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Adolescent Educational Success and Mental Health Vary Across School Engagement Profiles

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The present study used multidimensional and person-centered approaches to identify subgroups of adolescents characterized by unique patterns of behavioral, emotional, and cognitive engagement and examined whether adolescent developmental outcomes varied as a function of different combinations of engagement components. Data were collected on 1,025 youths (57% African American, 43% European American; 53% female, 47% male). Five profiles of student engagement in school were identified: Highly Engaged, Moderately Engaged, Minimally Engaged, Emotionally Disengaged, and Cognitively Disengaged. These 5 groups differed in their educational and psychological functioning. The study not only provides empirical evidence supporting the multifaceted nature of school engagement but also demonstrates its utility relative to educational success and mental health. Considering the multiple dimensions of student engagement simultaneously from a person-centered perspective promises a useful approach for addressing sample heterogeneity and understanding different patterns of school engagement and their consequences.

Keywords: school engagement, multidimensional construct, person-centered approach, academic success, mental health

Active engagement in school is vital to a student's educational success and subsequent development into a competent member of society (Eccles & Wang, 2012). Students who are more engaged in school earn higher grades and show better psychological adjustment to school (Li & Lerner, 2011). Conversely, students who are disengaged from school are more likely to experience academic failure, school dropout, and a host of other negative psychosocial outcomes (Archambault, Janosz, Fallu, & Pagani, 2009; Wang & Holcombe, 2010). Student engagement in school has been shown to decline from elementary through high school (Marks, 2000; National Research Council and Institute of Medicine, 2004; Wang & Eccles, 2012a). A recent national report estimated that about 7,000 students decide to drop out of school every day—a total of 1.2 million students each year—and only about 70% of each year's entering high school freshmen will go on to graduate from high school (National Assessment of Educational Progress, 2009). These observations are particularly concerning given that youths need to be actively involved in the learning process in order to acquire the knowledge and skills they will need to succeed in the marketplace (Fredricks, Blumenfeld, & Paris, 2004).

Researchers, educators, and policy makers are increasingly focused on school engagement as a means for addressing problems of student boredom and alienation, low achievement, and high dropout rates (Fredricks et al., 2004). To increase student engagement in school, we need to better understand (a) the different patterns of school engagement and (b) the impact of different patterns of school engagement on educational success and mental health, both of which are addressed in this study.

Theoretical and Empirical Frameworks for School Engagement

We integrate the self-system model (Connell & Wellborn, 1991; Skinner, Kindermann, Connell, & Wellborn, 2009; Skinner & Wellborn, 1994) and stage-environment fit theory (Eccles & Midgley, 1989) as the guiding frameworks to capture the rich complexity of student engagement in school. The self-system model, a motivational framework grounded in self-determination theory (Deci & Ryan, 2000), posits that engagement refers to energized, directed, and continued action, or the discernible qualities of students' interactions with learning activities or environments (Skinner & Wellborn, 1994). The conceptualization of engagement thus includes *behavior*, *emotion*, and *cognitive* components. *Be-*

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havioral engagement refers to participation in learning activities, presence of positive conduct, and absence of disruptive behavior within school or class (e.g., Connell, 1990). *Emotional engagement* refers to positive affective reactions to the school and both interest and valuing of the school activities (e.g., Skinner & Belmont, 1993; Voelkl, 1997). *Cognitive engagement* refers to investment in and use of self-regulated approaches to learning, such as mental effort directed toward understanding and mastering knowledge (Zimmerman, 1989). The three engagement components interact dynamically within individuals (Skinner et al., 2009).

Student engagement is optimized in schools in which the academic and social environments stress and provide opportunities for the students to feel *competent* enough to succeed, *autonomous*, and emotionally *related* to others (Eccles & Midgley, 1989; Eccles et al., 1993; Skinner et al., 2009). *Competence* refers to the need to experience oneself as effective in one's interactions with the learning environment (Elliot & Dweck, 2005). Research shows that feelings of competence are needed to promote behavioral participation and cognitive engagement in school (Deci & Ryan, 2000; Skinner, Furrer, Marchand, & Kindermann, 2008). *Autonomy* relates to the extent to which an individual experiences oneself as the source of action. Students with a greater sense of autonomy have greater interest and enjoyment, in turn sustaining behavioral and emotional engagement (Burchinal, Roberts, Zeisel, & Rowley, 2008; Miserandino, 1996). *Relatedness* pertains to the need to feel connected to other people (Connell & Wellborn, 1991). A sense of connectedness to teachers and peers is associated with positive affective reactions to the school, an important indicator of emotional engagement (Furrer & Skinner, 2003; Wang, Brinkworth, & Eccles, 2012; Wentzel, Battle, Russell, & Looney, 2010).

Unfortunately, research suggests that current secondary school environments may not be changing in ways that reflect the increasing motivational needs, diverse life experiences, and cognitive sophistication of adolescents. This explains the declines in learning motivation and engagement as students move from elementary into secondary school (Eccles, 2009; Eccles, Lord, & Midgley, 1991; Osterman, 2000; Wigfield, Eccles, Schiefele, Roeser, & Davis-Kean, 2006). Stage-environment fit theorists have identified several aspects of secondary school environments that are incommensurate with adolescent motivational needs, including increased social competition-, comparison-, and performance-oriented learning environments; limited opportunities for student autonomy and decision-making; and less caring and supportive teacher–student relationships (Eccles et al., 1993).

Competitive and socially-comparative learning environments are developmentally inappropriate because they tend to undermine the kinds of safe, non-judgmental settings that promote the development of adolescents' competencies (Eccles & Midgley, 1989). Students may react to competitive and socially-comparative learning environments by withdrawing from self-regulated learning efforts, causing them to become cognitively disengaged (Elliot & Dweck, 2005; Urdan, 1997; Wigfield et al., 2006). Large student to teacher ratios mean that the student is not given the opportunity to form meaningful relationships with adults outside the family. Similarly, at a time when teens are developing their sense of independence and autonomy, secondary schools are structured more rigidly and provide fewer chances for students to practice decision making. Students who experience high levels of autonomy and relatedness in secondary school are likely to show an increase in their enjoyment, interest, and valuing of the school activities as the years progress, whereas students who experience low levels of autonomy and relatedness are increasingly likely to feel behaviorally and emotionally disengaged from school over time (Wigfield et al., 2006).

The multidimensional conceptualization of engagement that includes behavioral, emotional, and cognitive components provides a rich characterization of how students act, feel, and think. Students who demonstrate positive behavioral engagement such as good attendance and on-task behavior in the classroom are more likely to succeed academically and remain in school, while students who engage in disruptive behaviors are at greater risk for academic failure and dropout (Appleton, Christenson, Kim, & Reschly, 2006; Simons-Morton & Chen, 2009; Wang, 2009; Wang, Selman, Dishion, & Stormshak, 2010). The extent to which students feel emotionally engaged in school is an important determinant of academic achievement and other developmental outcomes, such as emotional distress, substance use, and depressive symptoms (e.g., Hawkins, Guo, Hill, Battin-Pearson, & Abbott, 2001; Li & Lerner, 2011; Maddox & Prinz, 2003; Wang & Dishion, 2012). Finally, cognitive engagement is positively associated with academic success; students who are willing to exert the necessary cognitive effort develop and use more efficient and effective self-regulated strategies for comprehending complex ideas and evaluating the potential costs and benefits of different strategies (Miller & Byrnes, 2001; Zimmerman, 1989).

Despite the great amount that we have learned about school engagement and academic achievement, the literature has two critical gaps. First, distinctions among the different dimensions of school engagement need to be clarified. Recent theoretical work points to the importance of conceptualizing school engagement as a multidimensional construct (Fredricks et al., 2004; Skinner & Wellborn, 1994). Empirical studies, however, usually focus on the behavioral dimension or combine various dimensions of engagement on a single, global scale (Marks, 2000). The practice of combining items onto global scales precludes both the examination of distinctions among the different types of engagement and associations between these types of engagement and educational and developmental outcomes (Jimerson, Campos, & Greif, 2003).

Second, distinctions among types of students need to be clarified. If there are different aspects of school engagement, these aspects may configure differently in various students. Most extant studies have used variable-centered approaches to examine how levels of global school engagement are associated, on average, with different levels of academic outcomes. A critical, yet seldom investigated assumption of such variable-centered approaches is that the individuals sampled from the population are homogeneous with respect to the causal dynamics among the study variables (Bergman, von Eye, & Magnusson, 2006; Richters, 1997). If the homogeneity assumption is valid, estimates of average relations among variables will have strong external validity; if this assumption is invalid, the average effect generalized from the sample to the population may not apply to a single individual.

In contrast, person-centered approaches to theory and data analysis are designed specifically to examine the validity of the homogeneity assumption by focusing on (a) how individuals vary in their multivariate profiles and (b) how different profiles have different implications for individual developmental processes

(Bergman & Andersson, 2010; Bergman, Magnusson, & El-Khouri, 2003). For example, two students may have the same score on a global scale of school engagement, but the score for one student might result primarily from the behavioral components of this scale, whereas the score for the other student might result primarily from the cognitive components. In this case, a global scale score will likely mask the causal antecedents or consequences of these different forms of school engagement, whereas a multivariate profile will reveal them. A thorough examination of school engagement profiles, constructed by reference to individual-level patterns of values across several different indicators of school engagement, can help to reveal both nonlinearity in the relations among variables and heterogeneity among individuals within the larger population (Bergman, 2001).

Indeed, two recent studies have identified different patterns of student engagement over time (e.g., increasing vs. decreasing behavioral engagement) by using a person-centered approach (Archambault et al., 2009; Li & Lerner, 2011). Their findings challenge the notion that adolescents experience a common developmental pattern of growth or decline. Failure to consider various subgroups impedes our ability to design targeted intervention for specific groups of students. However, one major limitation of these two studies is that they examined patterns of *each* dimension of engagement individually, rather than patterns of *multiple* dimensions of engagement simultaneously. It is unclear how different dimensions of engagement might interact with each other within individuals to influence educational success and mental health. For instance, are some school engagement profiles more predictive of particular academic outcomes than others? Are these dimensions of engagement additive, such that having more of each is beneficial, or do some dimensions function differently depending on the status of other dimensions? We seek to address these questions by providing information as to the desirability of different configurations of engagement and the synergy among these dimensions of engagement.

The Current Study

Given the diversity of adolescent school engagement experiences, we incorporated multidimensional and person-centered approaches to capture this complexity and included a sample of African American and European American youths from diverse socioeconomic backgrounds. We aimed to identify subgroups of adolescents characterized by unique patterns of behavioral, emotional, and cognitive engagement. We then tested whether adolescent developmental outcomes varied as a function of different combinations of engagement components by using the school engagement profiles to predict educational success and mental health. We address two specific research questions:

1. Are there meaningful subgroups of adolescents who differ based on their profile of behavioral, emotional, and cognitive engagement in 9th grade?

2. How do these subgroups in 9th grade predict subsequent educational success (i.e., academic performance, educational aspiration, dropout rates, and college enrollment rates) and mental health (i.e., depression) in 11th grade or 1 year after expected graduation from high school, controlling for prior educational and mental health outcomes in 9th grade?

Because of the scarcity of empirical evidence on profiles of school engagement, we do not make predictions on the specific number of profile groups that we might find in regards to behavioral, emotional, and cognitive engagement. However, following the logic of our conceptual framing, we expect to find at least three groups of students. Group 1: We expect to find a group of students characterized by low emotional engagement but moderate behavioral and cognitive engagement because the misalignment between school environment and personal needs is likely to be experienced first as an emotional reaction to changes (Csikszentmihalyi, 1997; Eccles et al., 1993; Eccles & Roeser, 2011). Group 2: We expect to find a group of students characterized by low behavioral, emotional, and cognitive engagement. Research indicates that behavioral disengagement is usually in response to emotional discomfort and cognitive disengagement (Finn, 1989; Skinner et al., 2009; Wang & Eccles, 2012a). Thus, students who feel emotionally disconnected from school and exert less cognitive effort during learning are often less behaviorally engaged in school and begin to participate in risky behaviors. Group 3: We expect to find a group of students having no difficulties transitioning to secondary school, adapting well to the academic and social environment (Eccles & Roeser, 2011) and, hence, characterized by high behavioral, emotional, and cognitive engagement.

Furthermore, we expect to find variation in the relationships between school engagement profiles and changes in educational and mental health outcomes. Specifically, we hypothesize that youths whose school engagement is characterized by a combination of lower behavioral, emotional, and cognitive engagement will be more likely to have poor academic performance, depression, and drop out of high school. On the contrary, youths who are behaviorally, emotionally, and cognitively engaged in school will have better educational outcomes and psychological adjustment. Youths whose school engagement is characterized by a combination of lower emotional engagement and moderate behavioral and cognitive engagement will be more likely to have depression and less likely to go to college than youths with high behavioral, emotional, and cognitive engagement, and they will be more likely to have a higher grade point average (GPA) and less likely to drop out of school than youths with low behavioral, emotional, and cognitive engagement.

Method

Sample

The sample included 1,025 adolescents (53% female) who participated in the Maryland Adolescent Development in Context Study. Adolescents were from 23 schools in a large, ethnically diverse county on the east coast of the United States. Participants were African American (57%) and European American (43%). Families' mean annual household income was between $50,000 and $54,999. For the current study, we used interview, questionnaire, and school record information from Waves 3, 4, and 5, when adolescents were in the 9th grade, the 11th grade, and 1 year after expected graduation from high school.

Measures

Academic achievement. In 9th and 11th grades, the adolescents' GPA was collected from the school report cards and student

self-reports, respectively. A weighted average was computed such that A = 5, B = 4, C = 3, D = 2, and F = 1.

Educational aspiration. In 9th and 11th grades, the adolescents' self-reported educational aspiration was measured by one item commonly used in national surveys: "If you could do exactly what you wanted, how far would you like to go in school?" The question was rated along an 8-point scale, ranging from "9th–11th grade"; "graduate from high school"; "post high school vocational or technical training"; "some college"; "graduate from a two year college with an associate degree"; "graduate from a 4 year college"; "get a master's degree or teaching credential"; or "get a law degree, Ph.D., or medical doctor's degree."

School dropout. Information on dropout status was obtained through student self-reports. Students who had not obtained a high school diploma in the county by Wave 5 were identified as school dropouts. Out of the 1,025 students, 78 students (7.5%) were identified as dropouts.

College enrollment. Adolescents reported in face-to-face interviews whether they were enrolled in any college as full time students at Wave 5 (0 = no, 1 = yes).

Depressive symptoms. In 9th and 11th grades, adolescents responded to questions in the home self-administered survey that were related to depressive symptoms during the previous 2 weeks. Depressive symptoms consisted of a subset of items from the Children's Depression Inventory (Kovacs, 1992). Possible responses ranged from 1 (*no symptomatology*) to 3 (*high symptomatology*), and the composite was based on 12 items (αs = .89 and .88).

School engagement. We adapted existing, well-established scales to assess student engagement in school at 9th grade. These scales have been shown to be both reliable and valid in prior research, including internal consistency, convergent and divergent validity, and measurement invariance across gender, ethnicity, and socioeconomic status (SES; see Eccles, Lord, Roeser, Barber, & Jozefowicz, 1997; Wang & Holcombe, 2010; Wang, Willett, & Eccles, 2011).

The construct of *behavioral engagement* was measured by five items from the Behavioral Participation scale (Elliott, Huizinga, & Menard, 1989). Sample items are "How often have you gotten schoolwork done on time?" and "How often have you skipped class?" Item responses were rated along a 5-point scale, ranging from 1 (*almost never*) to 5 (*almost always*). Some item responses were reverse coded, so that higher scores indicated higher levels of behavioral engagement (α = .82).

The construct of *emotional engagement* refers to students' feelings of acceptance, interest, and enjoyment with school and was assessed by four items from the School Identification scale (α = .87) adapted from Gottfredson's (1984) Effective School Battery. Sample items are "I find school work interesting" and "I feel happy and safe in this school." The item responses ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

The construct of *cognitive engagement* was assessed using five items adapted from the Self-Regulated Learning scale (Pintrich, 2000) measuring adolescents' self-regulated or strategic approach to learning (α = .89). Sample items are "How often do you try to relate what you are studying to other things you know about?" and "How often do you check your homework to make sure it's done correctly when you finish it?" Item responses for the scale ranged from 1 (*almost never*) to 5 (*almost always*).

Demographic measures. Socio-demographic characteristics of the participating adolescents and their families were used as statistical controls. These measures included adolescents' gender, ethnic classification, and SES. We standardized and added the parent's education and annual family income to create a composite measure of SES, ranging from 1 (*low*) to 10 (*high*).

Data Analysis

We conducted latent profile analysis (LPA; Muthén & Muthén, 2000) to identify categorical latent classes of individuals implicated by the three continuous indicators of school engagement: behavioral, emotional, and cognitive engagement. The LPA method captures the heterogeneity within a population and classifies individuals into groups in order to provide better parameter estimates, standard errors, and tests of model fit (Muthén, 2008). LPA model fit was compared using log-likelihood, Akaike information criteria (AIC), Bayes information criteria (BIC), and entropy (Grant et al., 2006). Smaller values of log-likelihood, AIC, and BIC indicate better fit to the data, or increased probability of replication, and higher values of entropy reflect better distinctions between groups (Kline, 2005). Profile solutions were examined for interpretability. In addition, analysis of covariance was used to assess group differences in the adolescents' GPA, educational aspirations, and depression, whereas logistic regression was used to examine dropout rates and college enrollment rates. Gender, ethnicity, SES, and prior educational and mental health outcomes at 8th grade were entered as control variables.

All analyses were conducted in Mplus 6.1 (Muthén & Muthén, 2004). We fit a two-level model with school random effect to account for the nested nature of the data (students nested in 23 schools; Henry & Muthén, 2010). We calculated the explained variance at school and student level for each outcome variable. Student-level variance ranged from 99.5% to 97.15%, and school-level variance ranged from 0.5% to 2.85%. In other words, the majority of the heterogeneity was concentrated at the student level.

To ascertain whether the students who dropped out of the study in Wave 4 (n = 67) and Wave 5 (n = 124) differed from the students who participated in all three waves, we conducted a series of contingency table analyses and t tests with all study variables at Wave 3 and found no significant difference on any of the measured constructs used in this study. The amount of missing data was less than 5%, and the data were missing completely at random, as evidenced by non-significant results derived from the generalized least squares combined test of homogeneity of means and covariance matrices representing complete and incomplete data, $\chi^2(1, N = 1{,}025) = 972.46$, *ns* (Little & Rubin, 1987). We dealt with the missing data through full-information maximum likelihood estimation, allowing us to include all available data and identify the parameter values that had the highest probability of producing the sample data (Baraldi & Enders, 2010).

Results

Descriptive statistics for, and correlations among, key study variables are shown in Table 1. In order to identify the best fitting model, we fit latent profile models containing one through seven profiles to exhaust the available model. Results suggested that a five-profile solution provided the best fitting model for these data

based on conventional fit indices (AIC = 7,213.15, BIC = 7,430.47, entropy = .87). Mean differences were evident across the five profiles on behavioral engagement, $F(4, 1025) = 62.54$, $p < .001$; emotional engagement, $F(4, 1025) = 625.32$, $p < .001$; and cognitive engagement, $F(4, 1025) = 69.43$, $p < .001$. As shown in Figure 1, the first profile, which can be described as "Moderately Engaged," was characterized by moderate levels of behavioral, emotional, and cognitive engagement. This subgroup composed 46% ($n = 472$) of the sample. The second profile exhibited high levels of behavioral, emotional, and cognitive engagement and was labeled "Highly Engaged." This subgroup composed 17% ($n = 174$) of the sample. The third profile exhibited low levels of engagement in the three dimensions and was labeled "Minimally Engaged." This subgroup composed 14% ($n = 144$) of the sample. The fourth profile exhibited low levels of emotional engagement, relatively moderate levels of behavioral engagement, and high levels of cognitive engagement and was labeled "Emotionally Disengaged." This group composed 10% ($n = 102$) of the sample. The fifth profile exhibited low levels of cognitive engagement and moderate levels of behavioral and emotional engagement. This group, which we labeled "Cognitively Disengaged," composed 13% ($n = 133$) of the sample. Results indicated that these profiles did not differ by gender, $\chi^2(4, N = 1,021) = 1.99$, *ns*; ethnicity, $\chi^2(4, N = 1,002) = 2.22$, *ns*; or SES, $\chi^2(4, N = 998) = 2.36$, *ns*.

Analyses of covariance and Logistic Regression revealed that engagement profile groups in 9th grade predicted GPA, educational aspiration, and depression at 11th grade, as well as dropout rates and college enrollment rates measured 1 year after expected graduation from high school. There was no significant interaction between demographic characteristics (i.e., gender, ethnicity, and SES) and group membership in the educational and mental health outcomes. Figures 2, 3, 4, 5, and 6 depict the mean scores for each of the five student engagement groups and the results of post hoc tests indicating the means that differed significantly between groups.

GPA

As shown in Figure 2, adolescents from the profile groups of Highly Engaged and Emotionally Disengaged had fairly similar GPAs, and their GPAs were notably higher than the GPAs of adolescents in the other groups (all comparisons significant at least at $p < .05$). The remaining groups' GPAs in order from highest to lowest were as follows: Moderately Engaged, Cognitively Disengaged, and Minimally Engaged.

Educational Aspiration

Figure 3 displays the variations in educational aspiration among the profile groups. Highly Engaged adolescents demonstrated significantly higher educational aspiration than any other group. Aspiration among the Cognitively Disengaged, Emotionally Disengaged, and Moderately Engaged groups was quite similar, and aspiration within the Minimally Engaged group was the lowest.

Dropout

As shown in Figure 4, adolescents in the Minimally Engaged and Moderately Engaged groups were much more likely to drop out of school than were adolescents in any other group, with the Minimally Engaged group having the greatest likelihood of dropout. The Highly Engaged, Cognitively Disengaged, and Emotionally Disengaged adolescents had similarly low dropout rates.

College Enrollment Rates

Figure 5 shows that Highly Engaged adolescents were more likely to attend college than were adolescents in any other group, though Moderately Engaged adolescents attended college at relatively high rates as well. By contrast, only about half of the adolescents in the Minimally Engaged, Emotionally Disengaged, and Cognitively Disengaged groups enrolled in college. College enrollment rates for the Minimally Engaged and Cognitively Disengaged groups were similar and lower than enrollment by the Emotionally Disengaged group.

Depression

Figure 6 shows that Emotionally Disengaged and Minimally Engaged adolescents reported higher rates of depression than their peers, with Emotionally Disengaged adolescents reporting the highest rate of depression. Depression rates for the Moderately Engaged and Cognitively Disengaged groups were similar. The Highly Engaged group reported the lowest depression rate.

Table 1
Means, Standard Deviations, and Correlations Among Key Variables

Variable	1	2	3	4	5	6	7	8
1. Behavioral engagement	1.00							
2. Emotional engagement	.56***	1.00						
3. Cognitive engagement	.43***	.48***	1.00					
4. Grade point average	.23***	.28***	.19***	1.00				
5. Educational aspiration	.20***	.30***	.17***	.38***	1.00			
6. Dropout	−.23***	−.19***	−.03	−.21***	−.15**	1.00		
7. College enrollment	.18***	.21***	.10*	.25***	.17***	−.29***	1.00	
8. Depression	−.27***	−.36***	−.11*	−.30***	−.15*	.05	−.10*	1.00
M (*SD*)	3.05 (0.81)	3.29 (0.76)	3.31 (0.77)	3.66 (0.87)	6.26 (1.32)	0.075	0.041	1.47 (0.89)

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

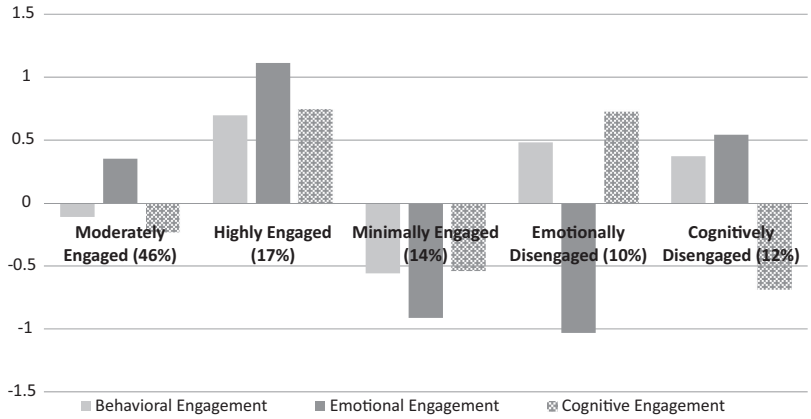

Figure 1. Profiles of school engagement in 9th grade (n = 1,025). All engagement variables were centered by mean (mean for behavioral engagement = 3.05; mean for emotional engagement = 3.27; mean for cognitive engagement = 3.31).

Discussion

In the present study, we used multidimensional and person-centered approaches to identify five profiles of student engagement in school: Highly Engaged, Moderately Engaged, Minimally Engaged, Emotionally Disengaged, and Cognitively Disengaged. These five profile groups differ in their educational and psychological functioning. Our study not only provides empirical evidence supporting the multifaceted nature of school engagement but also demonstrates its utility relative to educational success and mental health. Investigating the multiple dimensions of student engagement simultaneously from a person-centered perspective yields distinct school engagement profiles in our study, thus promising a useful approach for addressing sample heterogeneity and understanding different forms of school engagement and their consequences.

As expected, school engagement did not operate identically for everyone. The latent profile analysis showed that the majority of the sample has a profile that is *consistent* across the three dimensions of school engagement—that is, all three are high (17% Highly Engaged), all three are medium (46% Moderately Engaged), or all three are low (14% Minimally Engaged). Consistent with the self-system model and recent empirical studies (Skinner et al., 2008), the findings suggest that the three dimensions of school engagement are dynamically connected to each other.

In addition to Moderately Engaged, Highly Engaged, and Minimally Engaged, we identified two traditionally neglected groups of adolescents: Emotionally Disengaged (10%) and Cognitively Disengaged (13%). Emotionally Disengaged adolescents exhibited high levels of behavioral and cognitive engagement and therefore were likely to be considered high performing students by their teachers. In contrast to the Highly Engaged or Moderately Engaged adolescents, however, the Emotionally Disengaged youths had the lowest level of emotional engagement and the highest risk for mental health problems. In terms of stage-environment fit theory, this is the group of students who fit least well into the school context (Eccles et al., 1993). They have the cognitive skills to do well in school and apparently feel they should attend school but do not like being there. This places Emotionally Disengaged youths at the greatest risk for mental health problems and dissuades them from entering college.

Interestingly, the adolescents classified as Cognitively Disengaged, who exhibited the lowest level of cognitive engagement yet still reported relatively high behavioral and emotional engagement, had better mental health than the Emotionally Disengaged students, even though they were doing worse academically. This pattern is consistent with stage-environment fit theory in that these

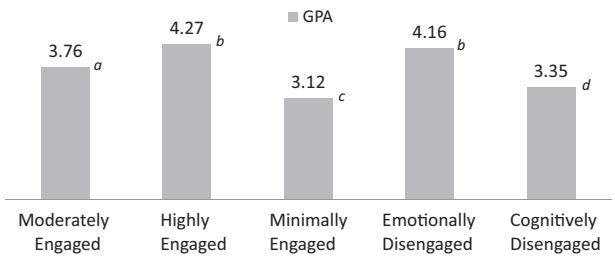

Figure 2. Changes in academic achievement by student engagement profile. $F(8, 1015) = 194.13$, $p < .001$; the analytic model controlled for gender, ethnicity, socioeconomic status, and prior grade point average (GPA) at 9th grade; means having the same superscript are not significantly different at the $p < .05$ level.

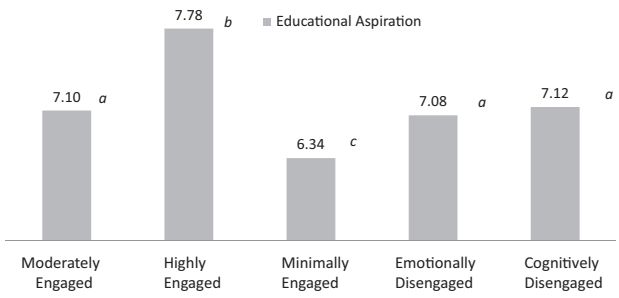

Figure 3. Changes in educational aspiration by student engagement profile. $F(8, 1004) = 97.35$, $p < .001$; the analytic model controlled for gender, ethnicity, socioeconomic status, and prior educational aspiration and grade point average at 9th grade; means having the same superscript are not significantly different at the $p < .05$ level.

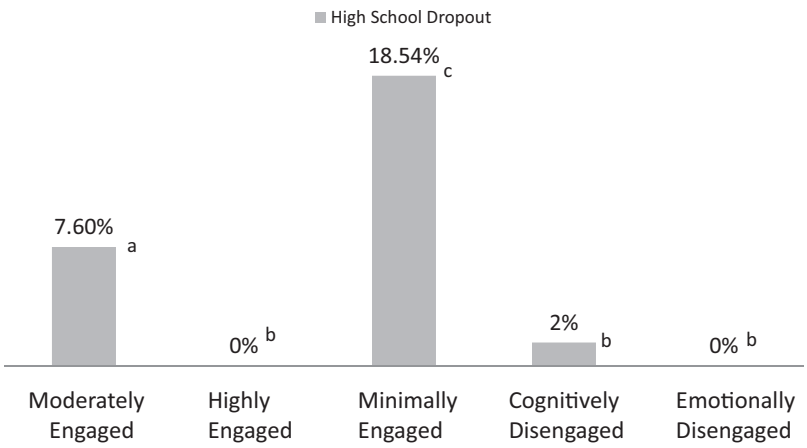

Figure 4. School dropout rate by student engagement profile. $\chi^2(8, N = 993) = 23.15$, $p < .01$; the analytic model controlled for gender, ethnicity, socioeconomic status, and prior grade point average at 9th grade; means having the same superscript are not significantly different at the $p < .05$ level.

youths were behaviorally and emotionally engaged at school and thus may have found a way to fit into the school context (Eccles & Midgley, 1989; Eccles et al., 1993). They were academically at risk but not emotionally at risk. Unfortunately, this type of adolescent may be overlooked by teachers even though they are at risk for academic failure precisely because they are doing well socioemotionally and are not causing discipline problems. However, it is noteworthy that behavioral disengagement usually results from an interaction between emotional discomfort and cognitive disengagement (Skinner et al., 2009). Dropping out of school for many students is not an instantaneous event; rather, it is a cumulative process within which the student becomes emotionally and cognitively disengaged from school (Finn, 1989). Thus, early identification and intervention for the two groups of students (Emotionally Disengaged and Cognitively Disengaged) is needed before they begin a downward spiral of school disengagement leading to problem behaviors and school dropout.

The Minimally Engaged students presented the highest dropout risk. Although we found behavioral disengagement to be a strong predictor of dropout, it appears that dropout may be more of a combined function between behavioral and emotional engagement rather than behavioral engagement alone. Consistent with the self-system model (Skinner et al., 2009), truancy, absenteeism, and delinquency are all precursors to alienation from school (Janosz, LeBlanc, Boulerice, & Tremblay, 1997; Newcomb, Abbott, & Catalano, 2002). The presence of behavioral engagement was not sufficient to ensure adequate academic success and mental health. Adolescents who have higher behavioral and cognitive engagement are more likely to achieve a high GPA than adolescents with either low behavioral engagement or low cognitive engagement. Adolescents who fell into the groups with high behavioral and cognitive engagement (i.e., the Highly Engaged and Emotionally Disengaged groups) differed in terms of whether they experienced high emotional engagement, and this profile difference was associated with similar GPA levels but different levels of educational aspiration and subsequent college enrollment. As stage-environment fit theory suggests, although behavioral and cognitive engagement are important determinants of academic achievement in high school, continued educational success appears to also depend substantially on feeling emotionally connected to the learning environment.

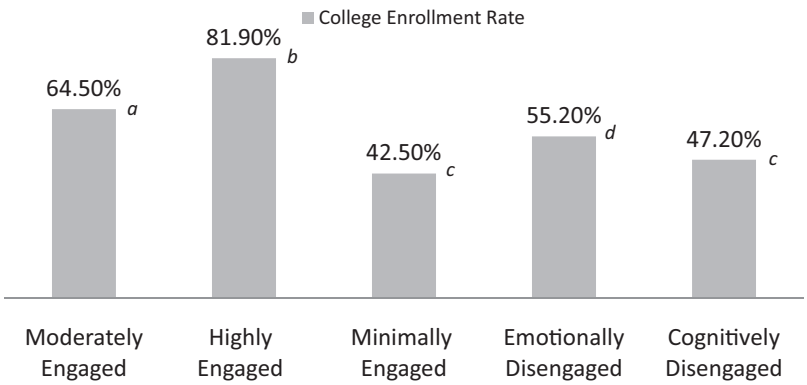

Figure 5. College enrollment rate by student engagement profile. $\chi^2(8, N = 978) = 57.78$, $p < .05$; the analytic model controlled for gender, ethnicity, socioeconomic status, and prior grade point average at 9th grade; means having the same superscript are not significantly different at the $p < .05$ level.

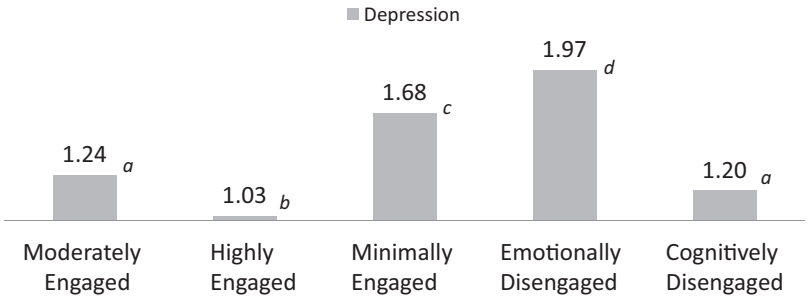

Figure 6. Changes in mental health by student engagement profile. $F(8, 1231) = 157.34$, $p < .001$; the analytic model controlled for gender, ethnicity, socioeconomic status, and prior depression at 9th grade; means having the same superscript are not significantly different at the $p < .05$ level.

Indeed, although high behavioral and cognitive engagement may be sufficient in setting the stage for academic achievement, a combination of high behavioral, emotional, and cognitive engagement appears to produce the highest likelihood of attending college (Eccles, 2009). Those adolescents in the group with higher-than-average school engagement across all three dimensions (Highly Engaged) had the highest college enrollment rates, perhaps because they are most identified and comfortable with school as a social context. In addition to good behavior and cognitive engagement in school, feelings of interest, acceptance, and enjoyment with school may be required in motivating adolescents to pursue a post-high school degree (Wang & Eccles, 2012b). The Highly Engaged adolescents also consistently had the highest academic achievement, educational aspirations, and college enrollment rates, and they had the lowest depression and dropouts rates, supporting the importance of multiple dimensions of school engagement for optimal academic success and mental health (Li & Lerner, 2011).

Limitations and Strengths

This study is limited in some ways. First, all data were obtained from students in a single county on the east coast of the United States. Thus, the generalizability of the findings is not known, and more research is needed to investigate whether these results will replicate when using other samples. Second, the study relies primarily on adolescent self-report measures of school engagement. Future studies should employ multi-method and multi-informant methods to obtain more diverse and comprehensive information about students' school engagement. Finally, although examining the processes linked to student engagement or disengagement was beyond the scope of the current study, an important direction for future research is to investigate the contextual and psychological factors that lead to different student engagement profiles identified in this study.

Despite these limitations, this study has several important strengths. First, although the data were collected from a single county, the adolescents were diverse in terms of family socioeconomic background and ethnicity. This study was purposefully conducted in a county that was populated with African American and European American families who were as comparable as possible in terms of their SES in order to be able to resolve confounds of SES and racial/ethnic group membership. Interestingly, although we found mean-level differences of behavioral, emotional, and cognitive engagement between the different genders, ethnicities, and SES backgrounds (e.g., girls and students from high SES backgrounds were more behaviorally, emotionally, and cognitively engaged), the five student engagement profiles themselves did not differ by gender, ethnicity, and SES (Wang & Huguley, 2012; Wang et al., 2011). The findings suggest that generalizing mean-level individual differences in school engagement to the various distinct student patterns may not be appropriate and highlight the value and importance of using person-centered approaches. Second, the study expands on the multidimensionality of school engagement by using person-centered methods and investigating a variety of developmental outcomes. We provide a relatively comprehensive description of how different dimensions of school engagement can be configured differently in different adolescents and, further, how adolescents characterized by different school engagement profiles vary in their academic achievement, educational attainment, and mental health. Future studies should continue to use person-centered approaches to examine more detailed profiles of school engagement as well as the influence of multiple contextual antecedents on the school engagement profiles and longer-term educational and occupational outcomes.

Implications for Intervention

Developing our empirical knowledge of student engagement will enable us to pursue appropriate avenues for intervention. Improving school attendance and classroom behavior, liking of school, and willingness to learn represents a promising focus and objective for programs that aim to enhance adolescent educational success and mental health. In enhancing awareness of the nature and profiles of student engagement, this study underscores the need for developing tailored prevention and intervention approaches for both students at risk and students in general. The results highlight the need to intervene with students not typically identified as at-risk by teachers, including adolescents in the emotionally disengaged and cognitively disengaged groups. Fostering the school engagement of these at-risk students will in turn promote their academic achievement and enhance their emotional well-being. In contrast, given that the vast majority of students fall into high, medium, and

low "overall" engagement groups, most students will benefit from interventions that promote all three dimensions of engagement.

However, a single prevention strategy may not be sufficient to address the numerous subtypes of psychological development during adolescence. For example, the appropriate intervention strategies for students who are poorly behaved but love going to school are likely to be different from the strategies for those who conform to classroom rules and meet academic requirements but who actually dislike going to school. Thus, rather than trying to design a one-size-fits-all intervention based on presumed average effects which apply equally to everyone in the general population, we can use information about subgroup-specific effects to design this-approach-fits-this-profile interventions (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). In turn, we will ensure that every individual in each subgroup is being targeted equally and appropriately. Prevention efforts that foster school engagement will thus need to integrate distinct strategies that address students' behavioral, emotional, and cognitive needs.

References

Appleton, J. J., Christenson, S. L., Kim, D., & Reschly, A. L. (2006). Measuring cognitive and psychological engagement: Validation of the Student Engagement Instrument. *Journal of School Psychology, 44,* 427–445. doi:10.1016/j.jsp.2006.04.002

Archambault, I., Janosz, M., Fallu, J., & Pagani, L. S. (2009). Student engagement and its relationships with early high school dropout. *Journal of Adolescence, 32,* 651–670. doi:10.1016/j.adolescence.2008.06.007

Baraldi, A. N., & Enders, C. K. (2010). An introduction to modern missing data analyses. *Journal of School Psychology, 48,* 5–37.

Bergman, L. R. (2001). A person approach in research on adolescence: Some methodological challenges. *Journal of Adolescent Research, 16,* 28–53.

Bergman, L. R., & Andersson, H. (2010). The person and the variable in developmental psychology. *Zeitschrift für Psychologie/Journal of Psychology, 218,* 155–165.

Bergman, L. R., Magnusson, D., & El-Khouri, B. M. (2003). *Studying individual development in an interindividual context: A person-oriented approach*. Mahwah, NJ: Erlbaum.

Bergman, L. R., von Eye, A., & Magnusson, D. (2006). Person-oriented research strategies in developmental psychopathology. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology* (2nd ed., pp. 850–888). London, United Kingdom: Wiley.

Burchinal, M. R., Roberts, J. E., Zeisel, S. A., & Rowley, S. J. (2008). Social risk and protective factors for African American children's academic achievement and adjustment during the transition to middle school. *Developmental Psychology, 44,* 286–292.

Connell, J. P. (1990). Context, self, and action: A motivational analysis of self-system processes across the life-span. In D. Cicchetti (Ed.), *The self in transition: From infancy to childhood* (pp. 61–97). Chicago, IL: University of Chicago Press.

Connell, J. P., & Wellborn, J. G. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-system processes. In M. R. Gunnar & L. A. Sroufe (Eds.), *Self processes in development: Minnesota Symposium on Child Psychology* (Vol. 23, pp. 43–77). Chicago, IL: University of Chicago Press.

Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. New York, NY: Basic Books.

Deci, E., & Ryan, R. M. (2000). What is the self in self-directed learning? Findings from recent motivational research. In G. Staka (Ed.), *Conceptions of self-directed learning: Theoretical and conceptual considerations* (pp. 75–92). Münster, Germany: Waxmann.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based University interventions. *Child Development, 82,* 405–432. doi:10.1111/j.1467-8624.2010.01564.x

Eccles, J. S. (2009). Who am I and what am I going to do with my life? Personal and collective identities as motivators of action. *Educational Psychologist, 44,* 78–89.

Eccles, J. S., Lord, S., & Midgley, C. (1991). What are we doing to early adolescents? The impacts of educational contexts on early adolescents. *American Journal of Education, 99,* 521–542.

Eccles, J. S., Lord, S., Roeser, R. W., Barber, B. L., & Jozefowicz, D. M. (1997). The association of school transitions in early adolescence with developmental trajectories through high school. In J. Schulenberg, J. I. Maggs, & K. Hurrelmann (Eds.), *Health risks and developmental transitions during adolescence* (pp. 283–321). New York, NY: Cambridge University Press.

Eccles, J., & Midgley, C. (1989). Stage/environment fit: Developmentally appropriate classrooms for young adolescents. In R. Ames & C. Ames (Eds.), *Research on motivation and education: Goals and cognitions* (Vol. 3, pp. 139–186). New York, NY: Academic Press.

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & MacIver, D. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist, 48,* 90–101. doi:10.1037/0003-066X.48.2.90

Eccles, J. S., & Roeser, R. W. (2011). Schools as developmental context during adolescence. *Journal of Research on Adolescence, 21,* 225–241.

Eccles, J. S., & Wang, M. T. (2012). So what is student engagement anyway? Commentary on Section I. In S. Christenson, A. L. Reschy, & C. Wylie (Eds.), *Handbook of research on student engagement*. New York, NY: Springer.

Elliot, A. J., & Dweck, C. S. (2005). Competence and motivation: Competence as the core of achievement motivation. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 3–12). New York, NY: Guilford.

Elliott, D. S., Huizinga, D., & Menard, S. (1989). *Multiple youth problem: Delinquency, substance, and mental health problems*. New York, NY: Springer-Verlag.

Finn, J. D. (1989). Withdrawing from school. *Review of Educational Research, 59,* 117–142.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 74,* 59–109. doi:10.3102/00346543074001059

Furrer, C., & Skinner, E. (2003). Sense of relatedness as a factor in children's academic engagement and performance. *Journal of Educational Psychology, 95,* 148–162.

Gottfredson, G. (1984). *Effective School Battery*. Odessa, FL: Psychological Assessment Resources.

Grant, J. D., Scherrer, J. F., Neuman, R. J., Todorov, A. A., Price, R. K., & Bucholz, K. K. (2006). A comparison of the latent class structure of cannabis problems among adult men and women who have used cannabis repeatedly. *Addiction, 101,* 1133–1142. doi:10.1111/j.1360-0443.2006.01463.x

Hawkins, J. D., Guo, J., Hill, K. G., Battin-Pearson, S., & Abbott, R. D. (2001). Long-term effects of the Seattle Social Development Intervention on school bonding trajectories. *Applied Developmental Science, 5,* 225–236. doi:10.1207/S1532480XADS0504_04

Henry, K. L., & Muthén, B. (2010). Multilevel latent class analysis: An application of adolescent smoking typologies with individual and con-

textual predictor. *Structural Equation Modeling, 17,* 193–215. doi:10.1080/10705511003659342

Janosz, M., LeBlanc, M., Boulerice, B., & Tremblay, R. E. (1997). Disentangling the weight of school dropout predictors: A test on two longitudinal samples. *Journal of Youth and Adolescence, 26,* 733–762. doi:10.1023/A:1022300826371

Jimerson, S. R., Campos, E., & Greif, J. L. (2003). Toward an understanding of definitions and measures of school engagement and related terms. *California School Psychologist, 8,* 7–27.

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York, NY: Guilford Press.

Kovacs, M. (1992). *Children's Depression Inventory manual*. North Tonawanda, NY: Multi-Health Systems.

Li, Y., & Lerner, R. M. (2011). Developmental trajectories of school engagement across adolescence: Implications for academic achievement, substance use, depression, and delinquency. *Developmental Psychology, 47,* 233–247. doi:10.1037/a0021307

Little, R. J. A., & Rubin, D. B. (1987). *Statistical analysis with missing data*. New York, NY: Wiley.

Maddox, S. J., & Prinz, R. J. (2003). School bonding in children and adolescents: Conceptualization, assessment, and associated variables. *Clinical Child and Family Psychology Review, 6,* 31–49. doi:10.1023/A:1022214022478

Marks, H. M. (2000). Student engagement in instructional activity: Patterns in elementary, middle, and high school years. *American Educational Research Journal, 37,* 153–184.

Miller, D. C., & Bymes, J. P. (2001). Adolescents' decision making in social situations: A self-regulation perspective. *Journal of Applied Developmental Psychology, 22,* 237–256. doi:10.1016/S0193-3973(01)00082-X

Miserandino, M. (1996). Children who do well in school: Individual differences in perceived competence and autonomy in above-average children. *Journal of Educational Psychology, 88,* 203–214.

Muthén, B. (2008). Latent variable hybrids: Overview of old and new models. In G. R. Hancock & K. M. Samuelson (Eds.), *Advances in latent variable mixture models* (pp. 1–24). Charlotte, NC: Information Age Publishing.

Muthén, B., & Muthén, L. K. (2000). Integrating person-centered and variable-centered analyses: Growth mixture modeling with latent trajectory classes. *Alcoholism: Clinical and Experimental Research, 24,* 882–891. doi:10.1111/j.1530-0277.2000.tb02070.x

Muthén, L. K., & Muthén, B. O. (2004). *Mplus user's guide* (4th ed.). Los Angeles, CA: Muthén & Muthén.

National Assessment of Educational Progress. (2009). *Dropout prevention services and programs in public school districts*. Washington, DC: Institute of Education Sciences, U.S. Department of Education.

National Research Council and Institute of Medicine. (2004). *Engaging schools: Fostering high school students' motivation to learn*. Washington, DC: National Academy Press.

Newcomb, M. D., Abbott, R. D., & Catalano, R. F. (2002). Mediational and deviance theories of late high school failure: Process roles of structural strains, academic competence, and general versus specific problem behavior. *Journal of Counseling Psychology, 49,* 172–186. doi:10.1037/0022-0167.49.2.172

Osterman, K. F. (2000). Students' need for belonging in the school community. *Review of Educational Research, 70,* 323–367.

Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 452–502). New York, NY: Academic Press.

Richters, J. E. (1997). The Hubble hypothesis and the developmentalist's dilemma. *Development and Psychopathology, 9,* 193–229. doi:10.1017/S0954579497002022

Simons-Morton, B., & Chen, R. (2009). Peer and parent influences on school engagement among early adolescents. *Youth & Society, 41,* 3–25. doi:10.1177/0044118X09334861

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effect of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85,* 571–581. doi:10.1037/0022-0663.85.4.571

Skinner, E. A., Furrer, C., Marchand, G., & Kindermann, T. (2008). Engagement and disaffection in the classroom: Part of a larger motivational dynamic? *Journal of Educational Psychology, 100,* 765–781. doi:10.1037/a0012840

Skinner, E. A., Kindermann, T. A., Connell, J. P., & Wellborn, J. G. (2009). Engagement and disaffection as organizational constructs in the dynamics of motivational development. In K. Wentzel & A. Wigfield (Eds.), *Handbook of motivation in school* (pp. 223–245). Mahwah, NJ: Erlbaum.

Skinner, E. A., & Wellborn, J. G. (1994). Coping during childhood and adolescence: A motivational perspective. In D. Featherman, R. Lerner, & M. Perlmutter (Eds.), *Life-span development and behavior* (Vol. 12, pp. 91–133). Hillsdale, NJ: Erlbaum.

Urdan, T. (1997). Achievement goal theory: Past results, future directions. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 10, pp. 99–141). Greenwich, CT: JAI Press.

Voelkl, K. E. (1997). Identification with school. *American Journal of Education, 105,* 294–318. doi:10.1086/444158

Wang, M.-T. (2009). School support for adolescents' behavioral and psychological adjustment: Testing the mediating effect of social competence. *School Psychology Quarterly, 24,* 240–251. doi:10.1037/a0017999

Wang, M.-T., Brinkworth, M. E., & Eccles, J. S. (2012). The moderation effect of teacher–student relationship on the association between adolescents' self-regulation ability, family conflict, and developmental problems. *Developmental Psychology*. Advance online publication.

Wang, M.-T., & Dishion, T. J. (2012). The trajectories of adolescents' perceptions of school climate, deviant peer affiliation, and behavioral problems during the middle school years. *Journal of Research on Adolescence, 22,* 40–53. doi:10.1111/j.1532-7795.2011.00763.x

Wang, M.-T., & Eccles, J. S. (2012a). Adolescent behavioral, emotional, and cognitive engagement trajectories in school and their differential relations to educational success. *Journal of Research on Adolescence, 22,* 31–39. doi:10.1111/j.1532-7795.2011.00753.x

Wang, M.-T., & Eccles, J. S. (2012b). Social support matters: Longitudinal effects of social support on three dimensions of school engagement from middle to high school. *Child Development, 83,* 877–895. doi:10.1111/j.1467-8624.2012.01745.x

Wang, M.-T., & Holcombe, R. (2010). Adolescents' perceptions of classroom environment, school engagement, and academic achievement. *American Educational Research Journal, 47,* 633–662. doi:10.3102/0002831209361209

Wang, M.-T., & Huguley, J. (2012). Parental racial socialization as a moderator of the effects of racial discrimination on educational success among African American adolescents. *Child Development*. Advance online publication. doi:10.1111/j.1467-8624.2012.01808.x

Wang, M.-T., Selman, R. L., Dishion, T. J., & Stormshak, E. A. (2010). A Tobit regression analysis of the covariation between middle school students' perceived school climate and behavioral problems. *Journal of Research on Adolescence, 20,* 274–286. doi:10.1111/j.1532-7795.2010.00648.x

Wang, M.-T., Willett, J. B., & Eccles, J. S. (2011). The assessment of school engagement: Examining dimensionality and measurement invariance across gender and race/ethnicity. *Journal of School Psychology, 49,* 465–480. doi:10.1016/j.jsp.2011.04.001

Wentzel, K. R., Battle, A., Russell, S. L., & Looney, L. B. (2010). Social supports from teachers and peers as predictors of academic and social motivation. *Contemporary Educational Psychology, 35,* 193–202.

Wigfield, A., Eccles, J. S., Schiefele, U., Roeser, R., & Davis-Kean, P. (2006). Development of achievement motivation. In W. Damon (Series Ed.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (6th ed., pp. 933–1002). New York, NY: Wiley.

Zimmerman, B. J. (1989). Models of self-regulated learning and academic achievement. In B. J. Zimmerman & D. Schunk (Eds.), *Self-regulated learning and academic achievement: Theory, research, and practice* (pp. 1–25). doi:10.1007/978-1-4612-3618-4_1

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