A Motivational Perspective on Engagement and Disaffection:
Conceptualization and Assessment of Children’s Behavioral and Emotional
Participation in Academic Activities in the Classroom

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Abstract

This paper presents a motivational conceptualization of engagement versus disaffection in the classroom that emphasizes children’s active, constructive, focused enthusiastic participation in the activities of learning, and that distinguishes engagement from disaffection, and behavioral from emotional features. The psychometric properties of brief teacher-report and self (student)-report assessments of behavioral engagement, emotional engagement, behavioral disaffection, and emotional disaffection were examined using data from 1018 students in third through sixth grade. Structural analyses of these four indicators confirmed that a multi-dimensional structure was a better fit to the data than bipolar or unidimensional models. The validity of the measures was supported by findings that teacher-reports were correlated with student-reports, with in vivo observations of engagement in the classroom, and with markers of self-system and social contextual processes. We conclude that these measures capture important features of engagement versus disaffection in the classroom, and that any assessment aiming to be comprehensive should include markers of each. Additional dimensions not included in these measures were identified, pointing the way to future research.
In recent years, enthusiasm for the concept of *engagement* has emerged from many lines of theory, research, and practice (Fredricks, Blumenfeld, & Parks, 2004). At its most general, academic engagement refers to the quality of a child’s or youth’s connection or involvement with the endeavor of schooling and, hence, with the people, activities, tasks, goals, values, customs, and place that comprise it. Educators are attracted to the concept because (compared to status indicators like student SES or race) engagement represents a potentially malleable proximal influence shaping children’s academic retention, achievement, and resilience. Despite emerging consensus about the big picture, however, work on engagement, because it reflects multiple perspectives, has brought with it a profusion of conceptual and operational definitions (Fredricks et al., 2004; Jimerson, Campos, & Grief, 2003; Libbey, 2004; O’Farrell & Morrison, 2003). As summarized by Furlong et al. (2003), “These seminal perspectives have, in parallel, emerged over the years to provide a complementary and increasingly multidimensional understanding of what school engagement is and how it contributes to the understanding of youth development and educational outcomes” (p. 101).

At the core of many conceptualizations is a construct that captures the quality of students’ participation with learning activities in the classroom, ranging from energized, enthusiastic, focused, emotionally positive interactions with academic activities to apathetic withdrawal. This feature of engagement is of interest to educational researchers because it reflects the kind of interactions with curricula and materials that should produce (or interfere with) actual learning. Even if youth stay emotionally attached or physically present in school, unless they become
engaged with learning opportunities, their academic careers cannot be considered a success. This facet of engagement is especially important to motivational researchers, many of whom consider it to be the outward manifestation of a motivated student (e.g., Connell & Wellborn, 1991; Deci & Ryan, 1985, 2000; Skinner, Kindermann, Connell, & Wellborn, in press; Wentzel, 1993).

This paper aims to contribute to ongoing discussions about the meaning of engagement in three ways. First, we present a conceptualization of engagement in the classroom that fits within motivational traditions, and distinguishes engagement from disaffection and behavioral from emotional features. Second, we describe two brief assessments (teacher-report and student-report) designed to capture these four indicators of engagement and test their psychometric and structural properties in a sample of third through sixth graders. Third, we examine the validity and utility of the measures by analyzing their connections with each other and with in vivo observations of engagement in the classroom, and by exploring their concurrent links to a set of self-system and social contextual factors. We do not argue that this conceptualization represents a comprehensive overview of all indicators of engagement, only that the features it includes are core and important indicators of engagement in the classroom, and meet the definitional criteria specified in recent authoritative reviews of the concept (Fredricks et al., 2004). However, if it is easier to substitute “constructive participation in academic activities” for engagement throughout the paper, we do not object.

*Conceptualization and Assessment of Engagement versus Disaffection*

The conceptualization of engagement has been part of a larger model of human motivation developed and elaborated over the last several decades (Connell & Wellborn, 1991; Deci & Ryan, 1985, 2000; Skinner, 1991; Wellborn, 1991). To use the model’s conceptualization of engagement, it is not necessary to agree with its organismic and contextual assumptions about
fundamental human needs. However, research inspired by these assumptions (as well as research conducted outside of this framework) has shown that children’s active enthusiastic effortful participation in learning activities in the classroom predicts their achievement in and completion of school (e.g., Connell et al., 1995; Connell, Spencer, & Aber, 1994; Pierson & Connell, 1992; Skinner, Wellborn, & Connell, 1990; Skinner, Zimmer-Gembeck, & Connell, 1998; see Fredricks et al., 2004, for a review). This motivational conceptualization has two notable features: the idea that engagement includes both behavioral and emotional participation in the classroom, and the idea that engagement requires a conceptualization of its opposite, which we term *disaffection* (Connell & Wellborn, 1991).

*Engaged behavior and engaged emotion.* Like other motivational conceptualizations, ours includes key markers of engaged *behaviors*, including effort exertion and persistence. In addition, we included indicators of mental effort, such as attention and concentration. This aspect of engagement has also been referred to as on-task behavior, academic behavior, and class participation. Unlike some conceptualizations of engagement, we also include engaged *emotions*. These do not encompass the entire range of positive academic emotions (Meyer & Turner, 2002; Pekrun et al., 2002; Schutz & DeCuir, 2002; Weiner, 1985), only those that reflect energized emotional states, such as enthusiasm, interest, and enjoyment. As opposed to more comprehensive theories of interest (Hidi, Renninger, & Krapp, 2004; Schiefele, 2001) that include personal and situational interest and an analysis of the factors that catch and hold interest, our conceptualization of engagement includes only the state of being caught and held.

*Disaffected behavior and disaffected emotion.* Conceptually, the opposite of engagement is *disengagement*, which implies the *absence* of engagement, including the absence of effort or persistence. Hence, disengagement is typically operationalized as passivity, lack of initiation,
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and giving up (Murdock, 1999; Vallerand, 1997), sometimes accompanied by the emotions of
dejection, discouragement, or apathy (as depicted in theories of learned helplessness, e.g.,
Peterson, Maier, & Seligman, 1993). However, there are other pathways to disengagement
besides helplessness. Participation can also be undercut by coercion (Deci & Ryan, 1985),
exclusion (Merton, 1953; Newmann, 1991), or boredom. A fuller account is especially important
in describing disengagement in enterprises from which an individual cannot voluntarily exit,
such as school. The normal reaction to helplessness or exclusion is avoidance. However, when
physical withdrawal is prohibited, forms of participation may develop that reflect mental or
emotional withdrawal, such as frustration, disruptive noncompliance, or simply going through
the motions (Finn, Pannozzo, & Voekl, 1995).

Hence, the motivational conceptualization employs the term disaffection (Connell &
Wellborn, 1991). Disaffected behaviors include the core behaviors of disengagement, namely,
passivity, lack of initiation, lack of effort, and giving up. In addition, they include mental
withdrawal and ritualistic participation, such as lack of attention, pretending to pay attention, and
going through the motions. Disaffected emotions included those that reflect enervated emotion
(tired, sad, bored), alienated emotion (frustration, anger), and pressured participation (anxiety). It
was expected that the range of forms of disaffection included (e.g., withdrawal, alienation,
helplessness) might result in a multidimensional construct.

*Purpose of the Current Study*

Based on a conceptualization of engagement that incorporates behavior and emotion as well
as engagement and disaffection, this study was designed to examine the structural properties of
brief student- and teacher-reports of engagement, and to explore their correlations with each
other as well as with in vivo observations of engagement in the classroom and with a set of
personal and contextual factors that were hypothesized to facilitate motivation.

_Students and teachers as reporters of engagement and disaffection._ Recent reviews of motivation in education have questioned whether students know what motivates them (e.g., Pintrich, 2003). In our conceptualization, we do not assume that students know _why_ they are motivated, but we do assume that students know _whether_ they are motivated, that is, students are excellent reporters of their own engagement and disaffection. In fact, the state of being engaged or disaffected is extremely salient to people of all ages. Those who interact closely with individuals can also accurately evaluate their motivational states, especially when evaluators’ own engagement in an activity is contingent on the quality of the participation of the target individuals. Student motivation is highly valued by teachers, and hence, student engagement versus disaffection is very salient to them (Stenlund, 1995). At the same time, however, accurate assessment by teachers is made more difficult if students attempt to conceal their disaffection by masking their negative emotions or by presenting compliant instead of engaged behaviors.

_The structure of engagement and disaffection._ By assessing all four indicators of engagement, we could analyze several features of its structure. First, we examined whether the item sets designed to tap each aspect of engagement were unidimensional. We expected that, if multidimensionality were detected, it would be in emotional disaffection. Second, we examined the structure among the four components as depicted in Figure 1. We tested whether behavioral and emotional features of engagement and disaffection (numbered 1 and 2 in the figure) are better represented by two dimensions or by a single dimension. We expected that they would be better represented by two dimensions which would be highly positively inter-correlated. Next we tested whether the engaged and disaffected features of behavior and emotion (numbered 3 and 4) are better represented by two dimensions or by a single bipolar dimension. We expected that they
would be better represented by two dimensions which would be moderately negatively inter-correlated. Finally, we tested all four components at once, expecting that a model of four interrelated dimensions would provide a better fit than one- or two-factors models.

_Theoretical rationale for the structural hypotheses._ It is not intuitively obvious why the components of engagement and disaffection would _not_ be expected to form a single bipolar construct. The most important reason is that children’s engagement in the classroom does not reflect a stable personality trait that should consistently express itself across situations and time. Instead, it is made up of thousands of different interactions between a developing child and his or her changing assignments on different school subjects and days in a fluctuating social context. Reports of engagement, which reflect the patterns of that involvement cumulated over episodes and subjects (e.g., Marks, 2000), would not necessarily be unidimensional; they would likely be more complex and therefore multi-dimensional (Fredricks et al., 2004). However, even without a unidimensional structure, it makes sense that the components would be related in ways (behavior and emotion positively and engagement and disaffection negatively) systematic enough to allow a meaningful aggregate to be created. Its lowest point would depict negatively-toned passivity, which could be considered a risk factor for (or the first step of) drop-out; and its highest point would represent enthusiastic energetic participation, found to promote learning and healthy development. Distinguishable components would also suggest that other combinations might be of interest (e.g., Finn et al., 1995; Furrer et al., 2006; Patrick, Skinner, & Connell, 1993).

_Correspondence between student and teacher reports of engagement._ Because engagement and disaffection are both observable and salient, we expected teacher and student reports to be moderately correlated with each other. Given that behaviors are more easily observable, we expected the behavioral components to be more highly correlated than the emotional
components. In terms of mean level correspondence, we expected students to be more optimistic in their reports of their own behavioral engagement than teachers, and for teachers to overestimate the state of student’s emotional engagement relative to student’s own reports.

*Correlations with in vivo observations of engagement and disaffection in the classroom.*

Because engagement and disaffection are observable manifestations of motivation, it is easy to assume that direct observations would be the optimal indicator of engagement in the classroom. And in fact, many researchers have successfully captured some features of engagement in the classroom through direct observation (e.g., Center for the Organization and Restructuring of Schools, 1992, as cited in Marks, 2000). However, taking the entire body of research into consideration, we conclude that the behavioral features of engagement are more easily captured by direct observations than the emotional features, and the active features (active on-task and active off-task) are more easily captured by observations than their passive counterparts (e.g., Bolstad & Johnson, 1977). That is, it can be difficult to distinguish passive behavior that is off-task from passive behavior that is on-task. It can also be difficult to classify children with a high activity level who show high levels of both actively engaged and actively disaffected behaviors.

*Correlations with hypothesized predictors of motivation.* We expected that student engagement and disaffection would be correlated with indicators of a variety of individual and contextual processes (Fredricks et al., 2004). Although no study can include markers from all theories of motivation, we included constructs from several theories focusing on individual factors, such as perceived control (10 different strategy and capacity beliefs; Skinner et al., 1998); autonomy orientations reflecting four self-regulatory styles (external, introjected, identified, and intrinsic, Ryan & Connell, 1989); sense of relatedness to four social partners (teachers, parents, friends, and classmates, Furrer & Skinner, 2003; Lynch & Cicchetti, 1997);
academic optimism and pessimism (Carver & Scheier, 1999; Peterson et al., 1993); goal orientations (Dweck, 1999b; Eliot, 1999; Nicholls, 1984); and reactions following failure (Dweck, 1999a; Skinner & Wellborn, 1997). We also included markers of six motivationally supportive and unsupportive features of relationships with teachers and parents, namely, involvement/warmth, structure, autonomy support, neglect/rejection, chaos, and coercion (Murray & Greenburg, 2000; Skinner & Belmont, 1993; Skinner, Johnson, & Snyder, 2005). Each of these constructs has a history of study in its own right, and, taken together, they represent markers of the key constructs in the motivational model from which this conceptualization of engagement and disaffection was drawn.

Method

Participants

Data from 1018 children (135 3rd grade students, 340 4th graders, 166 5th graders, and 363 6th graders approximately equally divided by gender) who had participated in a four-year longitudinal study on children’s motivation in school were utilized from two measurement points (Fall (October) and Spring (May) of Year Three). Students and their 53 teachers, drawn from a public elementary school in a rural-suburban school district, were predominantly Caucasian with approximately 5% of the students identifying themselves as non-white. Student socioeconomic status, as determined by parents’ level of education and occupation, ranged between working and middle class. (See Skinner et al., 1998, for details.)

Procedures and Measures

Trained interviewers administered self-report questionnaires to students in their classrooms in three 45-minute sessions. For the questionnaires, respondents used a 4-point Likert scale: Not at all true (1), Not very true (2), Sort of true (3), or Very true (4). Negatively worded items were
reverse coded and items in each scale were averaged. Table 3 and Table 5 contain score reliability information for each scale, along with 90% confidence intervals (Barnette, 2005). Note that some of the internal consistency reliabilities for the 4 and 5 item student-report measures are below the generally accepted standard of .80, indicating that some of the correlational results may be attenuated due to measurement error (Henson, 2001).

Behavioral and Emotional Engagement vs. Disaffection

Student-report assessment. Each student reported on their own: (a) behavioral engagement using 5 items tapping their effort, attention, and persistence while initiating and participating in learning activities; (b) behavioral disaffection using 5 items tapping their lack of effort and withdrawal from learning activities while in the classroom; (c) emotional engagement using 6 items tapping their emotions indicating motivated involvement during learning activities; and (d) emotional disaffection using 9 items tapping their emotions indicating motivated withdrawal or alienation during learning activities. The items from the current version of the student-report measure of engagement versus disaffection are presented in Appendix A (Wellborn, 1991; see also Connell et al., 1994, 1995; Furrer et al., 2006; Skinner et al., 1990, 1998, 2008).

Teacher-report assessment. Each student’s teacher reported on that student’s (a) behavioral engagement using 4 items tapping students’ effort, attention, and persistence while initiating and participating in learning activities; (b) behavioral disaffection using 4 items that tapped students’ lack of effort and withdrawal from learning activities while in the classroom; (c) emotional engagement using 4 items tapping students’ emotions indicating motivated involvement during learning activities; and (d) emotional disaffection using 4 items designed to tap students’ emotions indicating motivated withdrawal or alienation during learning activities. The items from the current version of the teacher-report measure of engagement versus disaffection are
presented in Appendix B (Wellborn, 1991; see also Connell et al., 1994, 1995; Furrer et al., 2006; Skinner et al., 1990, 1998, 2008).

**Individual Motivational Factors**

*Perceived control in the academic domain.* Using 10 scales from the Student Perceptions of Control Questionnaire (SPOCQ: Skinner, Chapman, & Baltes, 1988; Skinner, et al., 1990; Skinner et. al, 1998), students reported about (a) their Control Beliefs using 6 items that tapped their general expectancies about achieving success and avoiding school failure; (b) their Strategy Beliefs using 25 items tapping their beliefs about the effectiveness of five potential causes (effort, ability, powerful others, luck, and unknown) for success and failure in school; and (c) their Capacity Beliefs using 16 items tapping their beliefs about the extent to which they have access to the four known causes (effort, ability, powerful others, luck).

*Sense of relatedness.* Students completed four items each regarding their sense of belonging or connectedness to their teachers, their mothers, their fathers, their friends, and their classmates (Connell & Wellborn, 1991; Furrer & Skinner, 2003).

*Autonomy orientation.* The measure of academic autonomy was composed of 17 items that tapped whether children engage in activities for: (a) *external* reasons which refers to doing work because of rules or fear of punishment; (b) *introjected* reasons which refers to doing work because one “should” and to avoid negative emotions; (c) *identified* reasons which refers to reasons for working related to desire for understanding and learning; and (d) *intrinsic* reasons which refers to doing work because it is enjoyable (Ryan & Connell, 1989).

*Academic optimism and pessimism.* Students responded to 7 items tapping their optimism (e.g., “When I have trouble with a problem, I usually get it right in the end”) and pessimism (e.g., “If a problem is really hard, I'll probably miss it.”) about success in academic activities.
Goal orientations. Students responded to 8 items reflecting the value they placed on learning (e.g., “How much do you care about learning new things in school?”) and on producing good grades (e.g., “How much do you care about getting good grades?”). Performance avoidance goals were not assessed (Elliot & McGregor, 2001).

Reactions to academic challenges. Students responded to 9 items about their reactions when encountering academic difficulties. Four items tapped mastery reactions (e.g., “When I run into a difficult question, I try even harder”), 5 items tapped giving up (e.g., “If a problem is really hard, I just quit working on it”), and 11 items tapped negative emotional reactions (e.g., “When I get stuck on a problem, it really bothers me”).

Social Contextual Factors

Parent motivational support. Students responded to 16 items depicting their perceptions of the amount of general support provided by their parents, using three scales tapping parent involvement, structure, and autonomy support (Skinner et al., 2005).

Teacher motivational support. Students reported on the level of involvement, structure, and autonomy support they experienced from their teachers (Skinner & Belmont, 1993): 16 items tapped involvement, including warmth/affection, dedication of resources, knowledge about the student and his needs, and dependability; 8 items tapped hostility and neglect; 14 items measured the kind and amount of structure, including clarity of expectations and contingency; 15 items reflected chaos and confusion; 8 items tapped autonomy support, including teacher provision of choice, relevance, and respect; and 13 items tapped teacher coercion and controlling behavior.

Observations of Engagement and Disaffection in the Classroom

Observations were conducted in two fourth-grade classrooms and focused on 56 children (29 girls and 27 boys). Everyday classroom interactions were videotaped between the fifth week and
tenth week of school; two prior weeks were used as for warm-up. Observations were conducted during regular classroom lessons; 35% of the observations took place during Math, 35% during English (or other language-oriented lessons), 15% during Social Studies, and 15% during special projects (e.g., preparation and giving of class presentations). Interactions were videotaped according to predetermined random schedules, across periods of 15 school days in each classroom. Each day, a target child was in the camera’s focus for about 20 minutes. On average, each child was observed for a total of 2 hours, on 8 different days (ranging from a low of two times, once in Math and once in Language Arts, to a high of 25 times).

**Coding system.** The coding system consisted of seven exhaustive and mutually exclusive categories, adapted from systems developed by Charlesworth and Hartup (1967), Horn et al. (1986), and Kerr et al. (1986). Three categories captured children’s on-task behavior: **On-Task Active Initiative** (e.g., a child contributed something to a lesson on his or her own initiative, raised his or her hand, or volunteered to go to the board), **On-Task Working** (e.g., reading, working on a problem, continuing with an activity, answering a question), and **On-Task Passive** (e.g., listening to the teacher or a classmate making an on-task contribution). Three categories captured Off-task behavior: **Off-Task Initiative** (e.g., disrupting a classmate or interrupting the teacher with a non-academic issue), **Off-Task Working** (e.g., building paper airplanes, participating in a classmate’s active off-task behavior), and **Off-Task Passive Behavior** (e.g., looking out the window, daydreaming, or listening to a classmate’s off-task contribution, doodling without following the teacher). A category of “Other” was used for all other events.

**Coding procedure and reliability.** Codings were sequential in the natural occurrence of behavior and consisted of registering the respective behavior code as well as the running time when a specific event occurred. Each day of observation was taped on one videotape. Twelve
trained observers coded the tapes in a random sequence (specifics of the coder training can be found in Sage, et al., 2000). To determine reliability, four 3-minute segments (2 within the first 15 minutes and 2 within the last 15 minutes) of each videotape were coded by two observers separately. Reliability codings proceeded without observer knowledge about which parts would be used for reliability checks, and without the reliability observer present. Thus, reliability estimates are conservative compared to real-time observations when two observers code simultaneously. Across the 29 days of observation (videotapes), 200 3-minute reliability segments were coded twice by two observers (a total of 8000 observations). The average kappa was .71 (with the lowest agreement of 57% for Off-Task Initiative, and the highest agreement of 87% for On-Task Working behavior; other percentages were as follows: On-Task Initiative: 70%; On-Task Passive: 74%; Off-Task Working: 76%; Off-Task Passive: 69%; observer agreement was 91% on “other”). There were no indications of systematic observer differences, observer fatigue, or decay in observers’ reliability across time.

Results

Analyses were conducted in four parts. First, multiple models depicting the structure of the assessments of engagement and disaffection were compared, using structural equation modeling with AMOS 4.0. Second, the correspondence between teacher- and child- reports was determined. Third, for a subset of children, the links between the assessments and in vivo observations in the classroom were investigated. Fourth, the correlations between indicators of engagement and markers of a set of individual and social processes were analyzed.

The Structure of Engagement and Disaffection

Testing unidimensionality of the four item sets. The first step was designed to identify a set of unidimensional and internally consistent items for each of the four components. Hence, the
unidimensionality of each item set was assessed separately, using four confirmatory analyses of one-factor models. For student-reports of engagement, using data from the spring time point, three of the four item sets showed a good fit to a single-factor model: behavioral engagement (4 items, $\chi^2 = 6.59$ (2,1018), $p < .05$; CFI =1.00, TLI = 1.00, RMSEA = .05 [90% CI = .01, .09]), behavioral disaffection (4 items, $\chi^2 = 16.13$ (2,1018), $p < .001$; CFI =1.00, TLI = .99, RMSEA = .08 [90% CI = .05, .12]), and emotional engagement (6 items, $\chi^2 = 62.08$ (9,1018), $p < .001$; CFI =1.00 TLI = .99, RMSEA = .08 [90% CI = .06, .10]). As expected, the item set for emotional disaffection, which contained items referring to boredom, worry, and general “badness,” was better fit by a hierarchical model, in which the disaffected emotions were differentiated. The three latent factors (boredom, worry, and feeling bad) loaded to form a higher-order unidimensional latent factor (9 items, $\chi^2 = 94.25$ (24,1018), $p < .001$; CFI =1.00, TLI = .99, RMSEA = .05 [90% CI = .04, .07]). The resulting score reliabilities were adequate (averaging .79). These results were replicated using data from the fall. For the teacher report assessments, items had to be deleted from each item set to create unidimensional subscales with two or three items. These saturated models (i.e., completely unrestricted models with 0 degrees of freedom) all fit perfectly (e.g., GFI = 1.00; RMSEA = 0.00); hence, we did not report fit statistics for these four unidimensional subscales. The resulting score reliabilities calculated from each 3-item scales (or inter-item correlation for emotional engagement) were high, averaging .86.

Correlations among the components of engagement. The observed correlations among the four components are presented separately for student-reports and teacher-reports in Table 1. Of greatest interest were the correlations between emotion and behavior within engagement and disaffection, and between engagement and disaffection within emotion and behavior. As can be seen, all correlations were moderately high and in the expected directions (i.e. emotion and
behavior were positively correlated whereas engagement and disaffection were negatively correlated). For student-reports, emotion and behavior were more tightly connected (average $r = .61$) than were engagement and disaffection (average $r = -.52$), but all the correlations were well below $|1.0|$, which suggested a multidimensional structure among the components. For teacher-reports, however, emotion and behavior were more tightly connected for engagement ($r = .72$, averaged over fall and spring) than for disaffection ($r = .62$, averaged over fall and spring); and engagement and disaffection were more highly correlated for behavior ($r = -.82$, averaged over fall and spring) than for emotion ($r = -.63$, averaged over fall and spring). In fact, the negative correlations between behavioral engagement and behavioral disaffection were much higher than for students and suggested a potentially bipolar structure for teacher-reports. None of the other correlations approached $|1.0|$, which suggested a multidimensional structure. As expected, factor inter-correlations taken from the structural models (also included in Table 1) were higher.

Comparing the fit of models that distinguished behavior from emotion. For each pair of components, we used confirmatory analyses to compare one-factor and two-factor models. Factors were allowed to correlate and error correlations were fixed to zero. Of greatest interest were model comparisons. Because the one- and two-factor models were nested, we were able to calculate a chi-squared difference statistic to directly test statistically significant differences in fit. Given that the chi-squared difference test is sensitive to sample size (i.e., more likely to reject null hypothesis that two nested models are statistically equivalent), we also examined the CFI difference for each set of nested models. A difference of 0.01 or greater is an indication that two nested models are statistically different (Cheung & Rensvold, 2002).

First, we compared the one-factor model with a two-factor model that distinguished behavior from emotion, for engagement and for disaffection, separately (depicted in Figure 1 by the
For both engagement and disaffection, we found that the models including separate factors for behavior and emotion fit the data statistically significantly better: student-reports, for engagement, $\chi^2$ difference (1) = 106.73, $\Delta$CFI = 0.00; and for disaffection, $\chi^2$ difference (1) = 137.33, $\Delta$CFI = 0.01; teacher-reports, for engagement, $\chi^2$ difference (1) = 226.65, $\Delta$CFI = 0.07; and for disaffection, $\chi^2$ difference (1) = 277.33, $\Delta$CFI = 0.08. Although the chi-squared difference test for student-reported engagement was statistically significant, the CFI difference suggests that perhaps the difference found was more a function of sample size. This pattern of results was replicated using data from the fall time point (CFI difference for student-reported engagement, one vs. two factor models = 0.00 in the fall as well).

In the two-factor models, all critical ratios associated with regression weights had absolute values higher than 2. For student-reports, factor loadings for the two-factor model ranged from .55 to .84; squared multiple correlations (SMC) ranged from .30 to .71. For teacher-reports, factor loadings ranged from .72 to .92; SMC ranged from .52 to .85.

Comparing the fit of models that distinguished engagement from disaffection. Second, we compared a model of one bipolar factor (engaged versus disaffected) with a model that distinguished engagement from disaffection, for emotion and behavior, separately (as depicted in Figure 1 by the arrows numbered 3 and 4, respectively). Again, factors were allowed to correlate and error correlations were fixed to zero. For both behavior and emotion in spring, models that included separate factors for engagement and disaffection fit the data statistically significantly better than one-factor models: for student-reports, behavior, $\chi^2$ difference (1) = 183.38, $\Delta$CFI = 0.01; and emotion, $\chi^2$ difference (1) = 298.60, $\Delta$CFI = 0.01; for teacher reports, behavior, $\chi^2$ difference (1) = 48.45, $\Delta$CFI = 0.02; and emotion, $\chi^2$ difference (1) = 328.03, $\Delta$CFI = 0.13. This pattern of results was replicated using data from the fall. In the two-factor models, all critical
ratios associated with regression weights had absolute values higher than 2. For student-reports, factor loadings in the two-factor model ranged from .57 to .88; SMC ranged from .33 to .77. For teacher-reports, factor loadings ranged from .73 to .92; SMC ranged from .53 to .85.

Comparing the fit of a four-factor model with two-factor alternative models. The final set of structural analyses directly compared a four-factor model distinguishing among all the components with two two-factor alternatives: (a) behavior (engaged versus disaffected) and emotion (engaged versus disaffected), and (b) engagement (behavior and emotion) and disaffection (behavior and emotion). In these models factors were allowed to correlate and error correlations were fixed to zero. As can be seen in Table 2, the four-factor models fit the data statistically significantly better in spring than either of the two-factor models: for student-reports, behavior and emotion, $\chi^2$ difference $(1) = 530.90, \Delta\text{CFI} = 0.01$; and engagement and disaffection, $\chi^2$ difference $(1) = 305.35, \Delta\text{CFI} = 0.00$; for teacher-reports, behavior and emotion, $\chi^2$ difference $(1) = 448.07, \Delta\text{CFI} = 0.05$; and engagement and disaffection, $\chi^2$ difference $(1) = 631.70, \Delta\text{CFI} = 0.08$. Although the chi-squared difference test for student-reported behavior and emotion was statistically significant, the CFI difference suggests that perhaps the difference found was more a function of sample size. This pattern of results was replicated using data from the fall. (CFI difference for student-reported engagement and disaffection, two vs. four factors was less than 0.01 in the fall as well.)

Descriptive statistics for the components from the final model. Table 3 presents the means, standard deviations, and score reliability coefficients (Cronbach’s alphas) for the four components of engagement, separately for fall and spring, as well as the correlations between fall and spring scores for each assessment. In terms of the student-reports, internal consistency reliabilities were generally adequate (.70 or above), with the exception of the 4-item behavioral
engagement subscale in the fall, although it improved by spring. The cross time correlations revealed a moderately high level of stability over the school year (average $r = .62$). Comparison of mean levels from fall to spring revealed the typical pattern of losses in both behavioral and emotional engagement across the school year.

In terms of teacher-reports, score reliabilities were all satisfactory (above .80). Inter-individual stability over the school year was moderately high (average $r = .74$). Comparison of mean levels from fall to spring also revealed a loss in emotional engagement across the school year, although the loss in behavioral engagement seen in student-reports was not found. As shown in the last rows of Table 3, despite the fact that the four components can be distinguished, they can also be combined in different ways (e.g., by averaging emotion and behavior or by subtracting disaffection from engagement) to create conceptually interesting scores that were internally consistent and highly stable.

Multivariate analyses of mean level differences in the components of engagement as a function of gender and grade revealed the expected statistically significant effects: Girls tended to be motivationally “better off” than boys, showing consistently higher levels of behavioral and emotional engagement, as well as lower levels of behavioral and emotional disaffection at both time points. Moreover, younger children tended to be motivationally “better off” than children starting middle school, demonstrating consistently higher levels of behavioral and emotional engagement, as well as lower levels of behavioral and emotional disaffection at both time points. At the same time, comparisons of the cross-year stability correlations for the four components of engagement revealed that none differed as a function of gender or grade level.

*Comparison of Student- and Teacher- reports of Engagement in the Fall and Spring*

The correlations between student- and teacher- reports of the four components of engagement
in fall and spring, as well as the mean level comparisons are presented in Table 4. As can be seen, teachers and students showed a modest degree of convergence in their ratings of engagement and disaffection (average $r = .30$), especially for the behavioral indicators, which were more directly observable (average $r = .36$). As would be expected, inter-reporter correlations were even higher for the aggregated measures, for example, the correlations between teacher- and student-ratings of behavioral engagement/disaffection averaged .43.

Cross-reporter comparison of mean levels revealed that students felt that they were more behaviorally engaged (i.e., that they were trying harder and exerting more effort) than teachers observed them to be. Students and teachers did not differ in their ratings of behavioral disaffection, perhaps because teachers were providing direct feedback to students about their behaviors. Teachers and students did differ on their ratings of student emotions in the classroom: Students indicated that they were more emotionally disaffected than teachers perceived them to be. These differences may reflect the fact that emotions are not as easily observed by teachers, or that students have learned to mask the expression of their emotions. In the case of emotional disaffection, it may also be due to the slightly different mix of emotions included in the item sets for students than for teachers. Although there are few studies, these findings are consistent with other cross-reporter comparisons (Skinner & Belmont, 1993).

*Observations of Engagement and Disaffection in the Classroom*

The third goal of this study was to examine whether student- and teacher-report assessments of engagement were statistically significantly correlated with *in-vivo* observations of students' engagement in the classroom. In total, 46,756 observations were coded during the 95.5 hours of observations (i.e., with an average about 8.2 codes per minute). 40% of all the observations occurred each during Mathematics and Language lessons, 10% each in Social Studies and
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Projects. Rates per minute were computed, reflecting the length of time children were observed to engage in the behaviors of each observation category each minute. Most of the time, children were observed to be On-Task, and On-Task behaviors were typically of a longer duration than off-task behaviors.

Relations between behavior frequencies and self-reported and teacher-reported engagement. Correlations between children’s observed behavior (rates and durations per minute) and their engagement in the classroom (self- and teacher-reports) were modest; strongest relations (ranging from .35 to .40) were found for teacher-ratings; for student-reports, ratings of disaffection were correlated with only classroom behaviors, but even these relations were comparably small. The correlational pattern between teacher-rated engagement and observed behaviors was not affected when children’s gender was controlled.

Figure 2 contains the model of the relations between teacher-ratings of engagement (combining all four components) and the behavioral observations, organized into On-task behaviors (combining on-task initiative, working, passive, and the maximum time spent on-task) and Off-task behaviors (combining off-task initiative, working, passive, and the maximum time spent off-task). In this model, totally activity level, duration of negative emotions, and achievement were also included, because it became apparent that some children were just more active and/or emotionally reactive than others. The highly active children showed more behaviors of both types (on- and off-task) and the highly emotionally reactive children showed more emotions of both types (engaged and disaffected). The model showed a satisfactory fit with the data: $\chi^2 (df, 56) = 64.66$, CFI = .943, CMIN/df = 1.22, RMSEA = .070. As can be seen in Figure 2, children whom teachers rated as more behaviorally and emotionally engaged (vs. disaffected) also showed overall higher amounts and durations of On-Task behavior.
(standardized coefficient = .28) and lower amounts and durations of Off-Task behavior (standardized coefficient = -.34). Models depicting the connection between student-ratings of engagement and their observed behavior in the classroom did not show a good fit with the data.

**Correlations with Potential Personal and Social Facilitators of Motivation**

The fourth goal of this study was to examine the extent to which student- and teacher-reports of engagement were correlated with a set of variables posited by motivational theories to facilitate engagement. These included markers of perceived control, autonomy, relatedness, optimism vs. pessimism, goal orientations, reactions to academic challenges and difficulties, and interactions with parents and teachers. The means, standard deviations, internal consistencies, and cross-year stabilities for all these student-report variables (presented in Table 5) suggested a generally well-functioning group of third through sixth graders, whose inter-individual rankings remained relatively stable over the school year (average cross-year correlation = .57) and whose mean levels were consistent with other research on these self-perceptions.

Correlations between engagement and its potential facilitators, also in Table 5, showed the predicted pattern in both fall and spring, in that engagement showed robust positive correlations with personal and social indicators and negative correlations with factors hypothesized to undermine motivation. Of course, student ratings of engagement showed a pattern of stronger correlations, given that the potential facilitators were also reported by students. Consistent with theoretical expectations, students who were more engaged also showed consistently higher confidence in their capacities (including effort, ability, powerful others, and luck), more intrinsic and identified regulatory styles, higher relatedness to all social partners, but especially teachers and classmates, higher learning goals, optimism, and mastery reactions to challenges, as well as more supportive relationships with parents and teachers. In contrast, students who were more
disaffected also evinced more reliance on uncontrollable strategies (including powerful others, luck, and unknown causes), a more external self-regulatory style, higher pessimism, avoidance, and negative emotional reactions to challenge, and experienced interactions with teachers that were more hostile, chaotic, and controlling. As expected, this pattern of findings was replicated across reporters at both time points.

Only three variables did not show the expected pattern, and some theoretical explanations could be offered for these findings. First, Strategy beliefs for effort were not correlated with student-ratings of engagement (and only marginally correlated with teacher-ratings), suggesting that, even though students agreed that effort is an effective strategy for school success, this belief alone was not sufficient to support constructive classroom engagement (see Skinner et al., 1988, for similar findings). Second, Strategy beliefs for ability were not correlated with teacher-ratings of engagement, although they showed a low negative correlation with student-reports of engagement. In general, beliefs in ability as a strategy, because they imply that success requires “talent,” are typically thought to undermine constructive engagement especially in the face of challenge (Dweck, 1999b; Skinner et al., 1998). And, third, an Introjected self-regulatory style was marginally correlated with student-ratings (positively) and with teacher-ratings (negatively), but only at one time point. This style of self-regulation (in which students’ reasons for completing homework or doing school work reflect guilt or internal pressure) seems to be a double-edged sword, in that the pressure spurs on behavior but at the expense of enjoyment and enthusiasm (e.g., Patrick et al., 1993).

Discussion

A study was conducted to analyze the structure, psychometric properties, validity, and correlates of two assessments of children’s behavioral and emotional participation in learning
activities in the classroom, referred to as engagement and disaffection. In general, multidimensional structures were found for both student- and teacher-reports, revealing behavioral and emotional components that are positively correlated, and engaged and disaffected components of each, which are negatively correlated with each other. Moreover, for student report, disaffected emotions, although highly intercorrelated, could nevertheless be further distinguished according to whether students were feeling anxious, bored, or frustrated/bad.

The psychometric properties of individual components, tapped by only three or four items each, were for the most part satisfactory; for a few components, additional supplementary items were suggested (see Appendices A and B). Correlations across the school year revealed components to be interindividually stable, although they tended to worsen in mean level over the year. Comparison of student- and teacher-reports showed the predicted pattern: Teachers and students showed modest agreement, which was higher for behavior than for emotion. Students reported that they were more behaviorally engaged than teachers judged them to be, and teachers underestimated student emotional disaffection relative to students’ actual feelings. Despite its multidimensional structure, however, components were systematically interrelated in ways that allowed items to be combined into aggregates (with disaffection items reverse coded) that showed satisfactory internal consistencies, high cross-time stabilities, and good correspondence between reporters. Teacher reports, but not student-reports, were correlated with in vivo observations of engagement in the classroom, likely because teachers are also observers of student engagement and disaffection. For both reporters, indicators of engagement versus disaffection were consistently linked in theoretically expected ways with a variety of individual factors hypothesized to shape motivation and with markers of supportive and unsupportive features of teacher and parent relationships.
Taken together, findings indicate that these two assessments of engagement and disaffection are satisfactory markers of the quality of children’s participation in academic activities in the classroom. As such, they should be comparable to other teacher- or child-report assessments of student participation (e.g., Berndt & Miller, 1990; Finn et al., 1995) and other measures of student engagement that focus on involvement in school tasks (Murdock, 1999; Sinclair et al., 2001), academic effort (e.g., O’Donnell et al. 1995), or effort and interest in the classroom (e.g., Wentzel, 1998). Research has shown that these features of classroom participation are correlated as expected with other indices of day-to-day academic involvement, such as attendance/absenteeism, completion of homework, and preparedness for class (e.g., Johnson et al., 2001; Finn, 1989). At the same time, the multidimensional structure of the current assessments indicates that no one component is a proxy for the entire construct; comprehensive assessments need to include items that tap all four components. Moreover, the extent to which components can be distinguished suggests that scores could be created to differentiate children with specific profiles, for example, children who are highly behaviorally engaged but emotionally disaffected (Patrick et al., 1993) or children who are anxiously withdrawn (Finn et al., 1995).

Limitations of the Assessments of Engagement and Disaffection

The current assessments are limited, both within the footprint of the item sets included in current versions, and in relation to other conceptualizations of engagement. In terms of the current item sets, it should be noted that more multidimensionality may be present than is depicted by the four components of engagement and disaffection. For example, within children’s reports of emotional disaffection, we found evidence that multiple negative emotions can be differentiated: in this case, feeling bored, worried, and frustrated/ bad. Moreover, in the teacher reports, we needed to delete several items from behavioral and emotional engagement in order to
identify unidimensional item sets. This suggests that additional dimensions might be present, if we had had sufficient items to detect them. Taken together, these findings suggest that engagement and disaffection may eventually be best represented by a hierarchical structure, with multiple dimensions within each of the four components identified in this study. Conceptually-driven generation of items combined with the kinds of structural comparisons used in the present study may lead to a more complete picture of the structure of engagement.

*Other conceptualizations of engagement.* It should also be noted that the current assessments did not contain all the components that are sometimes included as indicators of classroom participation or academic involvement. Some researchers add student “commitment” or “beyond the call,” which refer to preference for challenge and willingness to take on extra work; these features are tapped in assessments of intrinsic or mastery motivation (e.g., Gottfried, 1985; Harter, 1981). To disaffection, some assessments add student oppositional, disruptive, rebellious, defiant, or otherwise actively off-task behavior (e.g., Finn et al., 1995; Roeser, Strobel, & Quihuis, 2002). To both components, it is possible to add the assessment of “re-engagement” or reactions to challenges and setbacks, also studied as “coping” (Skinner & Wellborn, 1997). Future research can examine how each of these potential features is related structurally to the four components tapped in this study.

*Other motivational perspectives.* The current assessment of engagement and disaffection, although representing a core feature of most major theories of motivation, does not include all the features and shadings considered by every theoretical framework. For example, attribution theories include a wider variety of academic emotions, such as pride and shame (Weiner, 1985), self-determination theory emphasizes the experience of psychological freedom or pressure (Deci & Ryan, 1985), learned helplessness includes cognitive and self-esteem deficits (Peterson et al.,
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Volition perspectives focus on energetic depletion and cognitive exhaustion (Kuhl, 1984), theories of achievement goals point out their effects not only on enjoyment, anxiety, boredom, and anger, but also on hope, pride, shame, and hopelessness, (Pekrun, Elliot, & Maier, 2006). In fact, a fuller account of motivated action would include, not only ongoing action, but also the direction of action, as manifested in choice, selection, and preference (Wigfield et al., 2006), and the regulation of action, sometimes called self-regulated learning (Schunk & Zimmerman, 1994; Zimmerman, 2000) or academic coping (Skinner & Wellborn, 1997).

In sum, we bring to discussions of children’s engagement in school a conceptualization and two assessments of students’ behavioral and emotional involvement in academic activities in the classroom, which we have referred to as engagement and disaffection. The four components can be distinguished statistically, but practically, it may make more sense to combine them unless there exists a clear theoretical rationale for contrasting their individual effects or examining specific combinations. These assessments capture core constructs key to motivational theories in the field today, and may be used as a foundation to create a more complete account of motivated action, for example, by adding “orientation” (both the engaged orientation of going beyond what is required and the disaffected orientation of opposition and disruption) as well as an explicit conceptualization of “direction” by including choice and self-regulation. Perhaps future work on the conceptualization and assessment of motivated participation in academic activities in the classroom can build on the conceptual arguments and empirical strategies presented in this paper.
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California School Psychologist, 8, 29-41.


achievement. *Journal of Educational Psychology, 82*, 22-32.


Table 1

Correlations among Dimensions for Student-reports and for Teacher-reports of Engagement and Disaffection

<table>
<thead>
<tr>
<th>Student-report</th>
<th>Behavioral Engagement</th>
<th>Behavioral Disaffection</th>
<th>Emotional Engagement</th>
<th>Emotional Disaffection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral Engagement</td>
<td>---</td>
<td>-.55 (-.75)</td>
<td>.60 (.79)</td>
<td>-.45 (-.64)</td>
</tr>
<tr>
<td>Behavioral Disaffection</td>
<td>-.42</td>
<td>---</td>
<td>-.52 (-.79)</td>
<td>.67 (.83)</td>
</tr>
<tr>
<td>Emotional Engagement</td>
<td>.53</td>
<td>-.41</td>
<td>---</td>
<td>-.60 (-.77)</td>
</tr>
<tr>
<td>Emotional Disaffection</td>
<td>-.34</td>
<td>.61</td>
<td>-.51</td>
<td>---</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teacher-report</th>
<th>Behavioral Engagement</th>
<th>Behavioral Disaffection</th>
<th>Emotional Engagement</th>
<th>Emotional Disaffection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral Engagement</td>
<td>---</td>
<td>-.82 (-.94)</td>
<td>.73 (.84)</td>
<td>-.60 (-.72)</td>
</tr>
<tr>
<td>Behavioral Disaffection</td>
<td>-.81</td>
<td>---</td>
<td>-.67 (-.79)</td>
<td>.65 (.81)</td>
</tr>
<tr>
<td>Emotional Engagement</td>
<td>.70</td>
<td>-.65</td>
<td>---</td>
<td>-.66 (-.78)</td>
</tr>
<tr>
<td>Emotional Disaffection</td>
<td>-.50</td>
<td>.55</td>
<td>-.59</td>
<td>---</td>
</tr>
</tbody>
</table>

*Note. N = 1018 students. Correlations for fall are below the diagonal; correlations for spring are above the diagonal. All correlations were statistically significant at the p < .001 level. In parentheses are the factor inter-correlations.*
<table>
<thead>
<tr>
<th>Goodness-of-Fit Indices</th>
<th>Student-report Assessments</th>
<th>Teacher-report Assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Two-Factor Model</td>
<td>Four-Factor Model</td>
</tr>
<tr>
<td>$\chi^2$</td>
<td>1839.71</td>
<td>1614.16</td>
</tr>
<tr>
<td>$df$</td>
<td>226</td>
<td>226</td>
</tr>
<tr>
<td>$p$</td>
<td>&lt; .001</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>CFI</td>
<td>0.97</td>
<td>0.98</td>
</tr>
<tr>
<td>TLI</td>
<td>0.97</td>
<td>0.97</td>
</tr>
<tr>
<td>RMSEA (90% CI)</td>
<td>0.08 (.08, .09)</td>
<td>0.08 (.07, .08)</td>
</tr>
</tbody>
</table>

Note. $N = 1018$ students. These data were from the spring measurement point; patterns were replicated using data from the fall measurement point.

In all of these models factors were allowed to correlate and error correlations were fixed to zero. E/D = Engagement/Disaffection. B/E = Behavioral/Emotional.

The Four Factor Model = Behavioral Engagement, Emotional Engagement, Behavioral Disaffection, and Emotional Disaffection. CI = Confidence Interval.
Table 3

<table>
<thead>
<tr>
<th>Construct</th>
<th>Student-report Assessments</th>
<th>Teacher-report Assessments</th>
<th>Cross-year stability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fall (α, 90% CI)</td>
<td>M</td>
<td>SD (α, 90% CI)</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Behavioral Engagement</td>
<td>.61 (.58, .64)</td>
<td>3.39</td>
<td>0.54</td>
</tr>
<tr>
<td>Behavioral Disaffection</td>
<td>.71 (.69, .73)</td>
<td>1.84</td>
<td>0.69</td>
</tr>
<tr>
<td>Emotional Engagement</td>
<td>.76 (.74, .78)</td>
<td>3.12</td>
<td>0.58</td>
</tr>
<tr>
<td>Emotional Disaffection</td>
<td>.83 (.82, .84)</td>
<td>1.88</td>
<td>0.61</td>
</tr>
<tr>
<td>Behavioral &amp; Emotional</td>
<td>.79 (.77, .81)</td>
<td>3.25</td>
<td>0.49</td>
</tr>
<tr>
<td>Engagement</td>
<td>Behavioral &amp; Emotional</td>
<td>.86 (.85, .87)</td>
<td>1.86</td>
</tr>
<tr>
<td>Disaffection</td>
<td>Behavioral &amp; Emotional</td>
<td>.73 (.71, .75)</td>
<td>3.27</td>
</tr>
<tr>
<td>Behavioral Engagement vs.</td>
<td>Behavioral Disaffection</td>
<td>.86 (.85, .87)</td>
<td>3.12</td>
</tr>
<tr>
<td>Emotional Engagement vs.</td>
<td>Behavioral Disaffection</td>
<td>.88 (.87, .89)</td>
<td>3.20</td>
</tr>
</tbody>
</table>

Note. N = 1018 students. All correlations (cross-year stabilities) statistically significant at the p < .001 level. CI = Confidence Interval.
Table 4

Correlations and Mean Level Differences between Student- and Teacher-reports of the Components of Engagement in Fall and Spring

<table>
<thead>
<tr>
<th>Construct</th>
<th>Correlation between Student- and Teacher-reports</th>
<th>Mean Level Differences between Student- and Teacher-reports</th>
<th>Correlation between Student- and Teacher-reports</th>
<th>Mean Level Differences between Student- and Teacher-reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral Engagement</td>
<td>.32</td>
<td>MD = 0.20,</td>
<td>.37</td>
<td>MD = 0.15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d = .27*</td>
<td></td>
<td>d = .21*</td>
</tr>
<tr>
<td>Behavioral Disaffection</td>
<td>.38</td>
<td>MD = -0.01,</td>
<td>.35</td>
<td>MD = 0.05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d = .01</td>
<td></td>
<td>d = .06</td>
</tr>
<tr>
<td>Emotional Engagement</td>
<td>.24</td>
<td>MD = -0.13,</td>
<td>.30</td>
<td>MD = -0.13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d = .17</td>
<td></td>
<td>d = .16</td>
</tr>
<tr>
<td>Emotional Disaffection</td>
<td>.21</td>
<td>MD = 0.36,</td>
<td>.24</td>
<td>MD = 0.32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d = .46*</td>
<td></td>
<td>d = .40*</td>
</tr>
<tr>
<td>Behavioral &amp; Emotional</td>
<td>.34</td>
<td>MD = 0.04,</td>
<td>.38</td>
<td>MD = 0.01</td>
</tr>
<tr>
<td>Engagement</td>
<td></td>
<td>d = .06</td>
<td></td>
<td>d = .01</td>
</tr>
<tr>
<td>Behavioral &amp; Emotional</td>
<td>.35</td>
<td>MD = 0.17,</td>
<td>.36</td>
<td>MD = 0.18</td>
</tr>
<tr>
<td>Disaffection</td>
<td></td>
<td>d = .25*</td>
<td></td>
<td>d = .25*</td>
</tr>
<tr>
<td>Behavioral Engagement vs.</td>
<td>.44</td>
<td>MD = 0.10,</td>
<td>.42</td>
<td>MD = 0.05</td>
</tr>
<tr>
<td>Disaffection</td>
<td></td>
<td>d = .18</td>
<td></td>
<td>d = .07</td>
</tr>
<tr>
<td>Emotional</td>
<td>.26</td>
<td>MD = -0.24,</td>
<td>.33</td>
<td>MD = -0.22</td>
</tr>
<tr>
<td>Engagement vs. Disaffection</td>
<td></td>
<td>d = .36*</td>
<td></td>
<td>d = .32*</td>
</tr>
<tr>
<td>Emotional</td>
<td>.41</td>
<td>MD = -0.07,</td>
<td>.42</td>
<td>MD = -0.09</td>
</tr>
<tr>
<td>Engagement vs. Disaffection</td>
<td></td>
<td>d = .12</td>
<td></td>
<td>d = .14</td>
</tr>
</tbody>
</table>

Note. N = 1018 students. MD = mean difference. d = Cohen’s d calculated using pooled standard deviation that accounts for the correlation between student and teacher reports. An asterisk (*) indicates an effect size that is small to medium (between .2 and .5). Positive mean differences indicate higher student report scores; negative mean differences indicate higher teacher report scores. All correlations are statistically significant at the p < .01 level.
Table 5
Means, Standard Deviations, and Cross-year Stabilities of Potential Facilitators of Motivation and their Correlations with Student- and Teacher-reports of Engagement at Two Time Points

<table>
<thead>
<tr>
<th>Academic Perceived Control</th>
<th>Fall</th>
<th>Spring</th>
<th>Cross-Year Stability</th>
<th>Student-report of Engagement</th>
<th>Teacher-report of Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Control Beliefs</td>
<td>3.42</td>
<td>.50</td>
<td>3.43 .052 .71 .69, .73</td>
<td>.55 .58 .62 .40 .44</td>
<td></td>
</tr>
<tr>
<td>Effort Strategy</td>
<td>3.09</td>
<td>.58</td>
<td>3.08 .057 .65 .62, .68</td>
<td>.45 -.01 ns -.05 ns -.04 ns .14</td>
<td></td>
</tr>
<tr>
<td>Ability Strategy</td>
<td>2.54</td>
<td>.71</td>
<td>2.51 .069 .68 .65, .71</td>
<td>.50 -.29 -.29 -.05 ns -.04 ns</td>
<td></td>
</tr>
<tr>
<td>Powerful Others Strategy</td>
<td>1.75</td>
<td>.66</td>
<td>1.73 .066 .74 .72, .76</td>
<td>.58 -.48 -.55 -.27 -.37</td>
<td></td>
</tr>
<tr>
<td>Luck Strategy</td>
<td>1.87</td>
<td>.69</td>
<td>1.80 .068 .75 .73, .77</td>
<td>.59 -.42 -.45 -.25 -.30</td>
<td></td>
</tr>
<tr>
<td>Unknown Strategy</td>
<td>1.91</td>
<td>.66</td>
<td>1.84 .067 .74 .72, .76</td>
<td>.54 -.50 -.60 -.31 -.38</td>
<td></td>
</tr>
<tr>
<td>Capacity Beliefs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effort Capacity</td>
<td>3.36</td>
<td>.53</td>
<td>3.30 .057 .72 .70, .74</td>
<td>.59 .64 .71 .38 .47</td>
<td></td>
</tr>
<tr>
<td>Ability Capacity</td>
<td>3.29</td>
<td>.58</td>
<td>3.27 .059 .76 .74, .78</td>
<td>.65 .66 .66 .42 .42</td>
<td></td>
</tr>
<tr>
<td>Powerful Others Capacity</td>
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<td>Autonomy Orientation</td>
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<td>2.80</td>
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<td>2.76 .074 .79 .77, .81</td>
<td>.82 -.26 -.28 -.13 -.12</td>
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<td>.77</td>
<td>2.71 .077 .77 .75, .79</td>
<td>.53 -.09 -.01 ns .03 ns .07 *</td>
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<td>Identified self-regulatory style</td>
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<td>Intrinsic self-regulatory style</td>
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<td>.94</td>
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<td>Sense of Relatedness</td>
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<td>Relatedness to Mother</td>
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<td>.61</td>
<td>3.52 .062 .80 .78, .82</td>
<td>.46 .40 .46 .22 .32</td>
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<tr>
<td>Relatedness to Father</td>
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<td>.66</td>
<td>3.50 .063 .80 .78, .82</td>
<td>.46 .38 .42 .22 .34</td>
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<tr>
<td></td>
<td>Fall</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>a (90% CI)</td>
</tr>
<tr>
<td>------------------------------</td>
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<td>------------</td>
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<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
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<td>.75</td>
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<td>.74</td>
<td>.81 (.79, .81)</td>
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<td>3.48</td>
<td>.60</td>
<td>.76 (.74, .78)</td>
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<td>Relatedness to Classmates</td>
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<td>.74</td>
<td>3.23</td>
<td>.73</td>
<td>.84 (.83, .85)</td>
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<td><strong>Academic Optimism &amp;</strong></td>
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<td><strong>Pessimism</strong></td>
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<td>Optimism</td>
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<td><strong>Goal Orientations</strong></td>
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<td>Learning Goals</td>
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<td>3.42</td>
<td>.56</td>
<td>.77 (.75, .79)</td>
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<td>Performance Approach Goals</td>
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<td>.52</td>
<td>3.61</td>
<td>.50</td>
<td>.76 (.74, .78)</td>
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<td><strong>Reactions to Challenge</strong></td>
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<td>Mastery reactions</td>
<td>3.47</td>
<td>.55</td>
<td>3.35</td>
<td>.57</td>
<td>.73 (.70, .75)</td>
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<td>Avoidance reactions</td>
<td>1.61</td>
<td>.62</td>
<td>1.66</td>
<td>.61</td>
<td>.78 (.76, .80)</td>
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<tr>
<td>Negative emotional reaction</td>
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<td>.67</td>
<td>2.34</td>
<td>.65</td>
<td>.89 (.88, .90)</td>
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<td><strong>Social Context</strong></td>
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<td>Parents: Warmth</td>
<td>3.32</td>
<td>.59</td>
<td>3.28</td>
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<td>Structure</td>
<td>3.21</td>
<td>.57</td>
<td>3.20</td>
<td>.55</td>
<td>.52 (.48, .56)</td>
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<td>Autonomy Support</td>
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<td>.53</td>
<td>3.20</td>
<td>.51</td>
<td>.60 (.57, .63)</td>
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<td>Teachers: Warmth</td>
<td>3.00</td>
<td>.59</td>
<td>2.89</td>
<td>.64</td>
<td>.86 (.85, .87)</td>
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<td>Structure</td>
<td>3.12</td>
<td>.47</td>
<td>3.06</td>
<td>.49</td>
<td>.83 (.82, .84)</td>
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<td>Autonomy Support</td>
<td>2.81</td>
<td>.55</td>
<td>2.79</td>
<td>.56</td>
<td>.76 (.74, .78)</td>
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<td>Teachers: Hostility/Neglect</td>
<td>2.00</td>
<td>.62</td>
<td>2.03</td>
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<td>.85 (.83, .86)</td>
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<td>Chaos</td>
<td>2.05</td>
<td>.60</td>
<td>2.02</td>
<td>.60</td>
<td>.90 (.89, .91)</td>
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<td>Coercion</td>
<td>2.10</td>
<td>.59</td>
<td>2.07</td>
<td>.64</td>
<td>.90 (.89, .91)</td>
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</table>
Note. N = 1018 students. All potential facilitators were measured using student-reports. All correlations are significant at the $p < .01$ level unless noted *$p < .05$ or $ns$ = not statistically significant. Cronbach’s alpha coefficients reported from the spring time point. CI = Confidence Interval.
Figure Captions

Figure 1. A depiction of the possible structural relations among the four components of engagement. Arrows 1 and 2 depict hypotheses that behavioral and emotional features of engagement and disaffection are better represented by two dimensions than by one. Arrows 3 and 4 depict hypotheses that engaged and disaffected features of behavior and emotion are better represented by two dimensions than by a single bipolar dimension.

Figure 2. A model of the relations between teacher-ratings of student engagement and in vivo behavioral observations of student on-task and off-task behavior in the classroom.
Appendix A.

Engagement vs. 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 coursework, 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 Wellborn (1991). The items added to the Emotional Disaffection subscale can be used to tap the more differentiated disaffected emotions.
Appendix B.

Engagement vs. Disaffection with Learning: Teacher-report

**Behavioral Engagement**
1. In my class, this student works as hard as he/she can.
2. When working on classwork in my class, this student appears involved.
3. When I explain new material, this student listens carefully.
4. In my class, this student does more than required.
5. When this student doesn’t do well, he/she works harder.

**Emotional Engagement**
1. In my class, this student is enthusiastic.
2. In class, this student appears happy.
3. When we start something new in class, this student is interested.
4. When working on classwork, this student seems to enjoy it.
5. For this student, learning seems to be fun.

**Behavioral Disaffection**
1. When we start something new in class, this student thinks about other things. (-)
2. In my class, this student comes unprepared. (-)
3. When faced with a difficult assignment, this student doesn’t even try. (-)
4. In my class, this student does just enough to get by. (-)
5. When we start something new in class, this student doesn’t pay attention. (-)

**Emotional Disaffection**
1. a. When we work on something in class, this student appears to be bored. (-)
   b. When doing work in class, this student looks bored. (-)
2. a. When working on classwork, this student seems worried. (-)
   b. In my class, this student is anxious. (-)
3. a. In class, this student seems unhappy. (-)
   b. In my class, this student appears to be depressed. (-)
4. a. In my class, this student is angry. (-)
   b. When working on classwork, this student appears frustrated. (-)
5. a. When I explain new material, this student doesn’t seem to care. (-)
   b. When working on classwork in my class, this student seems uninterested. (-)

*Note.* Adapted from Wellborn (1991). The items added to the Emotional Disaffection subscale can be used to tap the more differentiated disaffected emotions.