th-grade students; primarily White and middle class; suburban and rural.	Survey; cross-sectional design; regression analyses; pattern analyses.	Competence and autonomy were uniquely related to behavioral and emotional engagement; competence and autonomy predicted patterns of behavior and emotional engagement.

Ryan & Patrick (2001)	Student engagement; self-regulated learning (e.g., planning, monitoring, and regulating cognition); disruptive behavior (e.g., negative conduct).	7th- and 8th-grade students in two ethnically diverse middle schools.	Survey; longitudinal design; regression analyses.	Perceptions of teacher support were associated with less disruptive behavior over time; perceptions of teacher support and encouragement of mutual respect were associated with higher self-regulated learning.
Ryan, Stiller, & Lynch (1994)	Combined student measure of emotional and behavioral engagement; RAPS.	7th- and 8th-grade students in suburban middle school.	Survey; cross-sectional design; regression analyses.	Perceived emotional security with teacher was associated with engagement.
Skinner & Belmont (1993)	Separate teacher and student measures of behavioral engagement (e.g., effort, attention, persistence) and emotional engagement (e.g., interest, happiness, anxiety, anger) in the classroom.	3rd-to-5th-grade students; primarily White and middle class; suburban and rural.	Survey; longitudinal (fall to spring) design; regression analyses.	Teacher involvement was correlated with emotional engagement; classroom structure was linked to behavioral engagement; autonomy support was not related to engagement; reciprocal relations were found between engagement and context (teacher involvement, autonomy support, classroom structure).
Skinner, Wellborn, & Connell (1990)	Combined measure of behavioral engagement (e.g., participation, effort, staying on-task) and emotional engagement (e.g., being happy, bored) in the classroom; RAPS.	3rd-to-5th-grade students; primarily White and middle class; suburban and rural.	Survey; cross-sectional design; path analysis.	Competence beliefs (capacity and strategy) were related to engagement; engagement was positively associated with achievement.

(*continued*)

APPENDIX *(continued)*

Study	Definition/measure	Sample	Method	Key findings
Skinner, Zimmer-Gembeck, & Connell (1998)	Combined teacher reports of behavioral engagement (persistence, effort, and attention) and emotional engagement (interest or boredom, happiness or sadness, anxiety, anger) in the classroom; RAPS.	3rd-to-7th-grade students; primarily White and middle class; suburban and rural.	Survey; longitudinal design; regression analyses; hierarchical linear analysis.	Engagement was predicted by various aspects of perceived control; children's engagement remained stable from 3rd to 6th grade, declined at the beginning of middle school; development of engagement over a 5-year period was predicted by individual differences in the development of control.
Steinberg, Brown, & Dornbush (1996)	Emotional engagement; work orientation (persistence, pride); orientation toward school (effort, value); emotion in classroom (concentration, attention).	National study of high school students.	Survey.	Values of peer group influenced engagement and achievement; in general, peer group demeaned school success.
Stipek (2002)	Student engagement; combined observational rating of behavior and affect; teacher ratings of behavioral engagement (seeking challenge, working independently, accepting responsibility), student ratings of affect (feelings about school and teacher).	2nd-to-3rd-grade students; low-income, ethnically diverse sample.	Multi-method: classroom observations, teachers' ratings, survey; cross-sectional design; correlational analysis.	Quality of instruction and academic focus predicted engagement; engagement was associated with achievement measures.

Valeski & Stipek (2001)	Academic engagement; teacher ratings of behavioral engagement (self-directed learning, seeking challenge, cooperative participation).	Kindergarten-to-1st-grade students; low-income, ethnically diverse sample; rural and urban.	Multi-method: child and teacher survey; classroom observations; cross-sectional design; correlational analyses.	Children's ratings of competence were linked to teachers' ratings of engagement; attitudes and feelings about the teacher were not related to engagement.
Voelkl (1997)	Participation (effort, initiative, disruptive behavior, nonparticipatory behavior); identification with school (sense of school belonging and utility value).	8th-grade students; White and African American; suburban and rural schools across the state of Tennessee; part of larger longitudinal study of students followed since 4th grade.	Survey; cross-sectional design; regression analyses.	Student participation and academic achievement were significant predictors of feelings of identification. No differences were found in antecedents for White and African American students.
Wehlage et al. (1989)	Educational engagement: "psychological investment required to comprehend and master skills and knowledge."	Schools that serve students at risk for dropping out.	Ethnographic study: observations and interviews.	The study identified examples of curriculum and instruction that increased engagement (meaningful tasks with real-world implications, shared knowledge, contact between adults and students); developed a theory of engagement and dropping out; found that educational engagement and school membership both were necessary for reducing the likelihood of dropping out.

Note. RAPS = Rochester Assessment Package for Schools, NELS = National Educational Longitudinal Study.