

Engagement and Disaffection in the Classroom: Part of a Larger Motivational Dynamic?

Ellen Skinner
Portland State University

Carrie Furrer
NPC Research

Gwen Marchand
University of Nevada, Las Vegas

Thomas Kindermann
Portland State University

A study of 805 4th through 7th graders used a model of motivational development to guide the investigation of the internal dynamics of 4 indicators of behavioral and emotional engagement and disaffection and the facilitative effects of teacher support and 3 student self-perceptions (competence, autonomy, and relatedness) on changes in these indicators over the school year. In terms of internal dynamics, emotional components of engagement contributed significantly to changes in their behavioral counterparts; feedback from behavior to changes in emotion were not as consistent. Teacher support and students' self-perceptions (especially autonomy) contributed to changes in behavioral components: Each predicted increases in engagement and decreases in disaffection. Tests of process models revealed that the effects of teacher context were mediated by children's self-perceptions. Taken together, these findings suggest a clear distinction between indicators and facilitators of engagement and begin to articulate the dynamics between emotion and behavior that take place *inside* engagement and the motivational dynamics that take place *outside* of engagement, involving the social context, self-systems, and engagement itself.

Keywords: academic engagement, disaffection, achievement motivation, classroom participation, emotional engagement

Over the past 10 years, research has converged on the construct of academic engagement as a key contributor to children's school success (Fredricks, Blumenfeld, & Parks, 2004). In the short term, engagement predicts students' learning, grades, and achievement test scores; over the long term, it predicts patterns of attendance, retention, graduation, and academic resilience (Connell, Spencer, & Aber, 1994; Finn & Rock, 1997; Jimerson, Campos, & Greif, 2003; Sinclair, Christenson, Lehr, & Anderson, 2003; Skinner, Zimmer-Gembeck, & Connell, 1998). Studies have also suggested that academic engage-

ment serves as a protective factor against risky activities (O'Farrell & Morrison, 2003) such as substance abuse, risky sexual behavior, and delinquency.

Thus, students who are engaged in school are both more successful academically and more likely to avoid the pitfalls of adolescence. Unfortunately, however, research has also documented a steady decline in students' engagement with schooling, including their interest, enthusiasm, and intrinsic motivation for learning in school, beginning in kindergarten and continuing until they complete high school (or drop out), with notable losses during the transitions to middle school and high school; the erosion of engagement is especially severe for boys and for children from ethnic and racial minority and low socioeconomic status groups (for a review, see Wigfield, Eccles, Schiefele, Roeser, & Davis-Kean, 2006).

Ellen Skinner and Thomas Kindermann, Department of Psychology, Portland State University; Carrie Furrer, NPC Research, Portland, OR; Gwen Marchand, Department of Educational Psychology, University of Nevada, Las Vegas.

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Correspondence concerning this article should be addressed to Ellen A. Skinner, Psychology Department, P.O. Box 751, Portland State University, Portland, OR 97221. E-mail: skinnere@pdx.edu

Motivational Dynamics of Classroom Engagement and Disaffection

Of great interest to researchers and practitioners are the dynamics underlying these declines. *Dynamics* refers to the internal and external causal feedback loops that serve to promote or undermine the quality of children's engagement in school over time. In general, these dynamics seem to be amplifying, in that children who start out motivationally rich maintain their engagement as the year(s) progress, whereas children who start out motivationally poor tend to become even more disengaged over time (Skinner, Kindermann, Connell, & Wellborn, in press).

Some of these dynamics involve personal motivational resources, such as perceived control: For example, children who start

off confident in their capacities engage with learning tasks in ways that lead to more success, thus reinforcing their initial optimism, whereas children low in efficacy tend to avoid challenges or engage in tasks so half-heartedly that they do not succeed, thereby cementing their initial self-doubts (e.g., Schmitz & Skinner, 1993). Other dynamics involve the teacher: Children who are more engaged receive subsequently more teacher involvement, whereas disaffected children are more likely to find that teachers increasingly withdraw their support or become more controlling over time (e.g., Skinner & Belmont, 1993). It is also possible that some of these dynamics are internal to engagement itself. If multiple components of engagement can be distinguished, they may form their own feedback loops. For example, children who are bored may exert less effort and stop paying attention to the teacher, thus becoming even more bored over time.

Purposes of the Current Study

The current study makes two key contributions to emerging work on motivational dynamics. First, we explore the internal dynamics of engagement by examining how different components of engagement shape each other over time. Second, we explore the larger motivational dynamics of which engagement is a part by examining how contextual and personal factors contribute to changes in engagement itself. Both the components of classroom engagement and the set of facilitators hypothesized to promote them are derived from a larger motivational model, the self-system model of motivational development (SSMMD), which can be used to explain the interpersonal and psychological processes by which engagement is promoted or undermined in the classroom (Connell & Wellborn, 1991; Deci & Ryan, 1985; Skinner & Wellborn, 1997).

Conceptualization of Engagement

Operationalizations of engagement have been offered from a variety of theoretical and practice approaches, leading reviewers to conclude that it is a metaconstruct encompassing multiple dimensions of attraction to or involvement in school (Fredricks et al., 2004). However, two important areas of confusion remain. The first focuses on the distinction between indicators versus facilitators of engagement (Sinclair et al., 2003). *Indicators* refer to the features that belong inside the construct of engagement proper, whereas *facilitators* are the causal factors (outside of the construct) that are hypothesized to influence engagement. Explanatory research and intervention efforts require a clear demarcation between these two. If, for example, conceptualizations posit that support provided by teachers is part of engagement itself (i.e., an indicator) as opposed to a contextual factor that contributes to engagement (i.e., a facilitator), studies that aggregate these features into a metaconstruct can never explore how teacher context shapes children’s engagement. To empirically examine how potential antecedents influence engagement, it is necessary to conceptually unpack indicators from facilitators.

The second issue requiring clarification centers on the number and nature of dimensions within engagement itself: how many should be distinguished and whether they have their own internal dynamics. Some reviewers have suggested that it is useful to distinguish affective, behavioral, and cognitive forms (e.g.,

Fredricks et al., 2004), but little agreement exists as to what these components entail. Others suggest that “good news” should be differentiated from “bad news” features, based on the argument that alienation and disaffection likely reflect more than a lack of engagement (Jimerson et al., 2003). Clear definitions, sound assessments, and evidence of multiple dimensions are required to answer questions about the components of engagement.

Indicators of Classroom Engagement

In this study, we used a motivational conceptualization of engagement versus disaffection, which focuses on students’ active participation in academic activities in the classroom (Pierson & Connell, 1992; Ryan, 2000; Skinner et al., 1998; Wentzel, 1993). The underlying assumption is that high-quality learning is the result of behaviors and emotions, such as exertion, persistence, interest, and enjoyment, that reflect a motivation to master the academic material. As depicted in Figure 1, this conceptualization incorporates behavioral and emotional dimensions, as well as a specific treatment of negative engagement referred to as *disaffection* (Connell & Wellborn, 1991; Skinner, Kindermann, & Furrer, in press; Wellborn, 1991).

The behavioral dimension of engagement includes students’ effort, attention, and persistence during the initiation and execution of learning activities. The emotional dimension of engagement focuses on states that are germane to students’ emotional involvement during learning activities such as enthusiasm, interest, and enjoyment (Meyer & Turner, 2002). Engagement itself combines behavioral and emotional dimensions and refers to active, goal-directed, flexible, constructive, persistent, focused, emotionally positive interactions with the social and physical environments (in this case, academic activities). Consistent with the SSMMD, this kind of engagement has been found to be a strong predictor of

| | ENGAGEMENT | DISAFFECTION |
|--|------------------------------|-----------------------------------|
| B E H A V I O R | Behavioral Engagement | Behavioral Disaffection |
| | Action initiation | Passivity |
| | Effort, Exertion | Giving up |
| | Attempts, Persistence | Withdrawal |
| | Intensity | Inattentive |
| | Attention, Concentration | Distracted |
| | Absorption Involvement | Mentally disengaged Unprepared |
| E M O T I O N | Emotional Engagement | Emotional Disaffection |
| | Enthusiasm | Boredom |
| | Interest | Disinterest |
| | Enjoyment | Frustration/anger |
| | Satisfaction | Sadness |
| | Pride | Worry/anxiety |
| | Vitality Zest | Shame Self-blame |

Figure 1. A motivational conceptualization of engagement and disaffection in the classroom.

student learning, grades, achievement, and school retention (e.g., Connell, Halpern-Fisher, Clifford, Crichlow, & Usinger, 1995; Connell et al., 1994; Skinner, Wellborn, & Connell, 1990).

Disaffection, which signifies more than the absence of engagement, refers to the occurrence of behaviors and emotions that reflect maladaptive motivational states. Disaffection has both a behavioral component, including passivity and withdrawal from participation in learning activities, and an emotional component, including boredom, anxiety, and frustration in the classroom. Disaffection has been found to be a strong predictor of poor grades, low achievement test scores, and eventual drop out (e.g., Connell et al., 1994, 1995; Skinner et al., 1990).

Recent psychometric work has suggested that these four markers of classroom engagement, namely, behavioral and emotional engagement and behavioral and emotional disaffection, are structurally distinguishable (Furrer, Skinner, Marchand, & Kindermann, 2006; Skinner, Kindermann, & Furrer, in press). More specifically, item sets tapping each of the four dimensions were used to directly compare structural models with different numbers of dimensions. Although the dimensions were closely related, a four-factor model showed a significantly better fit to both student- and teacher-report data than either one- or two-factor models. This pattern was found for elementary, middle, and high school students. Evidence of additional (hierarchical) multidimensionality was found for emotional disaffection: Item sets tapping boredom, frustration, and anxiety were better represented by three dimensions than by a single dimension.

Internal Dynamics of Engagement and Disaffection

Although researchers have suggested the importance of deconstructing engagement and examining how the parts work together before combining them into an aggregate or metaconstruct (e.g., Fredricks et al., 2004), theories depicting the internal dynamics of engagement, that is, how the components of engagement mutually influence each other over time, have not been fully articulated. The baseline proposition is that there are none: Behavioral and emotional engagement in the classroom are tightly coupled, largely interindividually stable, and shaped in the same ways by outside factors, without influencing each other. However, when internal dynamics are mentioned, it is usually with the idea that emotions fuel behaviors in the classroom. For example, self-determination theory (Deci & Ryan, 1985) and theories of effectance motivation (Harter, 1978) suggest that it is engaged emotions, such as interest and enthusiasm, that fuel engaged behaviors, such as effort and persistence.

Emotions may also play a leading role in the dynamics of how students lose engagement and become disaffected as the school years progress (e.g., Finn, Pannozzo, & Voelkl, 1995; Roeser, Strobel, & Quihuis, 2002). That is, if students become bored, frustrated, or anxious about schoolwork, this likely undermines their behavioral participation in academic activities. Because the disaffected emotions can be differentiated, it is possible that they may have different effects on behavior. For example, boredom, a relatively passive emotion, might result in losses in behavioral engagement, but perhaps not lead to more overt behavioral disaffection. However, an emotion like frustration might be more strongly linked to active behavioral disaffection in the classroom. Hence, on the basis of recent research that distinguishes four

indicators, the first contribution of the present study was to examine how these components work together over time.

Facilitators of Classroom Engagement

The second goal of the current study was to examine the processes through which an engaged dynamic is created and maintained in the classroom. Hypotheses were drawn from the SSMMMD, which focuses on engagement but depicts a larger motivational dynamic (Connell & Wellborn, 1991; Deci & Ryan, 1985). The SSMMMD includes four basic higher order constructs: context, self, action, and outcomes (see Figure 2). The general hypothesis, supported by accumulating empirical evidence, is that a more supportive classroom context promotes positive self-perceptions, which in turn fuel engagement in the classroom; conversely, a less supportive classroom context undermines self-perceptions, which then feed disaffection with learning. Empirical support for each of the links posited by the model is described briefly below, with a special focus on differential predictions for behavioral versus emotional engagement.

Self-System Processes and Classroom Engagement Versus Disaffection

Within the SSMMMD, self-system processes (SSPs) are defined as relatively durable personal resources (or liabilities) that individuals construct over time in response to interactions with the social context; they are organized around people's basic needs for competence, autonomy, and relatedness. SSPs, within this framework, are proximal predictors of engagement and disaffection. Hence, the SSMMMD holds that beliefs about the self can be distinguished from engagement. This distinction is important because in the larger literature on academic engagement, a group of constructs with the common theme of interpersonal relationships (e.g., school attachment, school bonding, and school belonging) has been classified as a dimension of engagement itself (Jimerson et al., 2003). The SSMMMD pulls the interpersonal relationship piece out of the definition of engagement and establishes SSPs as facilitators rather than indicators of engagement. Each of the three SSPs has a long history of study under a variety of labels.

Competence. Competence is perhaps the most frequently studied self-perception in the academic domain (Wigfield et al., 2006). According to the SSMMMD, individuals are born with the need to experience themselves as effective in their interactions with the environment (Elliot & Dweck, 2005; White, 1959), and the extent to which they feel this sense of mastery is related to the quality of their engagement in that domain. Perceptions of self-efficacy, ability, academic competence, and control are robust predictors of children's effort and persistence in school and of their emotional reactions to success and failure (see Bandura, 1997; Dweck, 1999; Elliot & Dweck, 2005; Harter, 1982; Skinner, 1995; Stipek, 2002; Weiner, 2005; Wigfield et al., 2006).

Autonomy. Following self-determination theory (Deci & Ryan, 1985), the model holds that individuals are born with the need to express their genuine preferences and act in congruence with their true selves; the extent to which individuals experience autonomy in a particular domain is related to the quality of their engagement in that domain. Studies have generally shown that students with a greater sense of autonomy in school settings have

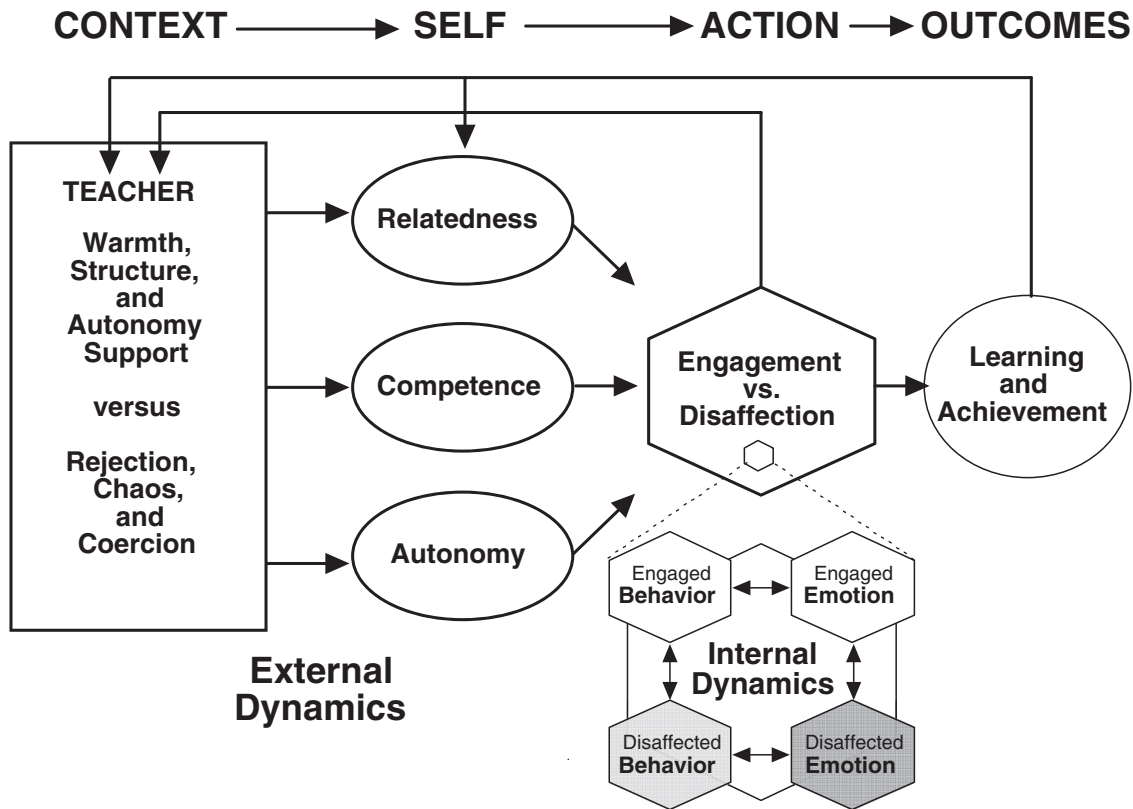


Figure 2. The self-system model of motivational development, including dynamics internal to engagement and external dynamics that incorporate engagement.

better academic outcomes such as classroom engagement, persistence, achievement, and learning (e.g., Grolnick & Ryan, 1987; Hardre & Reeve, 2003; Miserandino, 1996; Patrick, Skinner, & Connell, 1993; Vallerand, Fortier, & Guay, 1997).

Relatedness. Relatedness tends to be overlooked as a self-perception in the academic domain. From a motivational perspective, the basic concept is that individuals are born with an innate desire to connect to others (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969/1973; Baumeister & Leary, 1995) and that the extent to which they feel that they belong in a particular enterprise is associated with the quality of their engagement in the activities of that enterprise. Research has documented a link between a sense of belonging in school and multiple indicators of academic motivation and adjustment, especially emotional engagement (Anderman, 1999; Anderman & Anderman, 1999; Battistich, Solomon, Watson, & Schaps, 1995; Eccles & Midgley, 1989; Furrer & Skinner, 2003; Goodenow, 1993; Kuperminc, Blatt, Shahar, Henrich, & Leadbetter, 2004; Lynch & Cicchetti, 1997; Roeser, Midgley, & Urdan, 1996; Ryan, Stiller, & Lynch, 1994; Wentzel, 1997, 1998, 1999).

Contextual Supports Shape Classroom Engagement Versus Disaffection

The SSMMMD holds that contextual features are critical in promoting motivation in the classroom (Connell & Wellborn, 1991; Deci & Ryan, 1985; Stipek, 2002; Weiner, 1990). Although students' moti-

vation is shaped by multiple social partners (Wentzel, 1998), the current study targets supportive interactions with teachers. Support for motivation includes pedagogical caring (Wentzel, 1997) as well as autonomy-supportive instruction (e.g., relevance and giving students choices; Guthrie & Davis, 2003; Reeve, Bolt, & Cai, 1999; Reeve, Jang, Carrell, Jeon, & Barch, 2004) and optimal structure (e.g., predictability and responsiveness; Skinner et al., 1998). The quality of student-teacher relationships, in the form of caring, supportive alliances, is a key predictor of academic engagement, effort in the classroom, school liking, and achievement expectancies (Birch & Ladd, 1997, 1998; Goodenow, 1993; Murdock, 1999; Murray & Greenberg, 2000; Ryan & Powelson, 1991).

SSPs mediate the relationship between context and classroom engagement. Finally, the SSMMMD also posits a specific mediated pathway in which features of the context influence how individuals feel about themselves (i.e., SSPs), which in turn predicts whether they will be engaged or disaffected in that context. Fredricks et al. (2004), in their review of the construct of engagement, noted that "few scholars include measures of context, needs, and engagement in the same study" (p. 80). One study that did test mediated pathways between context and engagement showed that positive student-teacher relationships were connected to a sense of school belonging, which in turn predicted positive affect in school (Roeser et al., 1996). The current study addresses this empirical gap by testing a mediated pathway from teacher support to self-perceptions to engagement versus disaffection.

Summary of Hypotheses

In sum, on the basis of a clear distinction between indicators and facilitators of engagement, we aimed to examine some of the dynamics underlying the general decline in motivation during late elementary and early middle school. Using information collected from fourth through seventh graders at the beginning and end of the same school year, we first attempted to replicate the pattern of between-year differences and within-year decrements in engagement that suggest general motivational losses over the transition to middle school. Second, we examined the dynamics between emotion and behavior that take place inside engagement, testing the hypothesis that not only would behavior predict changes in emotion, but that emotion would be an even stronger predictor of changes in behavior. We further decomposed emotional disaffection into a set of multiple indicators (frustration, boredom, and anxiety) to examine whether they played a differential role in predicting changes in the other facets of engagement.

Third, we examined the motivational dynamics that take place outside of engagement, involving the social context, self-systems, and engagement itself. We predicted that children's SSPs would contribute to changes in their engagement over the school year, with perceived competence being perhaps the biggest predictor of changes in behavior and relatedness and autonomy being stronger predictors of changes in emotion. Moreover, we expected teacher support to predict changes in student engagement and disaffection, with SSPs representing an important pathway through which teachers' support would be connected to engagement. Although we expected mean-level differences in engagement according to gender and grade (favoring girls and younger children), we nevertheless hypothesized that the dynamics of engagement would not differ among these groups. In sum, the present study has the potential to help organize conceptualizations of the complex multidimensional construct of engagement and to contribute to ongoing research that examines the social and personal factors that shape its development over time.

Method

Participants

Data from 805 children (195 fourth graders, 131 fifth graders, 290 sixth graders, and 189 seventh graders approximately equally divided by gender) who had participated in a 4-year longitudinal study on children's motivation in school were used from two measurement points (fall and spring of Year 4). Students and their 53 teachers, drawn from the only public elementary and middle schools in a rural-suburban school district in upstate New York, were predominantly Caucasian, with only about 5% of the students identifying themselves as non-White. Student socioeconomic status, as determined by parents' level of education and occupation, ranged between working to middle class. (See Skinner et al., 1998, for details.) From the 1,242 children who provided any data during Year 4, we selected a subset of 805 children who were missing less than 5% of their data. For this subsample, missing data were imputed with SPSS 11.5 using maximum likelihood estimation with an estimation maximization algorithm.

Procedures

Students completed self-report questionnaires administered by trained interviewers in three 45-min sessions. In their normal class-

rooms, students marked questionnaire items as they were read aloud by one interviewer; a second interviewer monitored understanding and answered questions. Teachers were not present; for the most part, they filled out their questionnaires while students were being tested. Questionnaires were administered in October and again in May.

Measures

Students reported on their engagement versus disaffection in the classroom, their sense of perceived competence and control in the academic domain, autonomy in the classroom, and relatedness to their teacher and their impressions of the support they received from teachers. Teachers reported on the support they provided to each student. If a student had multiple teachers, information was provided from the teacher who indicated that he or she knew the student the best. Each scale was made up of positively and negatively worded items. Composite scores were determined by calculating the average of the positive and negative items, then reverse coding the negative subscale and averaging it with the positive subscale. Resulting scores ranged from 1 to 4, with higher scores indicating more of the respective construct.

Behavioral and emotional engagement and disaffection. Students reported on their own engagement versus disaffection in the classroom using a measure developed to tap their behavioral and emotional participation in (or withdrawal from) learning activities in the classroom (Skinner et al., 1990, 1998; Wellborn, 1991). Behavioral engagement was assessed using 5 items that tapped students' effort, attention, and persistence while initiating and participating in learning activities ($\alpha = .71$ in fall; $\alpha = .72$ in spring). Behavioral disaffection was assessed using 5 items that tapped students' lack of effort and withdrawal from learning activities ($\alpha = .65$ in fall; $\alpha = .70$ in spring). Emotional engagement was measured using 6 items that tapped emotions indicating students' motivated participation during learning activities ($\alpha = .83$ in fall; $\alpha = .84$ in spring). Emotional disaffection was measured using 10 items that tapped emotions indicating students' motivated withdrawal or alienation during learning activities. Items were averaged according to the specific emotions (boredom, anxiety, and frustration) and then combined for a summary score ($\alpha = .84$ in fall; $\alpha = .84$ in spring). Items from the current version of the student-report measure are presented in the Appendix. (See also Skinner, Kindermann, & Furrer, in press.)

Perceived competence and control. The Control Beliefs subscale of the Student Perceptions of Control Questionnaire (Skinner, Chapman, & Baltes, 1983, 1988; Skinner et al., 1990) was used to tap children's perceived competence. The Control Beliefs subscale consists of six items tapping students' generalized expectancies about the extent to which they can achieve success and avoid failure in school. Examples of items are "I can do well in school if I want to" and "I can't get good grades, no matter what I do" (reverse coded; Skinner et al., 1990, 1998). Items were averaged to form a summary score ($\alpha = .74$ in fall; $\alpha = .73$ in spring).

Autonomy orientation. The Autonomy Scale, used to assess academic autonomy (Ryan & Connell, 1989), is composed of 17 items that tap whether children engage in activities because they feel pressured or because they desire understanding and enjoy the task, divided into four subscales: (a) External self-regulation refers to doing work because of rules or fear of punishment ("Why do I do my homework? Because I'll get in trouble if I don't"); (b)

introjected self-regulation refers to doing work because one “should” and to avoid negative emotions (“Because I’ll feel really bad about myself if I don’t do well”); (c) identified self-regulation refers to doing work to understand more (“Because I think classwork is important for my learning”); and (d) intrinsic self-regulation refers to doing work because it is enjoyable (“Because it’s fun”). Subscales for external and introjected self-regulation were reverse coded and then averaged with subscales for identified and intrinsic self-regulation to form a summary score ($\alpha = .81$ in fall; $\alpha = .81$ in spring).

Sense of relatedness. Students completed a four-item self-report scale tapping a sense of belonging or relatedness to their teachers (Furrer & Skinner, 2003). For each item, the stem was “When I’m with my teacher” and the items were “I feel accepted,” “I feel like someone special,” “I feel ignored” (reverse coded), and “I feel unimportant” (reverse coded). The items were averaged to form a summary score ($\alpha = .82$ in fall; $\alpha = .84$ in spring).

Teacher support: Student report. Students reported on the involvement, structure, and autonomy support they experienced from their teachers (Skinner & Belmont, 1993). Nine items tapped involvement versus hostility, including warmth–affection, dedication of resources, knowledge about the student, and dependability versus hostility and neglect (reverse coded). Example items include “My teacher likes me” and “My teacher doesn’t seem to enjoy having me in her class” (reverse coded). Twenty-one items measured provision of structure, including clarity of expectations and contingency, versus chaos (reverse coded). Example items are “My teacher shows me how to solve problems for myself” and “My teacher doesn’t make clear what she expects of me in class” (reverse coded). Eighteen items tapped autonomy support versus coercion, including teacher provision of choice, relevance, and respect versus controlling behavior (reverse coded). Example items are “My teacher gives me a lot of choices about how I do my schoolwork” and “It seems like my teacher is always telling me what to do” (reverse coded). Scales were averaged to form a Teacher Support scale ($\alpha = .96$ in fall; $\alpha = .96$ in spring).

Teacher support: Teacher report. Teachers reported on the level of involvement, structure, and autonomy support they pro-

vided to each child (Skinner & Belmont, 1993). Fourteen items tapped involvement versus hostility, including warmth–affection, dedication of resources, knowledge about the student, and dependability versus hostility and neglect (reverse coded). Example items include “This student is easy to like” and “Teaching this student is not very enjoyable” (reverse coded). Five items measured provision of structure, including clarity of expectations and contingency, versus chaos (reverse coded). Example items are “I try to be clear with this student about what I expect of him/her in class” and “I find it hard to be consistent with this student” (reverse coded). Twelve items tapped autonomy support versus coercion, including teacher provision of choice, relevance, and respect versus controlling behavior (reverse coded). Example items are “I let this student make a lot of his/her own decisions regarding schoolwork” and “When it comes to assignments, I’m always having to tell this student what to do” (reverse coded). Scales were averaged to form a Teacher Support scale ($\alpha = .95$ in fall; $\alpha = .95$ in spring).

Results

Initial analyses examined descriptive information. As can be seen in Table 1, indicators of engagement versus disaffection suggested that averaged over fall and spring, students were moderately engaged ($M = 3.21$, $SD = 0.50$, for behavioral and emotional engagement combined) and not particularly disaffected ($M = 2.07$, $SD = 0.57$, for behavioral and emotional disaffection combined). In terms of facilitators, children reported relatively high levels of all three self-systems averaged over fall and spring, although they reported higher competence ($M = 3.44$, $SD = 0.49$) than relatedness ($M = 3.03$, $SD = 0.69$) and higher relatedness than autonomy ($M = 2.58$, $SD = 0.45$). In addition, teachers were perceived as supportive ($M = 2.95$, $SD = 0.52$) and themselves reported providing relatively high support ($M = 3.15$, $SD = 0.38$).

Grade Differences and Changes in Engagement and Disaffection

To determine whether we could replicate the pattern of between-grade differences and within-grade declines indicating losses in

Table 1
Descriptive Statistics for Indicators and Facilitators of Engagement

| Construct | Fall | <i>M</i> (<i>SD</i>) | Spring | <i>M</i> (<i>SD</i>) | <i>t</i> | Fall to spring <i>r</i> |
|-----------------------------------|------|------------------------|--------|------------------------|----------|-------------------------|
| Indicators of engagement | | | | | | |
| Behavioral engagement | 3.45 | (0.47) | 3.33 | (0.50) | −7.29*** | .57*** |
| Behavioral disaffection | 1.94 | (0.61) | 1.99 | (0.61) | −2.44* | .67*** |
| Emotional engagement | 3.07 | (0.62) | 2.99 | (0.65) | 4.08*** | .63*** |
| Emotional disaffection | 2.14 | (0.62) | 2.22 | (0.63) | −4.47*** | .65*** |
| Bored | 2.28 | (0.91) | 2.42 | (0.91) | −4.92*** | .59*** |
| Anxious | 2.00 | (0.70) | 2.06 | (0.72) | −2.82** | .62*** |
| Frustrated | 2.26 | (0.68) | 2.32 | (0.69) | −2.47* | .53*** |
| Facilitators of engagement | | | | | | |
| Perceived control | 3.48 | (0.53) | 3.40 | (0.55) | 4.58*** | .61*** |
| Autonomy orientation | 2.61 | (0.49) | 2.54 | (0.49) | 5.11*** | .69*** |
| Sense of relatedness | 3.08 | (0.77) | 2.97 | (0.80) | 4.00*** | .55*** |
| Teacher support | | | | | | |
| Student report | 2.99 | (0.56) | 2.91 | (0.55) | 6.67*** | .76*** |
| Teacher report | 3.19 | (0.42) | 3.12 | (0.37) | 8.77*** | .82*** |

Note. $N = 805$. All scales ranged from 1 (not at all true for me/this student) to 4 (very true for me/this student). * $p < .05$. ** $p < .01$. *** $p < .001$.

motivation over the transition to middle school, we first examined each indicator and facilitator as a function of grade; see Table 2 for means and standard deviations (averaged across the two time points). As is typical (Fredricks et al., 2004; Wigfield et al., 2006), starting in sixth grade (during the transition to middle school), older children showed lower levels of engagement and higher levels of disaffection. Profile analyses, in which the four indicators of engagement were used as within-subject dependent variables, indicated that the profiles of engagement differed by grade, $F(12, 2111) = 8.64, p < .001$. As depicted in Figure 3, children in fourth and fifth grades showed a profile in which engagement was high and disaffection was low. However, after the transition to middle school, students showed lower levels of engagement, especially emotional engagement, and higher levels of disaffection, especially emotional disaffection, and this trend continued to worsen in seventh grade. In addition, older children showed lower levels of self-systems and (both teacher- and student-reported) teacher support, with the most noticeable differences starting in middle school between fifth and sixth and between sixth and seventh grades.

Consistent with these differences between grades, there was also a slight worsening in both indicators and facilitators of engagement within grades, in that engagement decreased and disaffection increased from fall to spring, and self-systems and teacher support declined (see Table 1). At the same time, interindividual stability was high: Cross-year correlations for student-report variables averaged .68 (all $ps < .001$). This pattern of findings, namely high interindividual stability combined with motivational declines that are experienced differentially depending on initial levels of engagement, are consistent with the typical amplifying pattern of loss whose underlying dynamics this study was designed to illuminate.

Gender differences. Table 2 also presents the means and standard deviations for each indicator and facilitator (averaged across the two time points) broken down by gender. As is typical (Fredricks et al., 2004; Wigfield et al., 2006), mean-level differ-

ences favored girls, although there were no differences in emotional disaffection or any of the differentiated disaffected emotions. In each of the following analyses, we also examined interactions with grade and gender. In no case were they significant, suggesting that despite mean-level differences favoring younger children and girls, the dynamics of engagement played out in a similar manner across fourth through seventh grades and for the boys and girls in this sample.

Internal Dynamics Among Indicators of Engagement Versus Disaffection

The second set of analyses examined the internal dynamics of engagement and disaffection. As can be seen in Table 3, the four indicators showed the expected concurrent interrelations. (See Skinner, Kindermann, & Furrer, in press, for supporting evidence from confirmatory structural analyses.) To test hypotheses about predictors of change over the school year, we calculated multiple regressions in which we controlled for the dependent variable in the fall before examining whether the independent variable in fall was a significant predictor of the dependent variable in spring.

Emotions as predictors of changes in behavioral engagement. Figure 4 depicts the regressions that examined whether emotional engagement predicted changes in behavioral engagement and behavioral disaffection. As expected, despite the high stabilities of the dependent variables, emotional engagement in the fall significantly predicted improvements in behavioral engagement and declines in behavioral disaffection from fall to spring.

The top panel of Figure 4 also depicts the regressions testing whether emotional disaffection predicted changes in behavioral engagement and disaffection. As can be seen, emotional disaffection in the fall contributed significantly to increases in behavioral disaffection and decreases in behavioral engagement from fall to spring. Regressions examining the differentiated disaffected emo-

Table 2
Descriptive Statistics by Gender and Grade Averaged Across the School Year

| Construct | M (SD) | | Gender <i>t</i> | M (SD) | | | | | Grade <i>F</i> |
|-----------------------------------|---------------------------|----------------------------|-----------------|--------------------------------|------------------------------|--------------------------------|--------------------------------|----------|----------------|
| | Boys (<i>n</i> = 393) | Girls (<i>n</i> = 412) | | Grade 4 (<i>n</i> = 195) | Grade 5 (<i>n</i> = 131) | Grade 6 (<i>n</i> = 290) | Grade 7 (<i>n</i> = 189) | | |
| Indicators of engagement | | | | | | | | | |
| Behavioral engagement | 3.31 (0.52) | 3.47 (0.44) | -5.16*** | 3.57 (0.40) _a | 3.54 (0.43) _a | 3.36 (0.49) | 3.15 (0.48) | 41.19*** | |
| Behavioral disaffection | 2.06 (0.61) | 1.87 (0.06) | 4.88*** | 1.92 (0.56) _{b, c} | 1.79 (0.64) _b | 1.97 (0.61) _c | 2.12 (0.60) | 9.63*** | |
| Emotional engagement | 2.96 (0.66) | 3.09 (0.60) | -3.14** | 3.22 (0.57) _d | 3.17 (0.64) _d | 2.98 (0.63) | 2.81 (0.63) | 20.91*** | |
| Emotional disaffection | 2.19 (0.63) | 2.17 (0.62) | 0.45 | 2.00 (0.61) _e | 2.04 (0.62) _e | 2.28 (0.62) _f | 2.32 (0.59) _f | 16.92*** | |
| Bored | 2.38 (0.90) | 2.31 (0.92) | 1.27 | 2.03 (0.88) _g | 2.10 (0.88) _g | 2.47 (0.89) | 2.67 (0.84) | 28.36*** | |
| Anxious | 2.01 (0.70) | 2.05 (0.72) | -0.86 | 1.98 (0.71) _{h, i, j} | 1.91 (0.70) _{h, k} | 2.10 (0.70) _{i, l} | 2.07 (0.71) _{j, k, l} | 3.70* | |
| Frustrated | 2.32 (0.70) | 2.27 (0.67) | 1.16 | 2.09 (0.67) _m | 2.21 (0.65) _m | 2.38 (0.70) _n | 2.42 (0.66) _n | 13.45*** | |
| Facilitators of engagement | | | | | | | | | |
| Perceived control | 3.37 (0.54) | 3.50 (0.53) | -3.64*** | 3.48 (0.52) _{o, p} | 3.55 (0.48) _{o, q} | 3.44 (0.55) _{p, q, r} | 3.32 (0.57) _r | 6.71*** | |
| Autonomy orientation | 2.52 (0.46) | 2.62 (0.51) | -3.15** | 2.77 (0.49) _s | 2.70 (0.49) _s | 2.53 (0.47) | 2.35 (0.42) | 36.29*** | |
| Sense of relatedness | 2.91 (0.79) | 3.13 (0.76) | -4.50*** | 3.14 (0.78) _t | 3.24 (0.80) _t | 2.96 (0.76) _u | 2.85 (0.75) _u | 11.54*** | |
| Teacher support | | | | | | | | | |
| Student report | 2.88 (0.55) | 3.02 (0.56) | -3.79*** | 3.13 (0.53) _v | 3.14 (0.56) _v | 2.90 (0.52) | 2.72 (0.54) | 29.60*** | |
| Teacher report | 3.10 (0.40) | 3.20 (0.38) | -3.92*** | 3.13 (0.34) _{w, x} | 3.32 (0.42) | 3.11 (0.37) _{w, y} | 3.14 (0.44) _{x, y} | 10.44*** | |

Note. Grade means with the same subscripts did not differ from each other at least at the $p < .05$ level as identified with post hoc tests using the Bonferroni correction.
* $p < .05$. ** $p < .01$. *** $p < .001$.

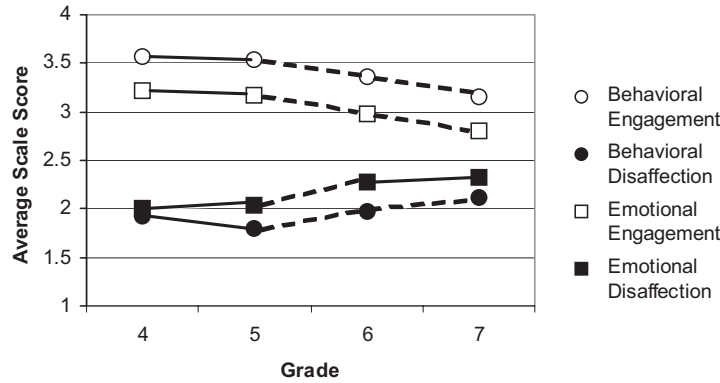


Figure 3. Grade differences in the four components of behavioral and emotional engagement and disaffection. Note. Solid black lines indicate adjacent grade levels that do not differ significantly at least at the $p < .05$ level. Dotted black lines indicate adjacent grade levels that do differ significantly at least at the $p < .05$ level.

tions (bored, anxious, or frustrated) revealed they were significant predictors. Each predicted declines in behavioral engagement (bored, $\beta = -0.23$; anxious, $\beta = -0.10$; and frustrated, $\beta = -0.12$, $ps < .001$) and increases in behavioral disaffection (bored, $\beta = 0.18$; anxious, $\beta = 0.08$; and frustrated, $\beta = 0.09$, $ps < .01$).

Behavior as a predictor of changes in emotional engagement. The bottom panel of Figure 4 presents the results of regressions examining whether behavioral engagement in the classroom predicts changes in emotional engagement and disaffection over the school year. As can be seen, behavioral engagement in the fall was a significant predictor of increases in emotional engagement. However, it was not a significant predictor of declines in emotional disaffection. Regressions examining behavioral engagement as a predictor of changes in the differentiated negative emotions revealed that it was a significant predictor of declines in boredom ($\beta = -0.08$, $p < .01$) but not in anxiety or frustration.

The bottom panel of Figure 4 also presents the results of the regressions examining whether behavioral disaffection in the classroom contributes to changes in emotion. As expected, despite the high stabilities of the dependent variables, behavioral disaffection in the fall significantly predicted declines in emotional engagement and increases in emotional disaffection from fall to spring. Regressions examining behavioral disaffection as a predictor of changes in the differentiated negative emotions revealed that

it was a significant predictor of increases in each (bored, $\beta = 0.12$; anxious, $\beta = 0.14$; and frustrated, $\beta = 0.12$, $ps < .001$).

Feedforward and feedback effects. To determine whether, as predicted, emotion had stronger feedforward effects on behavior compared with the feedback effects of behavior on emotion, analyses directly compared the coefficients for each pair of predictors and outcomes by subtracting the unstandardized regression coefficients and dividing them by the pooled standard error. Only one pair was significantly different: The regression coefficient depicting the feedforward effect of emotional engagement on changes in behavioral engagement (.24) was significantly greater than the coefficient depicting the feedback effect of behavioral engagement on changes in emotional engagement (.10, $t = 2.90$, $p < .01$). Contrary to predictions, however, for disaffection the feedforward effects of emotion on behavior were not stronger than the feedback effects of behavior on emotion.

Potential Facilitators of Engagement: SSPs

The third set of analyses focused on self-perceptions as potential facilitators of engagement. Concurrent correlations among the four indicators of engagement and three SSPs within the two time points appear in Table 4. As can be seen, all were in the predicted direction and significant at $p < .001$. To examine predictors of

Table 3
Correlations Among the Indicators of Engagement

| Construct | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----------------------------|------|------|------|-------|-------|-------|-------|
| 1. Behavioral engagement | — | -.50 | .60 | -.35 | -.43 | -.23 | -.21 |
| 2. Behavioral disaffection | -.44 | — | -.42 | .56 | .52 | .55 | .42 |
| 3. Emotional engagement | .57 | -.40 | — | -.45 | -.50 | -.29 | -.31 |
| 4. Emotional disaffection | -.36 | .55 | -.53 | — | (.72) | (.87) | (.85) |
| 5. Bored | -.44 | .52 | -.54 | (.73) | — | .39 | .46 |
| 6. Anxious | -.25 | .47 | -.36 | (.86) | .40 | — | .68 |
| 7. Frustrated | -.21 | .39 | -.38 | (.84) | .46 | .64 | — |

Note. $N = 805$. Correlations between variables within the Fall time point are below the diagonal. Correlations between variables within the Spring time point are above the diagonal. Correlations in parentheses are between subscale and total scale scores. All correlations are significant at $p < .001$.

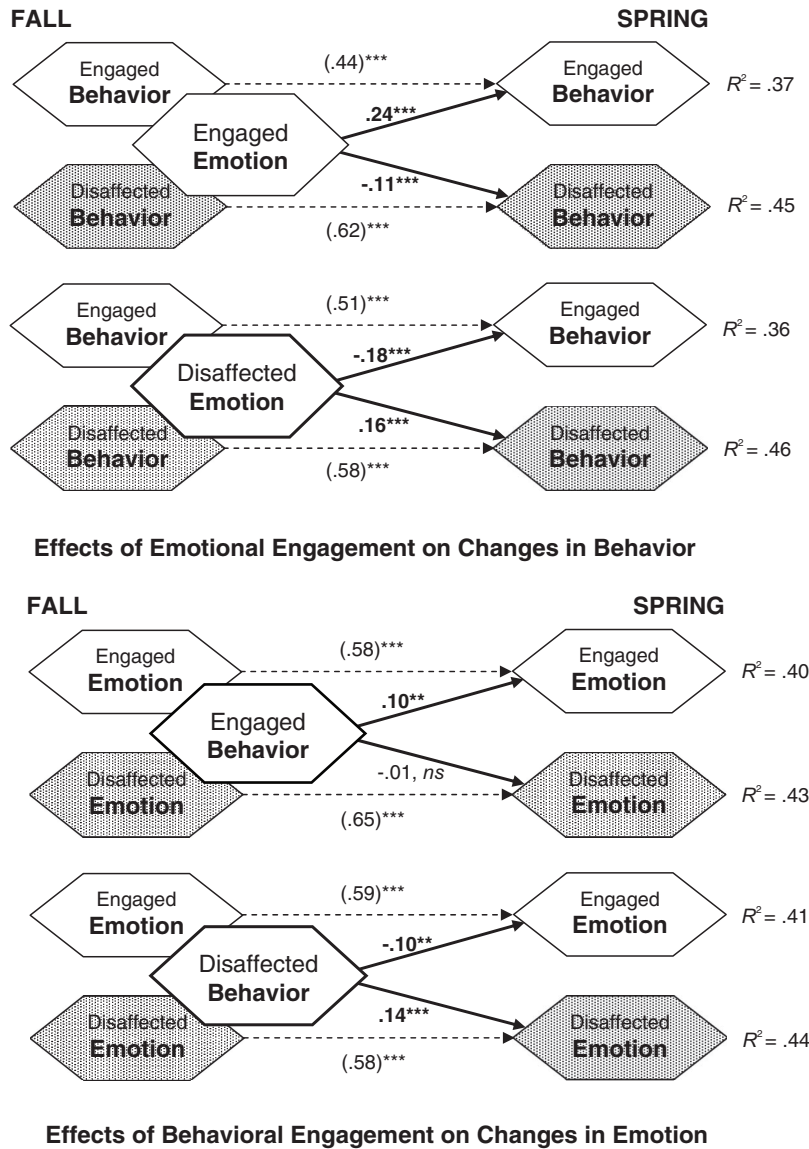


Figure 4. Results of regressions examining the internal dynamics of engagement. Top panel depicts the effects of emotional engagement and disaffection in the fall on changes in behavioral engagement and disaffection from fall to spring. Bottom panel depicts the effects of behavioral engagement and disaffection in the fall on changes in emotional engagement and disaffection from fall to spring. Note. Standardized regression coefficients are on the solid arrows. Stability correlations from fall to spring are in parentheses. ** $p < .01$. *** $p < .001$.

change over the school year, we calculated multiple regressions in which we controlled for the dependent variable in the fall before examining whether the independent variable in fall predicted the dependent variable in spring.

Self-systems as predictors of behavioral engagement and disaffection. Figure 5 depicts the results of regressions examining whether SSPs contribute to changes in engagement and disaffection. As can be seen in the top panel, which presents their effects on the behavioral indicators, despite the high stabilities of the dependent variables, each self-system in the fall was a significant predictor of improvements in behavioral engagement and declines

in behavioral disaffection over the school year. Autonomy appeared to be the strongest predictor of change.

Self-systems as predictors of emotional engagement and disaffection. As shown in the bottom panel of Figure 5, despite the high stabilities of the emotional indicators, each self-system in the fall was a significant predictor of increases in emotional engagement over the year; again, autonomy was the strongest predictor. For emotional disaffection, however, autonomy was the only significant predictor of declines; despite robust concurrent correlations, neither relatedness nor perceived control were significant predictors of decreases in this indicator. Exploratory analyses ex-

Table 4
Correlations Between Indicators of Engagement, Self-System Processes, and Teacher Support

| Construct | Perceived control | | Autonomy | | Relatedness | | Teacher support | | | |
|-------------------------|-------------------|--------|----------|--------|-------------|--------|-----------------|--------|----------------|--------|
| | Fall | Spring | Fall | Spring | Fall | Spring | Student report | | Teacher report | |
| | | | | | | | Fall | Spring | Fall | Spring |
| Behavioral engagement | .46 | .53 | .44 | .42 | .37 | .37 | .48 | .54 | .18 | .21 |
| Behavioral disaffection | -.49 | -.54 | -.47 | -.45 | -.33 | -.36 | -.44 | -.50 | -.24 | -.22 |
| Emotional engagement | .42 | .41 | .55 | .53 | .58 | .51 | .61 | .60 | .14 | .12 |
| Emotional disaffection | -.39 | -.45 | -.56 | -.53 | -.46 | -.40 | -.52 | -.51 | -.15 | -.10 |
| Bored | -.34 | -.32 | -.54 | -.59 | -.45 | -.41 | -.57 | -.55 | -.12 | -.08* |
| Anxious | -.39 | -.42 | -.36 | -.37 | -.33 | -.31 | -.36 | -.36 | -.13 | -.11 |
| Frustrated | -.25 | -.32 | -.38 | -.47 | -.35 | -.37 | -.39 | -.36 | -.15 | -.05 |

Note. $N = 805$. All correlations are significant at $p < .001$, except as indicated.

* $p < .05$.

amined whether certain SSPs were stronger predictors of changes in the different disaffected emotions. We were particularly interested in whether children low in autonomy were at risk for increased boredom, whereas students with low perceived control might grow more anxious as the year progressed. Both relatedness ($\beta = -0.08, p < .05$) and autonomy ($\beta = -0.12, p < .001$) were significant predictors of decreases in boredom. However, perceived control was the only significant predictor of changes in anxiety ($\beta = -0.08, p < .05$), and autonomy was the only significant predictor of changes in frustration ($\beta = -0.15, p < .001$).

Potential Facilitators of Engagement: Teacher Supportive Context

The fourth set of analyses focused on the social facilitators of engagement. Both student reports of their interactions with teachers and teacher reports of their interactions with individual students were used as markers of the support provided by teachers. Correlations between the two markers of teacher support and the four indicators of engagement at two time points appear in Table 4. As can be seen, all were in the predicted direction and were generally significant at $p < .001$. Because engagement was also reported by students, student reports of teacher support were much more highly correlated with all indicators of engagement (average $r = 1.53$) than were teacher reports of teacher support (average $r = 1.17$). It is also possible that student reports reflect the more powerful causal influence because it is likely that students' perceptions of their interactions with teachers are the proximal causes of their motivational reactions. It should be noted that student and teacher reports of teacher support were positively correlated at both time points ($r = .23$ in fall and $r = .22$ in spring), indicating that despite differences in perspective and developmental level, the two reporters' assessments converged somewhat. Although few studies have examined cross-reporter consistency in perceptions of teacher support, the correlations found in the present study are within the typical range (e.g., Skinner & Belmont, 1993).

Teacher support as a predictor of changes in engagement. To examine whether teacher support contributed to changes in student engagement, we calculated two sets of multiple regressions in which either teacher or student reports of teacher support in fall were used to predict each of the indicators of engagement in spring, controlling for

that indicator in fall. Results for student reports of teacher support are depicted in Figure 6: In the top panel are findings for the regressions in which changes in behavioral indicators were the criterion; in the bottom panel are the results for changes in the emotional indicators. As expected, student reports of teacher support predicted improvements in emotional and behavioral engagement and declines in behavioral and emotional disaffection over time. In regressions examining whether teacher support had differential effects on the disaggregated disaffected emotions, we found that student reports of teacher support in fall predicted declines in both boredom ($\beta = -0.14, p < .001$) and frustration ($\beta = -0.09, p < .001$) from fall to spring; it did not predict changes in anxiety.

The findings for teacher reports of teacher support, although contrary to expectations, were not surprising, considering the strong cross-time stabilities of indicators of engagement and the modest concurrent correlations between teacher reports of teacher support and student-reported engagement. Changes in only one indicator of engagement were predicted by teacher reports of teacher support, namely, behavioral engagement ($\beta = 0.07, p < .05$). Consistent with findings for student reports, teacher reports indicated that students who received more teacher support in the beginning of the school year were likely to show improvements in their effort, attention, and persistence in the classroom as the year progressed.

Process Models of Potential Facilitators of Engagement

The final sets of analyses examined process models of the facilitators of engagement, in which actual teacher support (captured by teacher reports of teacher support) predicted changes in engagement by shaping students' perceptions of teacher support (captured by student reports of teacher support), which in turn contributed to children's feelings of competence, autonomy, and relatedness, which were themselves the proximal predictors of engagement. A mediated model posits that there would be no significant direct paths from either marker of teacher support to any indicator of engagement. We examined the two parts of the mediator models separately, using the four-step procedure recommended by Baron and Kenny (1986).

Student experiences of teacher support as mediators of the effects of actual teacher support on changes in engagement.

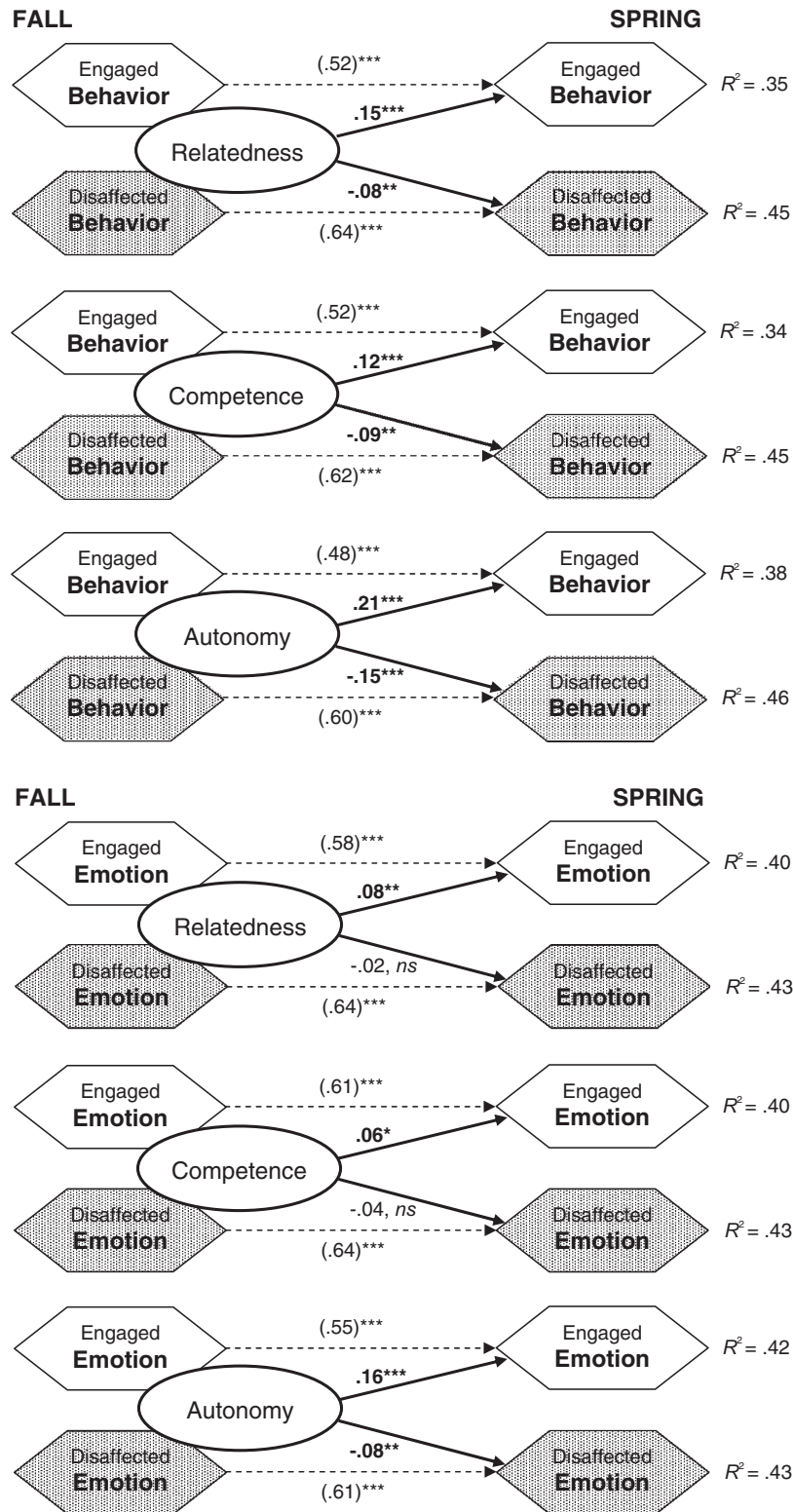


Figure 5. Results of regressions examining the effects of relatedness, competence, and autonomy in the fall on changes in engagement and disaffection from fall to spring. The top panel depicts changes in behavioral engagement and disaffection. The bottom panel depicts changes in emotional engagement and disaffection. Note. Standardized regression coefficients are on the solid arrows. Stability correlations from fall to spring are in parentheses. * $p < .05$. ** $p < .01$. *** $p < .001$.

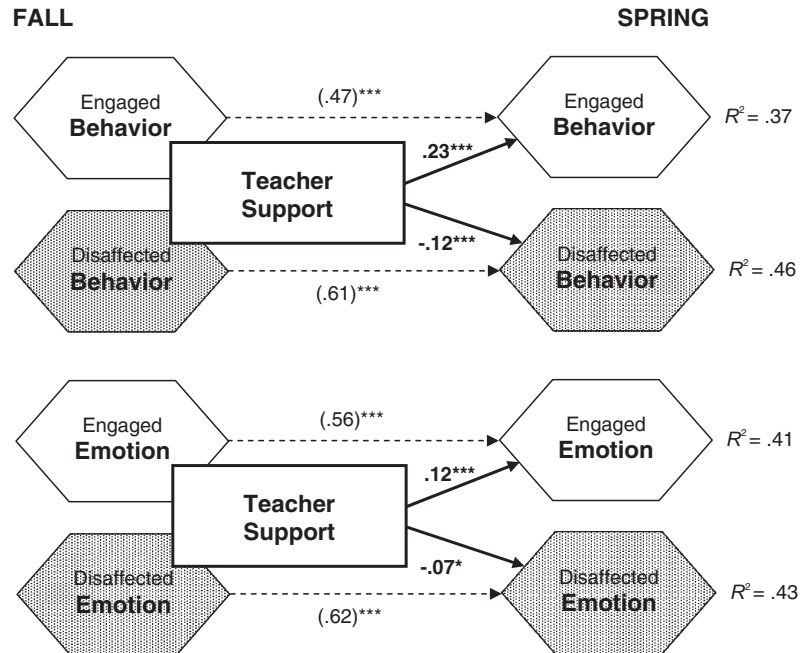


Figure 6. Results of regressions examining the effects of teacher support (student report) in the fall on changes in engagement and disaffection from fall to spring. The top panel depicts changes in behavioral engagement and disaffection. The bottom panel depicts changes in emotional engagement and disaffection. Note. Standardized regression coefficients are on the solid arrows. Stability correlations from fall to spring are in parentheses. * $p < .05$. *** $p < .001$.

First, we explored whether the effects of actual teacher support (marked by teacher reports) on changes in behavioral engagement were mediated by students' perceptions of their interactions with teachers. Preliminary conditions for testing this model were met, namely, that the antecedent (i.e., teacher report of teacher support) was correlated with both (a) the outcome (i.e., changes in behavioral engagement) and (b) the proposed mediator (i.e., student report of teacher support) and that the proposed mediator was correlated with the outcome. The step of most interest was whether, in a regression using both the antecedent and the mediator as independent variables to predict the outcome, the unique effect of the mediator would remain significant, whereas the unique effect of the antecedent would be significantly reduced (indicating partial mediation) or no longer reach significance (indicating full mediation).

The model revealed full mediation. The effects of teacher report of teacher support on changes in behavioral engagement ($\beta = 0.07, p < .05$) dropped substantially when student perceptions of teacher support were added to the equation and were no longer significant ($\beta = 0.04, ns$), whereas student report of teacher support continued to be a significant unique predictor of changes in behavioral engagement ($\beta = 0.22, p < .001$). This pattern of findings is consistent with the idea that teacher support shapes changes in students' behavioral engagement through its effects on children's perceptions of the support teachers provide. Mediation models for the other three indicators of engagement could not be tested because teacher report of teacher support was not a significant predictor of changes in any of them.

Children's SSPs as mediators of the effects of teacher support on changes in engagement. Second, we explored whether the effects of students' perceptions of teacher support on changes in the

four indicators of engagement were themselves mediated by students' SSPs of relatedness, competence, and autonomy. For these analyses, we created an aggregate marker by averaging the three SSPs together and followed the same procedures as in the last set of mediational models. Each model focused on changes in one indicator of engagement. For behavioral engagement, the models revealed partial mediation: The effect of teacher support on changes in behavioral engagement ($\beta = 0.23, p < .001$) dropped substantially when the self-system aggregate was added to the equation, but it still remained significant ($\beta = 0.13, p < .05$). As expected, the combined SSPs continued to be a significant unique predictor of changes in behavioral engagement ($\beta = 0.15, p < .01$).

For emotional engagement, the models revealed full mediation: The effect of teacher support on changes in emotional engagement ($\beta = 0.12, p < .001$) dropped substantially when the self-system aggregate was added to the equation and was no longer significant ($\beta = 0.03, ns$), whereas the combined SSPs continued to be a significant unique predictor of changes in emotional engagement ($\beta = 0.14, p < .001$). Similarly, the models for behavioral disaffection also revealed full mediation: The effect of teacher support on changes in behavioral disaffection ($\beta = -0.12, p < .001$) dropped substantially when the self-system aggregate was added to the equation and was no longer significant ($\beta = -0.04, ns$), whereas the combined SSPs continued to be a significant unique predictor of changes in emotional engagement ($\beta = -0.12, p < .001$).

For emotional disaffection, neither predictor remained significant when the other variable was entered in the model: The effects of teacher support on changes in emotional disaffection ($\beta = -0.07, p < .001$) was no longer significant when the aggregate self-systems were added to the equation ($\beta = -0.06, ns$), but

neither were the effects of the combined SSPs ($\beta = -0.02$, *ns*). Because each variable was a significant predictor of changes in emotional disaffection when considered alone, the lack of significant unique effects can be attributed to multicollinearity. Taken together, these models suggest that teacher support has an effect on student engagement by shaping students' feelings of relatedness, competence, and autonomy. At the same time, teacher support (at least as perceived by students) also shows a direct effect on behavioral engagement, over and above that of the SSPs assessed in this study.

Discussion

Guided by a motivational model, this study organized data on indicators and facilitators of engagement collected at the beginning and end of the school year to begin answering questions about the motivational dynamics of engagement. Consistent with other research on engagement (Fredricks et al., 2004; Wigfield et al., 2006), the developmental pattern found in this study, consisting of cross-year declines and age differences favoring younger children, reveal that although these students were relatively engaged, they nevertheless were experiencing losses in engagement and increases in disaffection over the transition to middle school. At the same time, the high cross-year stabilities indicate that children were losing ground commensurate with their initial levels of motivation. Systematic analyses of change over time suggest that this pattern may be fueled by the internal dynamics of engagement and by the larger motivational dynamics of which engagement, along with self-systems and teacher support, is a part.

Emotional Dynamics of Engagement

Consistent with models of self-determination (Deci & Ryan, 1985), effectance motivation (Harter, 1978), and burgeoning interest in the role of emotions in the classroom (e.g., Pekrun, Goetz, Titz, & Perry, 2002; Schutz & DeCuir, 2002), findings from this study revealed positive emotions as one possible driver of children's effortful involvement in learning activities. At the same time, emotional disaffection, especially boredom, seemed to exert a significant downward pressure on children's effort and persistence and predicted their withdrawal from academic tasks. This pattern of findings underscores the idea that when children find learning activities interesting, fun, and enjoyable, they will pay more attention and try harder. However, the time lag from the beginning to the end of the school year suggests that this is more than a short-term gain. Children who are more emotionally engaged in fall show increasing behavioral engagement and declines in behavioral disaffection over the course of the whole year. By the same token, when children have lost their emotional enjoyment and interest in learning, they are not able to sustain behavioral participation in academic activities over time.

Behavioral Dynamics of Engagement

The role of behavior in reciprocally shaping emotion was not as pronounced. Higher levels of effortful involvement in fall were not strong predictors of increases in emotional engagement, and they were not effective in staving off overall emotional disaffection, although they did predict declines in boredom when considered

separately. Behavioral disaffection, which in this study was marked by avoidance and withdrawal of effort, did seem to undermine the development of positive emotions and feed into increases in boredom, anxiety, and frustration. It makes sense that children with low classroom participation will eventually lose their enjoyment of learning activities and become more bored, anxious, and frustrated as the year progresses, whereas children who try hard and persist in learning activities will tend to find them increasingly more fun and enjoyable. However, it is unfortunate that such sustained involvement does not seem to pay off in reductions in anxiety or frustration over the long haul. This suggests that educators' efforts to increase behavioral engagement in ways that do not engage positive emotions may not have the intended lasting effect on children's high-quality participation in learning activities.

Larger Motivational Dynamics

Engagement itself was also shaped by children's self-systems and by the support provided by their teachers. The clearest contributor to engagement was a sense of autonomy. Autonomy was a particularly strong predictor of changes in emotional engagement and disaffection—especially, as expected, of changes in boredom and frustration. Children who started the school year high in autonomy were likely to show improvements in their effort and enjoyment as the year progressed, whereas children low in autonomy (who felt externally or internally pressured) were likely to show increasing disaffection, both withdrawing their behavioral participation and feeling increasingly more bored and frustrated.

Competence made the strongest contributions to behavioral engagement and disaffection. Although not as strong a contributor to changes in emotional engagement overall, competence did seem to be a primary predictor of anxiety. Children with initially high levels of efficacy were likely to show improvements in their effort and exertion in class and to express moderate increases in their enjoyment and interest in learning activities over the school year. In contrast, children who started the school year doubting their capacities evinced increasing behavioral withdrawal from classwork accompanied by escalations in anxiety. Relatedness played a more central role in both kinds of engagement, but was not as strong a protective factor against disaffection. Children who began the year secure in their relationships with teachers increased in their effort and enjoyment, whereas children with less secure relationships with teachers were somewhat more likely to withdraw their efforts and to express boredom as the year progressed.

Role of Teacher Support

The findings of this study suggest that teacher support also plays a central role in the motivational dynamics of engagement. If teacher reports of the support they provide are seen as markers of actual teacher support, then findings showed a pattern in which actual support is more important to behavioral engagement and disaffection (than to its emotional counterparts), whereas children's perceptions play a role in shaping changes in all facets of their participation in the classroom. Moreover, mediational analyses suggested that the contributions of teachers' support to changes in students' behavioral engagement are transmitted through their effects on children's perceptions of their interactions

with teachers. Students' perceptions of teacher support seemed to contribute to changes in engagement over the school year by shaping children's views of themselves as competent, autonomous, and related to teachers.

Self-System Model of Motivational Development

The results of this study are largely congruent with the motivational model that suggests that teacher support, through its effects on students' perceptions of their interactions with teachers, shapes student self-systems over the school year, which in turn are strong predictors of all facets of their engagement. Engagement itself takes on its own dynamics, in which engagement and disaffection, through the reciprocal effects of behavior and emotion, tend to amplify themselves over time. These dynamics may explain the high interindividual stability within the motivational system, accompanied by slow declines that are portioned out differentially depending on initial levels of motivational resources. It should be noted that these connections do not differ as a function of gender or grade. The motivational processes that underlie the correlational results, although played out at different mean levels, seem to characterize all the gender and age groups examined in this study.

Implications for Conceptualizations of Engagement

This study speaks directly to a set of issues raised in current reviews of the construct of engagement: how the components of engagement are similar and different from each other and how they work together over time (Fredricks et al., 2004; Jimerson et al., 2003). On one hand, the four indicators of engagement are similar in many ways: They are all relatively stable over the school year, at the same time that they are all worsening somewhat. They are all shaped both by teacher support and by students' self-perceptions, especially of autonomy, and the four indicators are all correlated with each other highly enough that they could reasonably be combined to form a single internally consistent bipolar construct.

On the other hand, each component has its own distinctive antecedents and its own role in the internal dynamics of engagement. The core construct, most prototypical of engagement, is behavioral participation in the classroom. In this sample, it had the highest mean level, the lowest cross-time stability, and the fastest drop across the school year. Behavioral engagement registered the biggest internal effects from emotional engagement and disaffection and from each of the differentiated disaffected emotions, especially boredom. It also registered the biggest effect from the SSPs, especially competence, and was the only indicator shaped by both teacher and student reports of teacher support. Hence, behavioral engagement seems to be a good summary indicator, diagnostic of the state of the entire motivational system. At the same time, however, it is not a strong contributor to changes in the other facets of engagement—it is not a big booster of subsequent enjoyment and interest, nor can it forestall emotional disaffection.

Compared with behavioral engagement, emotional engagement has a somewhat different profile: It is lower in mean level, a bit more stable, and loses less ground over the school year. However, it also seems to be a sensitive barometer of the whole motivational system, as emotional engagement was shaped over time by each SSP (with especially strong contributions from relatedness and autonomy) and also by students' perceptions of their interactions with teachers. Most

important, emotional engagement appears to be the active ingredient in sustaining motivation: It is the strongest contributor to the feedforward internal dynamics of engagement, bolstering behavioral engagement and staving off behavioral disaffection.

The two kinds of disaffection, which were both relatively low and interindividually stable, nevertheless seemed to feed on each other over time. Children who felt emotionally disaffected withdrew their effort over the school year, and as children stop participating, they became more emotionally alienated. Teacher support and the SSPs also played a role, especially in shaping behavioral disaffection. Analyses of the differentiated disaffected emotions suggest that children low in autonomy and relatedness are especially at risk for developing boredom; children low in perceived control, for escalating anxiety; and students low in autonomy, for increasing frustration.

Limitations of the Present Study

Before discussing the implications of the findings further, the limitations of the current study must be taken into account. In terms of participants, this study focused on a group of middle- and working-class students who were largely Caucasian and were drawn from only two schools. Of course, it is noteworthy that modest declines in engagement were found even for this well-functioning group of students. However, it is important to be cautious about generalizing these results to subgroups who show the steepest declines in motivation. Even though many of the same findings have been documented in African American and low-income groups (Connell et al., 1994, 1995; Gutman & Midgley, 2000), little is known about the internal dynamics of engagement for these (or any other) children.

In terms of measures, the study relied heavily on student self-reports. Of course, students may be the only source for information about their SSPs, but it would have been helpful to include observational assessments of engagement and of interactions with teachers. In terms of design, the use of two points of measurement was a decided improvement over a one-time assessment. Nevertheless, time points at the beginning and end of the school year have no particular correspondence to the kind of episodic time during which these motivational cycles are hypothesized to unfold. It is more likely, for example, that the effects of student-teacher interactions on children's subsequent engagement play out over a period of weeks or months. A design that incorporates more frequent time intervals would be better suited to capture these dynamics (e.g., Schmitz & Skinner, 1993).

Implications for Theoretical Development and Future Research

This study contributes to our growing understanding of the indicators and facilitators of engagement. The distinctions proposed between behavioral and emotional engagement and disaffection allowed for the study of how these components shape each other over time and uncovered enough differences in their operation to suggest that in future studies researchers must carefully consider whether they can be meaningfully combined. At the same time, these markers of classroom participation could themselves be distinguished from the self-systems and qualities of student-teacher interactions that have sometimes been included under the

broad conceptual sweep of “engagement” (Jimerson et al., 2003). Even if social contexts and self-perceptions are relevant and important (an assertion supported by this study), they should be unpacked from engagement itself if research is to investigate how these personal and social factors have an impact on the quality of students’ participation in learning activities over time.

This study also suggests that future empirical efforts can build on the SSMM by incorporating additional factors drawn from reviews of motivation and engagement (e.g., Wigfield et al., 2006). Other facets of engagement, especially cognitive forms, can be considered in relation to behavioral and emotional features, along with more disruptive forms of disaffection (Fredricks et al., 2004). Moreover, the general motivational dynamics are also likely to include additional components, for example, other facets of teachers’ actions (such as competence feedback and their own enthusiasm) and the nature of the learning tasks students are required to undertake (especially the extent to which they are interesting, fun, and relevant). Other self-perceptions (e.g., goal orientations or values) can be incorporated as predictors of engagement and perhaps as alternative pathways through which teachers shape student motivation (Brophy, 2004; Stipek, 2002).

Perhaps most important, future studies can incorporate the assessment of important long-term motivational outcomes, such as identification with and commitment to school (Deci & Ryan, 1985; Finn, 1989, 1993), the internalization of the values of achievement and learning (Brophy, 1999; Eccles & Wigfield, 2002), and the development of the capacities and motivation for self-regulated learning (Ryan & Connell, 1989; Schunk & Zimmerman, 1994) or coping with academic difficulties and challenges (Skinner & Wellborn, 1994, 1997). These are the enduring motivational resources to which students’ active enthusiastic participation likely contributes during late elementary school and that may act as protective buffers as students go through the normatively challenging transitions to middle and high school.

In sum, the general direction of this research appears promising as a source of insights about the dynamics of student engagement. The study suggests, for example, the centrality of children’s interest and emotion in initiating and sustaining their participation in learning activities (e.g., Pekrun et al., 2002; Schutz & DeCuir, 2002) and highlights the burden that an emotion as commonplace as boredom can put on children’s effortful involvement in academic tasks. Our results underscore the importance of student autonomy to engagement (Deci et al., 1985) as well as pointing out that its low mean level suggests that this need is not well met, even in this generally well-functioning group. At the same time, all of the self-systems we considered play a role—feelings of competence are needed to bolster exertion and persistence, and relatedness and autonomy are needed to spark the interest and enjoyment that sustains effort over time. Taken together, our findings suggest that the behaviors and emotions students present in class may provide teachers with a window on the inner workings of children’s motivational resources and vulnerabilities (Furrer, Kelly, & Skinner, 2003). Patterns of engagement and disaffection may be diagnostic of the state of students’ feelings of relatedness, competence, and autonomy, and if they are faltering, teachers may be able to figure out the kinds of motivational supports that could bolster them. Such compensatory teacher reactions may suggest one avenue for helping diminish or perhaps even reverse self-amplifying cycles of disaffection. Future studies focusing on these

and other questions of motivational dynamics may further elucidate the role of engagement in the long-term development of student academic resilience and success.

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Appendix

Engagement Versus Disaffection With Learning: Student-Report

Behavioral Engagement

1. I try hard to do well in school.
2. In class, I work as hard as I can.
3. When I'm in class, I participate in class discussions.
4. I pay attention in class.
5. When I'm in class, I listen very carefully.

Emotional Engagement

1. When I'm in class, I feel good.
2. When we work on something in class, I feel interested.
3. Class is fun.
4. I enjoy learning new things in class.
5. When we work on something in class, I get involved.

Behavioral Disaffection

1. When I'm in class, I just act like I'm working. (–)
2. I don't try very hard at school. (–)
3. In class, I do just enough to get by. (–)
4. When I'm in class, I think about other things. (–)
5. When I'm in class, my mind wanders. (–)

Emotional Disaffection

1. a. When we work on something in class, I feel bored. (–)
- b. When I'm doing work in class, I feel bored. (–)

- c. When my teacher first explains new material, I feel bored. (–)
2. a. When I'm in class, I feel worried. (–)
- b. When we start something new in class, I feel nervous. (–)
- c. When I get stuck on a problem, I feel worried. (–)
3. When we work on something in class, I feel discouraged. (–)
4. Class is not all that fun for me. (–)
5. a. When I'm in class, I feel bad. (–)
- b. When I'm working on my classwork, I feel mad. (–)
- c. When I get stuck on a problem, it really bothers me. (–)
- d. When I can't answer a question, I feel frustrated. (–)

Note. Adapted from *Engaged and Disaffected Action: The Conceptualization and Measurement of Motivation in the Academic Domain*, by J. G. Wellborn, 1991, unpublished doctoral dissertation, University of Rochester. Copyright 1991 by J. G. Wellborn. Adapted with permission. The items added to the Emotional Disaffection subscale can be used to tap the more differentiated disaffected emotions.

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