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Student Engagement in an Independent Research Project:

The Influence of Cohort Culture

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The research paper is often considered an effective tool for challenging students and engaging them in high-level academic work. Although it is disappearing from many high school curricula, replaced by short essays and creative writing (Fitzhugh, 2004), it remains central to the International Baccalaureate (IB) Diploma Program. Students pursuing the IB diploma must complete an extended essay, which, according to the IB guidelines, should entail approximately 40 hours of work and culminate in a 4,000-word research paper. Essays, which are assessed by trained outside examiners according to established rubrics, are worth up to 3 points toward the 24 points that students must amass to earn the IB diploma.

In contrast to most school assignments, the extended essay affords students considerable choice. Students choose their topics from among 24 approved subject areas, ranging from mathematics to music, from peace and conflict studies to business and organization. Students also choose individual faculty members to act as their supervisors. Perhaps the most important choice students face with respect to the extended essay, however, is when and how to work on the project, because it is generally not

Summary

Student engagement is widely viewed as an important antecedent to learning and achievement; however, research finds that engagement declines sharply as students advance through school. Graduation projects and senior projects have been endorsed by practitioners and researchers for their rigor, content-area depth, and promise to engage students in advanced academic work. This study explores whether or not International Baccalaureate's extended essay realizes this promise and whether its effectiveness as a vehicle for engaging students is influenced by school or programmatic factors. A phenomenon called "cohort culture" helps to explain differences in students' engagement levels. Cohort culture refers to the attitudes, values, and practices that students in a particular group negotiate through interaction with one another and in reaction to the requirements and expectations placed on them by their institutional context. For the students in this study, it was not only the characteristics of the task, the expectations of their teachers, and the features of the program and school that promoted or impeded engagement; it was also their peers' reactions and responses to the assignment. Teachers and administrators who are interested in promoting engagement should consider the ways in which they either reinforce or challenge a cohort's culture: examining the assumptions they make about certain cohorts or classes, how they communicate and convey these understandings to their students, and how these messages may in turn influence student attitudes and behaviors.

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affiliated with a particular class. This decision was described by an IB student as a choice between "just do[ing] the minimum" and "really trying to do a good job with it" (personal interview, May 12, 2005). This article investigates how students navigate that choice within a specific institutional context. Two research questions frame this inquiry:

1. How engaged are students as they work on their extended essays?
2. Do particular school or program features, practices, or policies help to explain students' levels of engagement?

Literature Review: Engagement and the Extended Essay

Engagement: What It Is and Why It Matters

Student engagement has been studied from a variety of perspectives. Sociologists, psychologists, and economists have offered competing operationalizations of the construct in the high school context (e.g., Johnson, Crosnoe, & Elder, 2001; Shernoff, Csikszentmihalyi, Schneider, & Shernoff, 2003; Willms, 2003). Some scholars even propose discipline-specific models of academic engagement, arguing for example that students' engagement in mathematics should be measured differently than their engagement in other subject areas (Kong, Wong, & Lam, 2003).

Despite differences in their definitions, researchers are increasingly viewing engagement as a multidimensional construct, consisting of three distinct factors: an affective or emotional factor; a behavioral factor; and a cognitive factor. These dimensions can be said to constitute the ABCs of engagement. In their review of the literature on school engagement, Fredricks, Blumenfeld, and Paris (2004) argued that these three dimensions pertain to what students feel, do, and think.

Scholars have also reached consensus on two major findings: Engagement is a desirable, but rare, state, particularly for students in the latter years of secondary schooling. Numerous stud-

ies have linked engagement to positive academic outcomes, such as high test scores, good grades, and performance in coursework (Akey, 2006; Marks, 2000). Other scholars have found associations between engagement and the acquisition of new skills (Connell & Wellborn, 1991) and long-term learning and motivation (Newmann, 1992; Shernoff et al., 2003). Furthermore, engagement is said to "contribute to the quality of life of youths, which is important in its own right" (Willms, 2003, p. 56).

Nonetheless, various studies have found that student engagement and related constructs, such as intrinsic motivation to learn or interest in learning, decline sharply as students advance through school (Fredricks & Eccles, 2002; Hidi, 2000; Marks, 1995; Skinner, Furrer, Marchand, & Kindermann, in press). By some estimates, as many as "40 to 60 percent of high school students are chronically disengaged; they are inattentive, exert little effort, do not complete tasks, and claim to be bored. This figure does not include those who already have dropped out" (National Research Council, 2003, p. 18). Even high-achieving students may be going through the motions, "doing school" (Pope, 2001) or "doing the lesson" (Jimenez-Alexandre, Rodriguez, & Duschl, 2000); that is, doing what they need to do to garner high grades without becoming deeply engaged and without actually learning the intended material.

Anecdotal and Empirical Support for the Extended Essay as an Engaging Task

Given the prevalence of senioritis in American schools (Conley, 2001; Kirst, 2001) and the phenomenon of highly motivated students "doing school" (Pope, 2001), one might not expect to find IB seniors engaged in their extended essays; however, anecdotal evidence and engagement theory suggest otherwise. Early reports from teachers and IB officials show that the extended essay was once an effective antidote to senioritis as it engaged students' intellectual interests while preparing them for postsecondary education. The first Director General of the International Baccalaureate Organization (IBO), A. D. C. Peterson (1987), explained that feedback from both students and teachers con-

vinced him of the curricular merit of the extended essay. Teachers, according to Peterson, remarked on how engaged and committed students were when writing their extended essays. In fact, they worried that students concentrated on their extended essays to the detriment of their other studies, particularly their May subject area examinations. Teachers' concerns stimulated a policy shift within the IBO, and the due date for the extended essay was moved from May to March. In an article for *Harvard Educational Review,* guidance counselor Elisabeth Fox (1985) cited internal school surveys and follow-up studies to note the "particular tribute [IB graduates paid] to the value of the extended essay as a rigorous and stimulating preparation for college" (p. 60).

In one of the only systematic, empirical studies of students' experiences with the extended essay, Munro (2003) examined students' performance on the extended essay (the score they received) relative to their motivational orientation. He found that students earning the highest scores on the extended essay claimed to balance "deep" and "achieving" motives for learning; that is, they were equally motivated to increase their knowledge of a topic (a deep motive) and to achieve understanding at a level relative to others (an achieving motive). By contrast, students receiving the lowest scores on their essays claimed to favor deep motives over achieving motives. Although the implications of his work are limited by methodological constraints, such as the use of a single school site and the lack of attention to contextual considerations, the fact that none of the clusters of students he studied indicated a preference for achieving motives over deep motives suggests that all of these students seemed to be cognitively engaged as they worked on their extended essays. With regard to this assignment, they demonstrated a commitment to learning and a willingness to be led by their interests.

Theoretical Support for the Extended Essay as an Engaging Task

In addition to Munro's findings and the claims of IB insiders like Peterson and Fox, the theoretical literature on student moti-

vation and cognition supports the premise that the extended essay is a likely site for student engagement and learning. Connell and Wellborn's (1991) self-systems model of motivational development provides a particularly useful lens for viewing the extended essay. This model suggests that engagement arises from three feelings: autonomy, belonging, and competence. Analyses run by Connell and Wellborn and other scholars who draw on the tradition of self-determination theory demonstrate that students who do not feel a sense of autonomy, a sense of belonging, or a sense of competence are more likely to be disaffected than engaged (Reeve, 2002; Skinner et al., in press). According to the model, three educator-controlled contextual features support students' feelings of autonomy, belonging, and competence. These three contextual elements include autonomy-support, opportunities for involvement or relational support, and structure.

Autonomy-supportive learning environments enable a student to act in accordance with his or her personal goals, values, and interests (Ryan & Deci, 2002). Many motivation and engagement theorists emphasize the importance of enabling students to pursue work that is of personal interest (Covington, 1999; Lepper, Sethi, Dialdin, & Drake, 1997; Marks, 2000). Newmann (1992), for example, argued that engagement is generated by authentic tasks that intellectually involve the student with questions or problems that have relevance beyond the world of the classroom and that interest the student personally. By asking students to perform original research on a topic of interest and significance to them, the extended essay presumably allows students to have an authentic, autonomy-supportive experience.

When teachers create opportunities for interpersonal involvement with students, they are perceived as relationally supportive. This involvement provides students with feelings of belonging (Reeve, 2002; Skinner et al., in press). The extended essay guidelines recommend that supervisors maintain close contact with the candidates and spend a total of between 2 and 3 hours working with the students on their projects (IBO, 1998). Such recommendations encourage involvement between teacher and

student, which in turn usually gives rise to feelings of belonging and engagement.

Academic engagement has also been linked with challenging tasks accompanied by sufficient structure, such as clear expectations and consequences for failure (Akey, 2006; Fredricks et al., 2004). The published guidelines, disciplinary standards, and rubrics that are used to evaluate students' essays demystify expectations, whereas requirements for due dates and word counts supply further challenge and structure. The provision of such structure should build a student's sense of competence, according to the self-systems model, in turn promoting engagement. Students should also feel competent in taking on the assignment because it is embedded in a rigorous college preparatory program that requires extensive writing.

In its design then, the extended essay assignment appears to support the conditions for engagement that have been set by various theorists, particularly those advancing the self-systems model; however, it is possible that some of these conditions may become undermined by the various ways in which school administrators and teachers interpret and implement the assignment. For example, essay supervisors might not share disciplinary standards and rubrics with students, or they might not be available for regular meetings. This study examines the relationship between student engagement and the provisions of structure and support across multiple IB sites.[1]

Additional School and Program Factors That May Influence Student Engagement

Beyond structure and support, other contextual features may impact students' levels of engagement in the project. Some research suggests that school and class size affect student engagement. Smaller classes, which allow more interaction with teachers, have been found to promote involvement and a sense of belonging, both of which are antecedents of engagement. Small schools have also been found to be more likely sites for curricula that emphasize authentic work (Newmann, 1992). However, some researchers

assert that small size, in and of itself, does not necessarily generate student engagement (Darling-Hammond, Ancess, & Ort, 2002).

In addition to school size, the National Research Council's (2003) report, *Engaging Schools,* highlights school location and composition as contextual factors affecting engagement, noting that students in "high-poverty, urban high schools . . . are more likely than others to become disaffected" (p. 15) and conversely, the greater the percentage of "high-SES students in a school, the more individual students are engaged and learning" (p. 118). In a study not reviewed by the National Research Council, Johnson et al. (2001) found that while students reported greater school attachment or belonging in less racially and ethnically diverse schools, the homogeneity or heterogeneity of the student body had no effect on their academic engagement when other school factors, such as size and location, were controlled. Furthermore, contradicting the National Research Council's assertion, they found that the average parental educational level in a school, a proxy for socioeconomic status, makes no difference to engagement outcomes. Because studies exploring the relationship between school composition and engagement have been limited and hampered by confounding variables, more research in this area is needed.

This study seeks to build on previous work on the effects of contextual factors on student engagement in three ways: (a) by testing theories of structure and support that argue that sufficient levels of each undergird engagement; (b) by exploring areas in which prior research on context appears to be inconclusive, such as the effects of student body composition on engagement; and (c) by addressing an important gap in the literature. Most contextual studies of high school students' engagement examine school or classroom contexts; few, if any, use the cohort as the unit of analysis. Although cohorts in high schools are rare (even AP students may not be considered a cohort because they may not take all of their classes together), they are becoming more common, especially as larger schools divide themselves into small learning communities, organized by themes or specialty areas (Fouts, Baker, Brown, & Riley, 2006; Iatarola, Schwartz, Stiefel, & Chellman, 2008).

Certainly, other factors beyond those considered in this study matter to engagement. For example, a student's life circumstances, time commitments, and degree of interest in the topic may affect his or her engagement. However, such individual factors are beyond the scope of this study. Instead, this article focuses on context and the way in which school or programmatic features, practices, and policies shape student engagement.

Methods

This study employs a mixed-methods, multisite, longitudinal design. Quantitative methods enabled systematic comparison across multiple sites, while in-depth qualitative analyses in two case study schools ensured that phenomena and factors relevant to the research questions, which might not have appeared on the survey instruments, could be uncovered and explored. In this way, the design fulfills various research/mixing purposes, including triangulation, complementarity, development, and expansion (Onwuegbuzie & Leech, 2006).

To determine the effects of institutional or programmatic features on student engagement, I selected schools whose IB programs differed from one another along several dimensions, including the size and diversity of the IB cohort and the policies that governed the completion of the extended essay project. I include 8 schools in this study: 6 of these schools constitute a population sample of IB schools in a particular region. The other 2 schools, Woodside and Riverside (all school names are pseudonyms), were selected for me by officials inside the IBO as schools whose IB students consistently fare well on their extended essays and appear to be engaged in the project. I refer to these 2 schools as the "exemplar schools." Demographic data for these schools appears in Table 1.

At each of the 8 schools, I interviewed the IB coordinator in the fall using a semistructured protocol that focused on the implementation of both the IB program and the extended essay at the school. The interviews typically lasted an hour and were

Table 1

Population Sample of IB Schools in Western Region (Plus Two Exemplar Schools From Outside the Region)

School name	Community	Two largest ethnic or racial groups	Free or reduced lunch	Age of program in years	2006 diploma cohort size
Glendale	Urban, Low-income	60% Hispanic 17% White	48%	19	27
Fair Oaks	Urban, Low-income	62% Hispanic 25% White	43%	2	17
Mt. Pleasant	Suburban, Mixed	39% White 34% Hispanic	16%	1	11
Valley	Urban, Low-income	54% Hispanic 30% Asian	54%	1	14
Pine Ridge	Urban	60% White 17% Asian	Private	20+	59
Lake View	Suburban, Affluent	81% White 7% Asian	2%	3	20
Riverside	Suburban, Affluent	44% White 37% Black	0%	14	6
Woodside	Suburban, Mixed	62% White 15% Asian	29%	17	19

Table 2

Survey Participants

	Spring 2005	Fall 2005	Spring 2006
Number of Participants	135	131	140
Gender			
Male	—	46.6%	47.1%
Ethnicity			
European American, White	51.1%	48.5%	40.3%
Asian	26.3%	26.2%	33.1%
Middle Eastern or Indian	—	10.0%	11.5%
Hispanic	7.5%	10.0%	7.2%
African American, Black	3.0%	3.1%	2.9%
Mixed or Other	12.0%	2.3%	5.0%
Language			
English *not* spoken at home	25.4%	31.8%	32.4%
Mother's education			
High school or less	22.2%	27.5%	32.8%
Some college or AA degree	12.6%	7.6%	8.0%
Bachelor's degree	34.1%	32.1%	35.5%
Graduate degree	25.9%	28.3%	21.7%
Academic achievement			
Mostly *A*s in high school	61.5%	58.8%	67.4%
Mostly *B*s in high school	37.8%	40.5%	31.2%

tape-recorded and transcribed. In the spring, when I conducted member-checking sessions at each school to share initial findings and propositions, I also checked with the coordinator to determine the extent to which implementation had unfolded according to his or her plans and whether any new practices or policies had been instituted over the course of the year.

The IB students from the 6 regional schools completed surveys at three distinct time points: in the spring of 2005, in the fall of 2005, and in the spring of 2006, after the completion of IB exams. The students at the exemplar schools completed one survey, at the end of their senior year, in the spring of 2006. Surveys were administered during class time by a trained researcher. Table 2 presents background information on the survey participants.

The surveys contained repeated measures related to students' engagement in their extended essays. All items were adapted

Table 3

Mean Scores on Three Dimensions of Engagement by Clusters

	Cluster 1: Strongly disaffected	Cluster 2: Mildly disaffected	Cluster 3: Purposefully engaged	Cluster 4: Fully engaged
	(*n* = 27)	(*n* = 38)	(*n* = 45)	(*n* = 30)
Affective Mean	2.27	3.70	3.20	5.25
Behavioral Mean	3.27	3.75	5.32	5.31
Cognitive Mean	2.38	4.33	5.10	6.06

from subscales taken from the Intrinsic Motivation Inventory Instrument (McAuley, Duncan, & Tammen, 1989), an instrument that has been used extensively in studies based on self-determination theory, with Likert-type responses ranging from 1–7. The interest and enjoyment subscale (6 items) was used to tap affective engagement; the effort subscale (7 items) was used to measure behavioral engagement; and the value and usefulness subscale (7 items) was used to assess cognitive engagement. Exploratory factor analyses were conducted using principal components analysis as the extraction method and oblimin rotation, as factors were expected to correlate (Kline, 1994). The results identified the expected three subscales as separate and reliable scales that explained 77% of the variance, with Cronbach's alphas ranging from .77 to .95.

The three subscales were then used as criterion variables to group students according to their overall engagement profiles. Employing a clustering-by-cases procedure, I first performed a hierarchical cluster analysis, using Ward's method with Euclidean squared difference. After examining the resultant dendrogram to determine the ideal number of subgroups (Aldenderfer & Blashfield, 1984), I ran a quick cluster analysis, with a four cluster solution, allowing for 10 iterations. The results, which appear in Table 3, distinguished four clusters of students: those who were strongly disaffected (*n* = 27); those who were mildly disaf-

fected (n = 38); those who were purposefully engaged (n = 45); and those who were fully engaged (n = 30).

Together, the survey data and the coordinator interviews provide an overview of student engagement in the extended essay as well as an overview of school-level structure and support mechanisms. In our interviews, I asked the IB coordinators to describe how students are prepared for, introduced to, and supported in completing the extended essay assignment. On the surveys, I asked students to report how frequently they met with their supervisors and how comfortable they felt with them. I also asked them to report on the extended essay policies and practices at their schools, including the use of optional or mandatory due dates; the distribution of rubrics, criteria, and sample essays; and the provision of optional or mandatory extended essay workshops.

To classify the levels of structure and support, I coded the interview transcripts and ran basic descriptive statistics for the relevant portions of the surveys. Based on these data, I developed decision rules for the two contextual pieces of the self-systems model. Using a member-checking strategy, I brought the reduced data to IB students at Mt. Pleasant and asked them to generate their own decision rules for structure and support and to categorize the 8 programs based on those rules. Our work yielded strong agreement. We defined structure according to the number of rules that governed students' experiences with the project, the enforcement of these rules, and the provision of material or resources that would help clarify expectations. We defined support according to the number and quality of opportunities a program offered students to interact with a teacher as they worked on the project. These opportunities included workshops offered by the IB coordinator or a librarian as well as a norm of frequent meetings with supervisors. Students' expressed comfort levels with their supervisors also factored into our determinations of the level of support a school program provided.

To further enhance the validity of findings, I sought more detailed portraits of engagement through the use of in-depth case studies. In selecting the school sites for the case studies, I

followed Yin's (1994) advice to use "replication logic" and chose 2 school sites that matched one another in several regards. The 2 schools, Glendale High School and Fair Oaks High School, were comparable in terms of their urban locations, their size, the demographics of their student body, and their state academic performance ratings. The schools did differ slightly, however, in how the extended essay requirement was implemented and in the age and size of their IB programs. Fortuitously, the Glendale and Fair Oaks cohorts also fell at opposite extremes on all measures of engagement; however, I did not anticipate this result when I selected these 2 sites for my case study.

In each school, I then selected 4 case study students to follow more closely. These students were chosen using purposeful sampling techniques (Patton, 2002, p. 45): I selected 4 students who as a group reflected the racial, ethnic, and socioeconomic makeup; the gender balance; and the disciplinary extended essay preferences in their cohort. Every 2–3 months over the course of their senior year, I interviewed these students, using a semi-structured protocol, with questions aligned to the constructs addressed in the survey. Interviews typically lasted 1 hour and were conducted after school at a location chosen by the student. I supplemented my interview data by corresponding with these students over e-mail and by reading drafts of their extended essays. I also interviewed each student's extended essay supervisor to learn his or her perspective on the student's engagement in the project.

Data analysis proceeded concurrently with data collection and followed iterative stages of data reduction, data display, data comparison, and data integration (Onwuegbuzie & Leech, 2006). For example, during interviews, I asked case study students to elaborate on survey responses and to respond to propositions I developed based on observations, previous interviews, and analysis of the quantitative data. Although I drew on strategies developed in the grounded theory tradition, such as open and axial coding, my analytic approach more closely aligned with the method of analytic induction, because I approached the data collection and analysis stages with initial hunches and expectan-

cies. I pursued these hunches systematically by looking for "negative cases," and I revised them to fit emerging interpretations of the data (Patton, 2002). Overall, I expected that programs that provided high structure and support would promote the greatest student engagement in the extended essay, regardless of their location, size, or composition.

Results

Overall Student Engagement

According to their retrospective self-reports on the third survey, 46% of the 141 students included in this study experienced disengagement in their extended essays; their affective, behavioral, and cognitive engagement scores indicated disaffection. Although the cluster analyses depicted in Table 3 divide this group of students into strongly and mildly disaffected, the means scores for both groups indicate a general lack of engagement with the extended essays. Meanwhile, 53% of the participants managed to experience some form of engagement as they worked on this project. Cluster analyses revealed that the engaged students tended to fall into one of two categories: fully engaged and purposefully engaged. Fully engaged students experienced affective, behavioral, and cognitive engagement. That is, they enjoyed working on their extended essays, they put effort into the project, and they saw the work they were doing as having value and importance. Purposefully engaged students, who made up nearly one third of the participants, experienced behavioral and cognitive, but not affective engagement. They worked hard and saw the work they were doing as valuable and important, but they did not enjoy the experience.

School Differences

Among the 8 IB programs included in this study, I found significant differences in the rates of overall student engagement.

The majority of students in 4 schools' programs were not at all engaged in their extended essay, while in the other 4 schools' programs, the largest shares of students were either purposefully or fully engaged (see Table 4). One of the case study high schools, Glendale, had the smallest percentage of engaged students, while the other case study high school, Fair Oaks, yielded the highest percentage of engaged students.

Table 5 shows that on each of the three dimensions of engagement, Glendale IB students' mean scores consistently ranked lowest or second lowest, while Fair Oaks IB students' mean scores ranked highest or second highest. Furthermore, on each measure of engagement, univariate ANOVA analyses revealed statistically significant differences between the Glendale means and the means of the highest ranking school programs. These differences also held over time, on all three survey administrations and on different measures, including the actual number of hours the students reported working (see Table 5). In other words, although engagement did fluctuate over time, the relative rankings of the school programs on each dimensions of engagement remained quite consistent over the course of the students' work on the assignment.

Factors Responsible for School Differences in Engagement

Institutional and Programmatic Features. Despite the differences in the overall student engagement profiles of the various programs I studied, institutional factors, such as location, overall size, or overall student body composition, did not appear to have direct bearing on student engagement in the extended essay. Of the 3 high-poverty, urban high schools, 2 had engaged cohorts, while the other did not. Although Glendale and Fair Oaks had similar student body compositions, with 60% of the students identifying as Hispanic, their IB students showed disparate patterns of engagement; similarly, although both Lake View and Pine Ridge posted large shares of White students, followed by Asian students, their average students' engagement levels on the extended essay differed markedly.

Table 4

Percent of Students in Each School Program Representing Engagement Clusters

	Glendale	Fair Oaks	Mt. Pleasant	Valley	Pine Ridge	Lake View	Riverside	Woodside
Cluster								
Not at all	81% (22)	7% (1)	64% (7)	24% (4)	62% (18)	31% (5)	66% (4)	21% (4)
Purposeful	7% (2)	53% (8)	18% (2)	24% (4)	21% (6)	56% (9)	17% (1)	68% (13)
Fully	11% (3)	40% (6)	18% (2)	53% (9)	17% (5)	13% (2)	17% (1)	11% (2)
Majority	Not engaged	Engaged	Not engaged	Engaged	Not engaged	Engaged	Not engaged	Engaged

Note. Number in parentheses is the total number of students.

Table 5

Univariate ANOVA Summary Table of School Program Comparisons on Various Engagement Measures

	Glendale	Fair Oaks	Valley	Mt. Pleasant	Pine Ridge	Lakeview	Woodside	Riverside	*F*-values
Measures									
Engagement Spring '06									
Affective	3.18 [b]	4.10 [ab]	4.40 [a]	3.86 [ab]	3.27 [ab]	3.89 [b]	3.10 [b]	3.86 [ab]	$F(7, 133) = 3.25^{**}$
Behavioral	3.75 [b]	5.06 [a]	4.87 [a]	4.38 [ab]	4.31 [ab]	4.84 [a]	5.06 [a]	3.75 [b]	$F(7, 132) = 4.96^{***}$
Cognitive	3.60 [c]	5.73 [a]	5.48 [ab]	4.67 [abc]	4.11 [bc]	4.94 [abc]	4.91 [abc]	3.61 [c]	$F(7, 133) = 6.91^{***}$
Hours worked	22.56 [b]	35.00 [ab]	40.41 [a]	37.73 [ab]	4.13 [ab]	28.43 [ab]	39.79 [a]	30.5 [ab]	$F(7, 126) = 2.27^{*}$
Engagement Fall '05									
Affective	3.17	3.94	3.52	3.49	3.21	3.68			$F(5, 129) = 1.70$
Behavioral	3.30 [c]	5.38 [a]	4.73 [ab]	4.49 [ab]	4.13 [bc]	4.46 [ab]			$F(5, 129) = 8.77^{***}$
Cognitive	4.07 [b]	5.62 [a]	5.16 [ab]	4.80 [ab]	4.58 [ab]	4.79 [ab]			$F(5, 129) = 4.20^{***}$
Expectations Spring '05									
Exp.Usefulness	3.15 [bc]	4.18 [a]	4.08 [ab]	3.09 [bc]	3.60 [abc]	2.95 [c]			$F(5, 131) = 3.87^{**}$
Exp. Effort	3.67 [b]	4.53 [a]	4.69 [a]	4.36 [ab]	3.94 [ab]	4.08 [ab]			$F(5, 131) = 4.34^{***}$
Exp. Hours	4.00 [bc]	4.71 [ab]	5.23 [a]	5.00 [ab]	4.16 [abc]	3.44 [c]			$F(5, 120) = 5.53^{***}$

Note. The superscript letters, a, b, and c, reflect the groupings that emerge when Tukey's post-hoc analysis is conducted. Within each row, a school site differs significantly from the other sites that do not share the same superscript letter. A site does not differ significantly from any other site with which it shares a letter.

$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

		Structure: High	Structure: Low
Support	High	Fair Oaks Mt. Pleasant Riverside	
	Low	Pine Ridge Valley Glendale	Lake View Woodside

Figure 1. **Programmatic structure and support matrix.**

The demographic makeup of the students in the cohort and the size of the cohort also failed to explain the differences among the patterns of engagement evident in each cohort. Among the 4 programs with high student engagement, 2 had racially diverse student cohorts, in which more than one third of the students reported not speaking English in their homes and less than one third self-identified as White. The 2 other programs had more homogenous cohorts. Additionally, in 2 of the programs with engaged students, one third or more of the cohort reported that neither of their parents had completed college, whereas in the other 2 programs with engaged students, at least three quarters of the students reported that both their parents had received Bachelor of Arts degrees or more advanced degrees. The racial diversity of the cohort and the average education levels of the students' parents did not appear to be related to their general engagement levels.

Structure and Support. Even the relative amounts of support and structure each program provided to students as they worked on their extended essays failed to account for the different engagement profiles that emerged. According to the decision rules I established earlier with students from an IB program, 3 programs were classified as high on structure and high on support, 3 as high on structure and low on support, and 2 as low on both (see Figure 1).

No discernible pattern emerged with respect to a program's placement in a particular quadrant and the kind of engagement experienced by most of its students. The majority of IB students at 2 of the schools with high structure and high support reported being "not at all engaged" with their extended essays; however, the third school in this quadrant, Fair Oaks, had the greatest share of fully engaged students. The other 3 schools with high percentages of engaged students offered students markedly different levels of support and 2 offered low levels of structure. Furthermore, although the programs at Fair Oaks and Mt. Pleasant seemed quite comparable in the relative degree of structure and support they offered their students, their students' engagement profiles differed considerably. Such was also the case at Valley and Glendale, where the schools' IB programs occupied the same quadrant, despite significant differences between their students on nearly every measure of engagement.

In summary, the 4 programs with the highest levels of student engagement differed from one another on nearly every programmatic and institutional dimension I considered, including their location, the size of the IB cohort, the parent education levels and the racial diversity of the IB students, and the levels of structure and support provided to students.

Cohort Culture. In the 2 case study schools, interpersonal rather than institutional analyses illuminated a new factor that impinged on student engagement at the group level. This factor might have been present in the other school sites as well, though I did not study it in these contexts. I call this factor "cohort culture" and use it to refer to the attitudes, values, beliefs, and practices that each cohort formulated around learning and schoolwork.

Students in the IB cohorts at Glendale and Fair Oaks differed not only in their overall engagement in the extended essay, with Glendale students significantly less engaged than Fair Oaks students, but also in how they collectively talked about and approached their schoolwork. In the Glendale IB cohort, I identified a *culture of complaint*, as students voiced dissatisfaction with their teachers, their assignments, and their overall academic expe-

rience. In the Fair Oaks IB cohort, by contrast, I found a *culture of commitment* to academic performance and to learning, wherein students spoke appreciatively of the opportunities they were being given to challenge themselves and to grow intellectually.

These attitudes shaped students' perceptions of the extended essay assignment and the way they approached the project. For example, a Glendale student named Kim-Ly recalled how her approach to completing the outline for her extended essay was influenced by her peers' approach: "When the outline was due, like most people, I did it in 10–15 minutes and just was done with it. Not many people really concentrated on it" (personal interview, September 22, 2005). Another Glendale student, Robert, justified the low word count of his essay by saying, "I was influenced by my other classmates who were pretty much around the same mark, so I didn't feel it was a problem" (personal interview, June 11, 2006). He had earlier explained, "Only 5–10% [of my classmates] actually want to do this" (personal interview, December 7, 2005). A classmate, Bill, echoed this evaluation: "A lot of the students don't really want to do [the extended essay] or have it take up a lot of the time 'cause it's not worth so much to them" (personal interview, December 23, 2005). When I asked Kim-Ly what she thought would be the best question to ask students if I really wanted to understand their experiences with the extended essay, she instructed me to "ask questions where they have the opportunity to complain because that's when you can hear a lot of stuff, because most people don't like the extended essay. Most people like to complain about their extended essay" (personal interview, December 20, 2005). In fact, Robert recalled, "The day after you came with the survey, we spent the class talking with [our TOK teacher] about how we didn't want to write the extended essay" (personal interview, November 5, 2005).

The Fair Oaks students saw the assignment differently. One Fair Oaks student, Rachel, explained: "I think, you know, in general, we just sort of realize that there are a lot of skills you get out of it—writing skills. . . . No one really thinks that it's such a waste" (personal interview, November 7, 2005). Another Fair Oaks student, Phillipa, believed that her classmates chose their

topics carefully so that they could "actually do research on it, so that we can make it legitimate and make sure we get something out of it" (personal interview, November 15, 2005). All of the Fair Oaks students I interviewed spoke without prompting about Molly, a classmate who was so passionate about her extended essay topic that she inspired them. Rachel described her as a "genius" and noted that "she really likes her topic" (personal interview, December 28, 2005); Lucinda commented on the amount of effort and time Molly was spending on her research (personal interview, November 8, 2005); Phillipa credited her with doing a "really interesting" project (personal interview, September 19, 2005); and Michael admitted that if he had a chance to do his own extended essay again, he would emulate her approach to research (personal interview, December 20, 2005). In other words, what they saw and heard their peers doing appeared to exert a strong effect on the students' own approaches to and feelings about the extended essay project.

Cohort culture, in these 2 cases, seemed to rest on two critical supports: student leadership and teachers' perceptions of the cohort's personality. In both cohorts, the students I interviewed identified particular students or groups of students who stood out to them because of their attitudes toward learning, toward IB, or toward the extended essay project. At Fair Oaks, this position of leadership was occupied by Molly, the aforementioned valedictorian of the class, whose commitment not only to her extended essay, but also to learning in general, deeply impressed her classmates. At Glendale, Robert, Bill, and Kim-Ly identified a group of students in their cohort who stood out because they hated particular teachers, tried to organize walk-outs of particular classes, and spearheaded the registering of complaints. Bill explained, "Generally we complain among ourselves and then they complain to the teachers. And they're usually the people that are the heads of these complaints, the ones that take more initiative to do something about what's going on" (personal interview, June 1, 2006). He estimated that there were about 10 "heads," some of whom occupied officially sanctioned leadership positions within the school. In both cohorts, the legitimacy accorded

to a student or group of students by their classmates seemed to result in the association of that person or group with the predominant cohort culture. The students in the cohort seemed willing to allow the actions and attitudes of a central figure or set of actors within their group both to shape and to stand for the culture of their cohort.

These identities were then reinforced by teachers, as they communicated their perceptions of the cohort to the students. In our first interview, the Fair Oaks coordinator acknowledged that "each cohort just has a different personality" (personal interview, August 10, 2005). She went on to characterize the 2006 cohort as "much better" than the 2005 cohort. Students in the 2006 cohort were aware of their reputation among teachers as a "smarter class" or "better class" (personal interviews, December 12, 2005; May 30, 2006). As Michael explained:

> I don't know why it is, but everybody in our class is really interested in learning, and I don't even know if that's true with the other classes. All of the teachers keep saying how much better our class is from last year's class, and so I don't know what it is about our class. (personal interview, May 18, 2006)

These messages from teachers may have bolstered the students' confidence and pride and may have inspired them to work harder so as not to disappoint their instructors. Positive group feedback may have been part of a reinforcing cycle or may even have led to a self-fulfilling prophecy.

Likewise, the IB students at Glendale knew that their teachers complained about and voiced frustration with them. In an interview in the winter of her senior year, Kim-Ly mentioned that the IB coordinator "told us that some teachers are complaining about us" (personal interview, December 20, 2005). Whether they lacked positive descriptors or brimmed with negative epithets, teachers' depictions of the 2006 Glendale IB cohort seemed to work hand in hand with this group's image of itself as difficult, outspoken, and strong-willed.

For students in a special program like IB, forming a group identity appears to be an important developmental process. How this process happens may depend not only on the particular exemplars or influence groups that emerge within the class, but also on the cohorts that precede and follow theirs and on the way teachers view and describe these cohorts in relation to each other.

Discussion

The findings presented above raise three important points. First, just as the institutional and programmatic differences between Riverside and Woodside, the 2 exemplar schools, suggest that there is no one right way to implement the extended essay so as to ensure student achievement, the variability among the school programs where engagement levels ran high and the variability among the 3 sites in which students' engagement levels ran low suggest that there is no single easily observable or quantifiable institutional feature or programmatic policy that schools can point to as responsible for the relative engagement or disengagement of their students. In other words, IB officials will not be able to look at a school from the outside and determine whether or not students in that school would find enjoyment and value in certain aspects of the IB curriculum if it were to be implemented. Factors like the location and size of the school and the racial and socioeconomic makeup of the cohort will not make a site any more or less hospitable to student engagement in a project like the extended essay. If engaged students are the goal, then my findings suggest that the extended essay component of the IB program can flourish or flop in very different school sites.

Similarly, the findings show that a wide variety of structure and support practices can yield engagement for different groups of students. It may be that certain practices are more effective with certain groups of students, or it might be that other factors mediate the effects of structure and support on engagement.

One of these mediating factors might be cohort culture: the attitudes, values, beliefs, and practices students negotiate with

respect to their academic charges. The findings demonstrate how, in two school programs, the culture of the cohort to which a student belongs shapes student engagement in the extended essay. Cohort culture is a contextual factor that has yet to be identified in the literature, and as such it raises considerations for engagement theory and identifies avenues for future research.

Conclusion: Implications for Research, Theory, and Practice

This study set out to examine the effects of contextual features on student engagement in the extended essay. Although I initially focused on factors that are beyond the control of students, such as how the project is implemented in their school site, the data drew attention to a factor that students, rather than adults, control. Given the apparent salience of cohort culture to student engagement in the extended essay project, the construct warrants further investigation. Questions abound about cohort culture: how it forms, how it changes over time, and how it intersects with the professional culture of the teachers or the program administrators. Although this study has several limitations, including the relatively small and specialized nature of sample, it does offer preliminary evidence for this phenomenon. Continuing to study the factors that build and erode peer support for learning will further enrich our understanding of how to engage all students in rigorous and sustained academic undertakings, like the extended essay.

The concept of cohort culture is also ripe for future research because much of the research on context focuses on school or classroom factors that students are affected by but supposedly cannot affect, such as school location, organization, size, and climate. Even when students' classroom-level social interactions are examined in relation to engagement, researchers point out that these interactions have been set up, structured, and scaffolded by teachers (Guthrie & Wigfield, 2000). Similarly, both the self-systems model of motivation and self-determination

theory emphasize how the teacher promotes engagement by providing structure, autonomy support, and involvement, which in turn engender feelings of autonomy, belonging, and competence (Connell & Wellborn, 1991; Reeve, 2002; Skinner et al., in press). These theories neglect the effect students may have on one another. Cohort culture, by contrast, puts a premium on students' agency in shaping their individual and collective educational experiences. Because of the attention it draws to group influence, cohort culture adds a new dimension to context, deepening our understanding of the host of environmental factors that shape engagement and suggesting implications for engagement theory.

Cohort culture also suggests new theoretical considerations for work that examines peer influence on engagement and achievement. Cohort culture is distinct from peer group influence or peer culture as it has been traditionally studied in that students in an IB cohort interact as classmates, but not necessarily as friends. Studies of peer groups typically focus on students' social networks, their alliances, friendships, and romantic relationships (Johnson et al., 2001; National Research Council, 2003). Cohorts, by contrast, are defined not by friendship patterns, but by a shared academic experience—by taking the same classes and by working toward the same end such as an IB diploma. Students in both the Glendale and Fair Oaks IB programs described a strong sense of camaraderie within their cohort, but they reported belonging to peer groups outside of IB as well. Suldo, Shaunessy, Michalowski, and Shaffer (2008) similarly found that IB students not only have, but rely on, friends from outside their IB cohort for social support. With its focus on mutual engagement and joint work, a community of practice (Wenger, 1998) lens may prove best-suited for understanding and conceptualizing the concept of cohort culture moving forward.

Ultimately, this study calls for reconceptualizing engagement as a social process. When one goes to the theatre, whether or not one becomes engaged in the production hinges as much on one's fellow audience members as it does on the script, the actors' delivery of the lines, the set design, and even the theatre itself.

Likewise, for the students in this study, it was not only the characteristics of the task, the expectations of their teachers, and the features of the program and school that promoted or impeded engagement; it was also their peers' reactions and responses to the assignment. Paradoxically, even independent work is subject to interpersonal influence. Students working individually and at their own pace researching topics of their own choosing share in a collective experience of negotiating standards, values, and norms of work. This joint work appears to set the stage for their individual work as well as their engagement in it.

Meanwhile teachers and administrators still have important roles to play in fostering engagement. In interviews, coordinators and supervisors frequently drew comparisons between cohorts, using adjectives like smarter, more affable, more open, and better. Teachers also employed negative epithets, including lazy, arrogant, and condescending, to describe IB cohorts. For teachers and administrators interested in promoting engagement, it may be productive to consider the ways in which they can either reinforce or challenge a cohort's culture: examining the assumptions they make about certain cohorts or classes, how they communicate and convey these understandings to their students, and how these messages may in turn influence student attitudes and behaviors. As a large body of literature illustrates, teacher expectations and perceptions of students can influence student behavior and outcomes (Cooper & Good, 1983; Ferguson, 2003; Good & Brophy, 1984; Raudenbush, 1984). It seems reasonable to assume that such influence may operate at collective as well as individual levels; however, further research is needed to examine the specific roles teachers play in the formation and maintenance of a cohort's culture over time.

Certainly, the extended essay is a demanding undertaking. Is it a vehicle for engaging students in rigorous academic work? The answer seems to be that it depends. The good news is that engagement in the extended essay depends less heavily on factors that are often beyond the reach of teachers and administrators, such as school location or cohort composition. The bad news for teachers is that engagement appears to depend more

heavily on factors that they may be able to influence, but still cannot directly control: collective student attitudes and norms. One year's cohort might adopt a stance toward the project that the subsequent year's cohort completely rejects, and teachers are hard-pressed to understand why. In the end, this study raises implications not just for the practice of teachers, program coordinators, and school administrators, but also for the practice of students, for it is their agency and authority, which the literature has for too long neglected, that may just matter most.

References

Akey, T. (2006). *School context, student attitudes, and behavior, and academic achievement.* New York, NY: MDRC.

Aldenderfer, L., & Blashfield, R. (1984). *Cluster analysis*. Newbury Park, CA: Sage

Conley, D. (2001). Rethinking the senior year. *The National Association of Secondary School Principals Bulletin, 85,* 26–41.

Connell, J., & Wellborn, J. (1991). Competence, autonomy, and relatedness: A motivational analysis of self-system processes. In M. R. Gunnar & L. A. Sroufe (Eds.), *Minnesota Symposium on Child Psychology* (Vol. 23, pp. 43–77). Hillsdale, NJ: Erlbaum.

Cooper, H., & Good, T. (1983). *Pygmalion grows up: Studies in the expectation communication process.* New York, NY: Longman.

Covington, M. (1999). Caring about learning. *Educational Psychologist, 34,* 127–136.

Darling-Hammond, L., Ancess, J., & Ort, S. (2002). Reinventing high school: Outcomes of the coalition campus schools project. *American Educational Research Journal, 39,* 639–673.

Ferguson, R. (2003). Teachers' perceptions and expectations and the Black-White test score gap. *Urban Education, 38,* 460–507.

Fitzhugh, W. (2004). Romantic fiction: What passes today for student academic writing. *Education Week, 24*(3), 35.

Fouts, J. T., Baker, D. B., Brown, C. J., & Riley, S. (2006). *Leading the conversion process: Lessons learned and recommendations for converting to small learning communities* (Report prepared for the Bill and Melinda Gates Foundation). Seattle, WA: Fouts and Associates.

Fox, E. (1985). International schools and the International Baccalaureate. *Harvard Educational Review, 55,* 53–68.

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

Fredricks, J. A., & Eccles, J. S. (2002). Children's competence and value beliefs from childhood through adolescence. *Developmental Psychology, 38,* 519–533.

Good, T., & Brophy, J. (1984). *Looking in classrooms* (3rd ed.). New York, NY: Harper & Row.

Guthrie, J., & Wigfield, A. (2000). Engagement and motivation in reading. In M. Kamil, P. Mosenthal, P. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 403–424). Mahwah, NJ: Lawrence Erlbaum.

Hidi, S. (2000). An interest researcher's perspective: The effects of extrinsic and intrinsic factors on motivation. In C. Sansone & J. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation: The search for optimal motivation and performance* (pp. 309–339). San Diego, CA: Academic Press.

Iatarola, P., Schwartz, A., Stiefel, L., & Chellman, C. (2008). Small schools, large districts: Small-school reform and New York City's students. *Teachers College Record, 110,* 1837–1878.

International Baccalaureate Organization. (1998). *The extended essay for first examinations in May 1999*. Geneva, Switzerland: Author.

Jimenez-Alexandre, M., Rodriguez, A., & Duschl, R. (2000). "Doing the lesson" or "Doing science": Argument in high school genetics. *Science Education, 84,* 757–792.

Johnson, M., Crosnoe, R., & Elder, G. (2001). Students' attachment and academic engagement: The role of race and ethnicity. *Sociology of Education, 74,* 318–340.

Kirst, M. (2001). *Overcoming the high school senior slump: New education policies.* Washington, DC: Institute for Educational Leadership and the National Center for Public Policy and Higher Education.

Kline, P. (1994). *An easy guide to factor analysis.* London, England: Routledge.

Kong, Q.-P., Wong, N.-Y., & Lam, C.-C. (2003). Student engagement in mathematics: Development of instrument and validation of construct. *Mathematics Education Research Journal, 15,* 4–21.

Lepper, M., Sethi, S., Dialdin, D., & Drake, M. (1997). Intrinsic and extrinsic motivation: A developmental perspective. In S. Luthar & J. Burack (Eds.), *Developmental psychopathology: Perspectives on adjustment, risk, and disorder* (pp. 23–50). New York, NY: Cambridge University Press.

Marks, H. (1995). *Student engagement in the classrooms of restructuring schools.* Washington, DC: Office of Educational Research and Improvement.

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

McAuley, E., Duncan, T., & Tammen, V. V. (1989). Psychometric properties of the Intrinsic Motivation Inventory in a competitive sport setting: A confirmatory factor analysis. *Research Quarterly for Exercise and Sport, 60,* 48–58.

Munro, J. (2003). The influence of student learning characteristics on progress through the extended essay, a component of the International Baccalaureate Diploma Programme. *Journal of Research in International Education, 2,* 5–24.

National Research Council. (2003). *Engaging schools: Fostering high school students' motivation to learn.* Washington, DC: National Academies Press.

Newmann, F. M. (Ed.). (1992). *Student engagement and achievement in American secondary schools.* New York, NY: Teachers College Press.

Onwuegbuzie, A. J., & Leech, N. L. (2006). Linking research questions to mixed methods data analysis procedures. *The Qualitative Report, 11,* 474–498.

Patton, M. Q. (2002). *Qualitative research and evaluation methods.* Thousand Oaks, CA: Sage.

Peterson, A. D. C. (1987). *Schools across frontiers.* La Salle, IL: Open Court.

Pope, D. (2001). *Doing school: How we are creating a generation of stressed out, materialistic, and miseducated student*s. New Haven, CT: Yale University.

Raudenbush, S. (1984). Magnitude of teacher expectancy effects on pupil IQ as a function of the credibility of expectancy induction: A synthesis of finds from 18 experiments. *Journal of Educational Psychology, 76,* 85–97.

Reeve, J. (2002). Self-determination theory applied to educational settings. In E. Deci & R. Ryan (Eds.), *Handbook on self-determination research* (pp. 183–203). Rochester, NY: The University of Rochester Press.

Ryan, R., & Deci, E. (2002). Overview of self-determination theory: An organismic dialectical perspective. In E. Deci & R. Ryan (Eds.), *Handbook of self-determination research* (pp. 3–33). Rochester, NY: University of Rochester.

Shernoff, D., Csikszentmihalyi, M., Schneider, B., & Shernoff, E. (2003). Student engagement in high school classrooms from the perspective of flow theory. *School Psychology Quarterly, 18,* 158–176.

Skinner, E., Furrer, C., Marchand, G., & Kindermann, T. (in press). Engagement and disaffection in the classroom: Part of a larger motivational dynamic? *Journal of Educational Psychology.*

Suldo, S., Shaunessy, E., Michalowski, J., & Shaffer, E. (2008). Coping strategies of high school students in an International Baccalaureate Program. *Psychology in the School, 45,* 960–977.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity.* Cambridge, England: Cambridge University Press.

Willms, J. D. (2003). *Student engagement at school: A sense of belonging and participation. Results from PISA 2000.* Paris, France: Organization for Economic Co-operation and Development.

Yin, R. K. (1994). *Case study research: Design and methods.* Thousand Oaks, CA: Sage.

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End Notes

1 Autonomy-support is not examined because student choice is intrinsic to the assignment; furthermore, students' perceptions of supervisor support for these personal choices are captured by the involvement or support construct.