

The AP Challenge Program: Advancing Gifted Minority Student Achievement in High School and Beyond

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Advanced Placement (AP) and International Baccalaureate (IB) programs have served as the primary means of meeting the need for gifted education at the high school level (Hertberg-Davis & Callahan, 2008). Access to these high-level programs and success in these programs, however, is limited for minority students because many had not been properly identified as gifted students at a younger age (Gándara, 2004). With restrictive assessments that seek students with high academic performance and/or IQ scores (Figueroa & Ruiz, 1999), many minority students, especially African American and Latino, do not take appropriately challenging classes that prepare them for the rigors of AP courses. While governmental funding and school-level pressure to include minorities has resulted in increased access to AP courses, access will not necessarily lead to high performance in the class or on the culminating AP exam (College Board, 2006; Hertberg-Davis, Callahan, & Kyburg, 2006).

Given a constantly diversifying population, ensuring equitable academic excellence in Advanced Placement courses may require teachers and leaders to modify the AP curriculum or to provide additional supports that will assist minority students in achieving in those settings. The first step in understanding those needs is to understand the motivations that underlie minority student enrollment in AP courses despite possible under-preparation for the courses' demands and other challenges they may face in those settings. The intent of this study, accordingly, is to study the factors that may influence students' motivations for enrolling in AP courses and how these factors may affect student actions. The resulting analysis offers a model that hopefully will help teachers, leaders, and policymakers make useful decisions that will promote and sustain gifted minority student achievement at the high school level and beyond.

Review of the Literature

According to the most recent reports of the College Board (2009), "increasing numbers of African American, Latino, and American Indian students are participating in AP, but these students remain underserved" (p. 4). The gap between the proportion of minority students in high school and the proportion of minority students enrolled in AP classes is highest for African American and American Indian students, but the gap for Hispanic or Latino students is distorted somewhat by enrollment in AP Spanish. While 14 percent of last year's high school graduates were African American, only 8 percent of those taking AP exams were African American, and less than 4 percent of those African Americans taking the exam earned a score of 3 or more (traditionally, 3 is considered a "passing score" as it is most often the score used

by college admissions offices for granting college credit). This implies a need for interventions that will provide the supports that will accommodate the instructional needs of minority students and provide the encouragement that will enhance success (Hertberg-Davis et al., 2006). Consequently, researchers must look into the factors that may influence student motivation and performance in these intensive courses in order to make the appropriate adjustments.

Common theories that focus on student-level characteristics suggest that some minority students are more resilient and are able to succeed despite their challenging backgrounds (Borman, Stringfield, & Rachuba, 1998). There are certain institutional and social factors, however, that may help more students to become resilient. These include school environments that provide incentives to foster investment behaviors in school-related activities (Montgomery & Rossi, 1993; Tinto, 1975), and school personnel who set high academic expectations (parents, teachers, and peers) (Ford, 1996). Some researchers (e.g., Borman et al., 1998) suggest incentives are critical to motivate students to engage academically; minority students will find little drive to persist in school if they perceive low intrinsic or extrinsic rewards for academic achievement. Similarly, high expectations from parents, teachers, and peers are important social factors that motivate minority students to succeed.

At the high school level, AP courses provide the main means to meet the needs of gifted students who are highly motivated to succeed. The popularity of these courses and the motivation to take them has increased substantially over the past decade due to many reasons. From the student perspective, the primary motivators for increased enrollment are the perceived payoffs: Students imagine that they will have increased chances of college admission and that AP courses will prepare them for the rigorous nature of college, as well as their future careers (Hertberg-Davis et al., 2006). Thus, AP courses are an example of an academic environment that fosters the investment behaviors that Montgomery and Rossi (1993) and Tinto (1975) had suggested are necessary for college success. Intrinsic motivators may be that AP courses provide a better fit for gifted students who thrive in a more challenging atmosphere with high-demanding teachers and peers. Minority students may also perceive higher stakes for their enrollment in AP classes than other students, due to a drive to succeed, to disprove racial stereotypes, or to escape a poor environment (Hertberg-Davis et al., 2006). In any case, motivation for these courses is not necessarily tied to an underlying interest in a subject area, but may be tied to some perceived extrinsic or intrinsic benefit (Hertberg-Davis et al., 2006).

Hertberg-Davis et al. (2006) established these findings with qualitative data that comprised observations and interviews with teachers and students. To gain a more complete understanding of the students' beliefs and attitudes, however, Schumann (1996) suggests that attitudes should be disaggregated into three aspects: intensity, centrality, and committed action. This division will allow researchers to separate students' strength and direction of attitudes, which are two distinct properties. The intensity, centrality, and committed action measures, therefore, will differentiate the students' attitudes along the strength continuum. As such, intensity aims to measure respondents' self-reported strength of feeling on a certain issue, centrality measures the importance of an issue, and committed action items verify these attitudes with concrete actions. These distinctions assume that students' attitudes and beliefs have been "crystallized," or have been established prior to measurement, and constitute a reliable measure for survey analysis. Studying these dimensions, therefore, is valuable to researchers because they can provide a complete understanding of the relationship between the presence and importance of a belief and any corresponding overt actions. Accordingly, even if students cite certain factors as motivators for enrollment in AP courses, the extent to which these factors are central and will influence students to act in a specific way may vary among students.

Program Description

To exert influence from the institutional environment, the National Study Group for the Affirmative Development of Academic Ability (NSGADAA) (2004) calls for teachers and leaders to re-conceptualize students' intelligence as a competence that can be developed. Meaningful affirmative development requires a comprehensive approach that combines multiple levels of interventions in the classroom, school, and community. Therefore, interventions must begin with teachers in the classroom, trusting relationships in the school, and supports for pro-academic behavior in the school and larger community. The effects of this multi-level approach should compound so that minority students find themselves in a social context that constantly encourages and rewards high academic achievement.

Given these recommendations, researchers at the University of Virginia have developed and implemented a structured intervention program called the AP Challenge Program (APCP). APCP provides AP students and teachers from three predominantly low-income and high-minority high schools with additional academic and developmental support designed to increase the participation and success of high-potential minority students in AP courses and in college. Current 9th and 10th grade minority students who had intentions of enrolling in at least one AP course in the upcoming school year, had not received a grade below a 'C' in core classes through the third quarter of their 9th or 10th grade year, and/or had been recommended by their counselors or teachers, were invited to participate. These criteria helped to ensure that the program would provide appropriate support systems to the students who needed it most, mainly those who may not have been considered gifted prior to their high school years, but who had exhibited motivation to succeed and, despite educational experiences in low-performing schools, were exhibiting higher achievement than peers in the

same environment. As a result, APCP aimed to select students based on non-intellective abilities and/or specific academic skills that would align more with the United States Department of Education (1993) definition of giftedness ("high performance capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields").

The program provides multi-level interventions by: enhancing teachers' multicultural instructional strategies and ability to differentiate the curriculum by scaffolding and providing engaging learning opportunities in the classroom; providing support structure provisions for students; and training school counselors to create an engaged academic community. Specifically, the support structure provisions for students include a pre-AP and continuing summer residential program at U.Va., achievement seminars with counselors, and an AP Challenge Community website that contains additional student resources for each AP subject.

APCP included all of these components because the literature suggested that minority students often disidentify and disengage from academics when they may feel vulnerable to racial and ethnic stereotyping by teachers and students (Steele, 1997). For example, Shields (1995) suggests that a multicultural approach to teaching can help teachers respond constructively to students' differences rather than ignore them. As a result, if teachers learn to differentiate their instruction to tailor to individual students' needs and incorporate meaningful multicultural content, gifted and underachieving minority students will feel empowered (Ford, 1996). Peer support systems (in the form of the summer residential program and achievement seminars with counselors mentioned above) are also important features that boost academic success. Beitler (2004), for instance, describes a similar successful program where the students had to commit to attend weekly counselor-led group meetings, actively participate in the sessions, and help other struggling members with their coursework. Moreover, the summer residential program was designed in part to foster meaningful relationships between students, and between teachers and students, before the academic year would begin, so that students would feel that they had an ally and a friend in the classroom to mitigate any perception of stereotype threat. The result, hopefully, would be as one student claims: "We are family, friends, educators, motivators" (Beitler, 2004, p.21).

Research Questions

Since all of the selected APCP students had intended to enroll in at least one AP course prior to participation in APCP, they were considered important informants on the factors that motivated them to participate in AP courses and that influenced their prior academic performance:

- What factors motivate the APCP students to enroll in AP courses?
- How are the APCP students' intensity of attitudes, centrality of belief, and committed actions related to one another?

Method

A total of 40 rising 10th (n = 24) and 11th (n = 16) graders took part in this study as part of their participation in the APCP program and the pre-AP summer residential camp at U.Va (21 males and 19 females). Fifty percent (n = 20) of the cohort were African American students, 25% (n = 10) were bi- or multi-racial, 15% (n = 6) were Asian/Pacific Islander, and 10% (n = 4) were Hispanic/Latino.

We used survey methodology to understand participating students' self-perceptions of the factors influencing their academic motivations and performance. According to Schumann (1996), surveys are a useful tool that can measure the three dimensions of students' attitudes: intensity, centrality, and committed action. These distinctions are important because they can provide researchers with the context in which to understand the strength and conviction of students' beliefs. The AP Challenge Student Self-Perceptions Survey, therefore, was designed with these distinctions in mind to triangulate the extent to which the presence of a belief, the importance of a belief, and corresponding actions are related.

To ensure that this survey evidenced validity, several questions were incorporated from a pre-established instrument (Table A1. Student-level Attributes; Student Questionnaire; Cohort 3; Borman et al., 1998, p. 130), while others were created and reviewed by experts in the field of gifted education. The survey was administered to the students at the end of the week-long summer residential program; hence the data reflect their motivations to enroll in AP after the initial stages of the intervention.

The AP Challenge Student Self-Perceptions Survey was designed as a 20-minute questionnaire to see how students felt about their learning experiences both before and after their week at U.Va. The survey was completely confidential, as all students were assigned a unique ID number and only the researcher who assigned the original numbers would ever have the ability to match names to numbers. Students were ensured that their grades in the AP courses they were to take in the coming academic year would not be affected in any way by their responses on the survey.

The survey comprised 38 items that were divided into four parts: Part I asked students to answer questions about their learning experiences prior to their week at U.Va., Part II asked students to answer questions about their experiences during their week at U.Va., Part III asked students about their general reactions and expectations as a result of the pre-AP experience at U.Va., and Part IV asked for the student demographic data. This allowed researchers to make preliminary judgments on whether the pre-AP summer residential program achieved its intended goals when compared to the students' assessments of their experiences prior to their participation in APCP. This study, however, centered on Part III of the survey, as it focused directly on the students' beliefs after the initial stages of the APCP intervention. Items from Part III included in this study are:

- What are your motivations for enrolling AP classes? Please follow these instructions carefully: First, check all that apply. Next, rank the motivations you checked. Do not rank motivations that were not checked.

- Advice from my counselor
- Advice from my friends
- Chance to be with people who learned like I do
- College credit
- Courses available at my high school
- Deeper exploration of content
- Desire to fight racial academic stereotypes
- Increase my chances of admission to college
- More challenging curriculum
- Opportunity to graduate college earlier
- Parental recommendation
- Things I heard about the teacher
- Potential for weighted grades
- Potential practical experiences such as internships
- Preparation for college work
- Save money on tuition
- School recommendation
- Teachers treat you as adults

- What factors contribute to your determination to succeed academically? First, check all that apply. Next, rank the motivations you checked. Do not rank motivations that were not checked.

- Classmates
- Community members
- Family
- Friends
- Mentors/guidance counselors
- Personal
- Teachers

- What do you hope to do immediately after high school?

- Enroll in a four-year college that is the best fit for you, no matter where it is
- Enroll in a local four-year college
- Take classes at a community college
- Enroll in a vocational or technical school (e.g., cosmetology school or mechanic school)
- Go into the military
- Other: _____

- In contrast, what do you expect to do immediately after high school?

- Enroll in a four-year college that is the best fit for you, no matter where it is
- Enroll in a local four-year college
- Take classes at a community college
- Enroll in a vocational or technical school (e.g., cosmetology school or mechanic school)
- Go into the military
- Other: _____

- Knowing the college application process is complex, how knowledgeable do you feel about the following steps in that process?

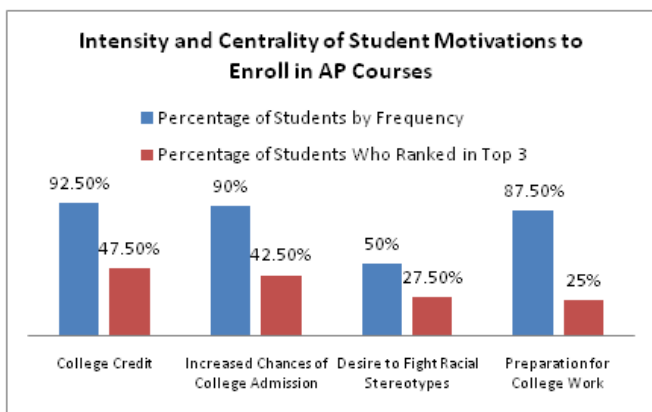
- Enrolling in the most challenging high school coursework to be more appealing to colleges
- SAT testing timeline and deadlines
- College application timeline and deadlines
- Financial application timeline and deadlines

Results

Intensity and Centrality of Beliefs

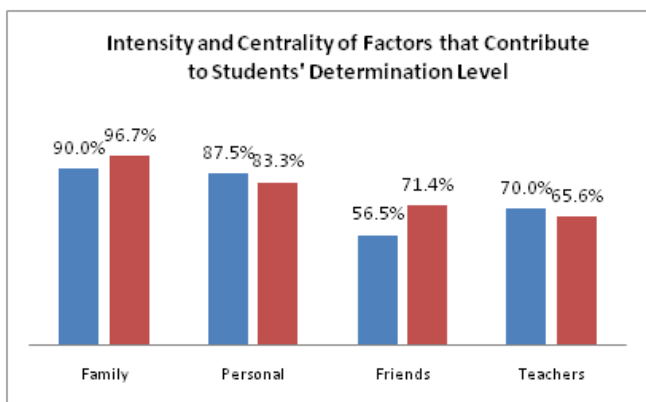
To understand why students chose to enroll in AP classes, one survey question asked students to check and rank the factors that influenced this decision. The top three motivations for enrolling in AP classes, as indicated by the frequency of response on a checklist question (used here as a measure of intensity), were: college credit (92.5%), increased chances of college admission (90%), and preparation for college work (87.5%). When asked to rank these same factors, however, a different pattern of responses arose. The top four factors by the percentage of students who ranked them in the top three were: college credit (47.5%), increased chances of college admission (42.5%), desire to fight racial stereotypes (27.5%), and preparation for college work (25%). Interestingly, although 87.5% of students had indicated that preparation for college work was an important factor, there was a significant difference ($p < .01$) between males and females for this question, where the mean rank for males was ($= 6.36$) and for females was ($= 3.6$) (see Figure 1.1).

Figure 1.1



To understand the factors that influence student performance, a related question asked students to check and rank the factors that contributed to their determination to succeed academically. The top three factors by frequency are: family (90%), personal (87.5%), and teachers (70%). When ranked, a slightly different pattern emerged. The top three factors by the percentage of students who ranked them in the top three were: family (96.7%), personal (83.3%), and friends (71.4%) (see Figure 1.2).

Figure 1.2

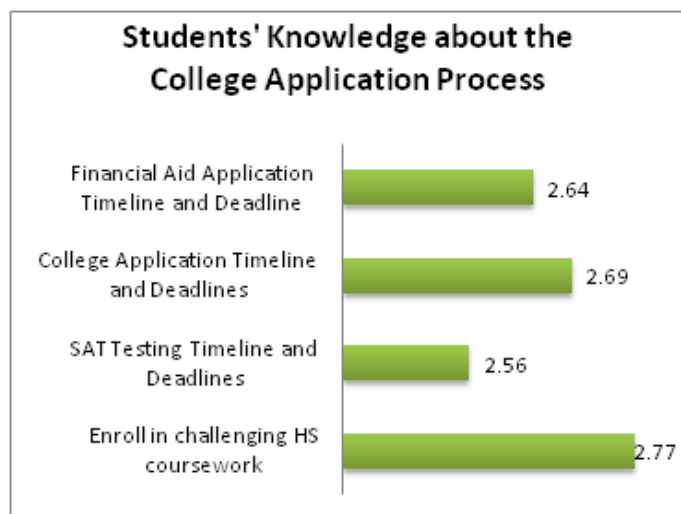


Committed Action

While the intensity and centrality measures are useful in evaluating the presence and importance of students' beliefs, they do not make any claims on whether students have actually made conscious effort and action according to their beliefs. Since the results above state that the predominant motivating factor for enrollment in AP courses centers around the students' expectations to attend college, questions about college attendance and the application process were asked as an index of the students' committed action. Since one of APCP's primary goals is to encourage students to consider and apply to four-year colleges that best fit their needs, regardless of proximity to home, two survey items asked students to consider what they hope and expect to do after high school. The majority of students (79%; $n = 31$) said they hoped to go to a four year college that is their best fit, regardless of its location; 10% ($n = 4$) said a local four-year college; 3% ($n = 1$) said community college; and 8% ($n = 3$) said other (e.g., vocational school or military). Contrasted to what students expect to do after high school, the numbers decreased slightly: 72% ($n = 28$) for a best-fit four year college; 13% ($n = 5$) for a local four-year college; 7.5% ($n = 3$) for a community college; and 7.5% ($n = 3$) other.

A third item asked: "Knowing that the college application process is complex, how knowledgeable do you feel about the following steps in that process?" This question was used to gauge the extent to which students have made active efforts to familiarize themselves with the different steps involved in applying to college. The answers were on a 4-point scale (extremely = 3, somewhat = 2, not very = 1, and not at all = 0). Not surprisingly, the most immediate action (enrolling in challenging high school coursework) had the highest mean ($= 2.77$), but was followed closely by perceived knowledge about college application timelines and deadlines ($= 2.69$) and financial aid application timelines and deadlines ($= 2.64$). Reported familiarity with SAT testing timelines and deadlines received the lowest rating. A summary of these responses can be found in Figure 1.3.

Figure 1.3



Discussion

Intensity and Centrality of Beliefs

For the questions that asked students to check and rank the factors that motivated them to enroll in AP classes, the data indicate that the presence and centrality of these beliefs do not necessarily align. Where almost every student indicated that college credit, increased chances of college admission, and preparation for college were the main reasons for taking AP classes, less than 50% of students ranked college credit or college admission as one of their top three reasons. For preparation for college work, a more drastic shift appeared: only 25% of students indicated the factor "preparation for college work" among their top three reasons. Moreover, the results indicated that females ranked this factor much higher than males, with a 2.76 difference in average rankings. Further research should look into this difference to understand how motivations may vary by gender.

The data also point to a completely different factor that may surpass others in the centrality measure. This is seen with the factor "desire to fight racial stereotypes," with almost 30% of students ranking this factor among their top three. This indicates that although this factor may not be relevant to 50% of the APCP student population, it is an extremely relevant and powerful motivator for the other 50% (n = 20) of students who did indicate it. Overall, the data for this sample of students indicate that while extrinsic motivators are the predominant factors for the majority of students, some intrinsic motivators, such as the desire to fight racial stereotypes, may be more central and influential factors for certain students.

A similar pattern arose for the questions that asked students to check and rank the factors that contributed to their determination to succeed. In this case, however, almost all students who selected family and personal as factors also ranked them among their top three factors (96.7% for family and 83.3% for personal). Friends, however, surpassed teachers as the third most central factor, even though teachers were the third most common factor overall. This may provide some evidence of a substantial positive effect of friends' influence and competition for the 23 students (56.5% of all students) who marked this factor. This illustrates that having like-minded peers in the classroom can help students to support each other to succeed academically and emotionally. For example, Treisman (1985) noted that if informal study groups comprised students with a common purpose, these students would not only help each other check their understanding of the subject material, but also to critique each others' work and provide helpful hints and study habits to guide each other's daily work. Moreover, these results may imply that only the more direct and personal social factors (such as family and friends) will have a meaningful influence on achievement and motivation.

Committed Action

Overall, the committed action measures indicate that most of these students have made direct and conscious efforts towards their goal of attending college. The mere fact that these students volunteered (although in some cases, the students may have been "voluntold" by their parents) to participate in APCP and have enrolled in AP classes with the

primary extrinsic motivator of college attendance is a strong indication that these students have already acted according to their beliefs.

The first major finding was that there was no substantial difference between what students hope and expect to do after high school. While the numbers adjusted slightly, over 70% of students still hope and expect to attend a four-year college that is the best fit for them, regardless of its location. There was a slight increase from 0% (n = 1) to 7.5% (n = 3) of students who hope and then expect to attend a community college. This result is not necessarily discouraging, however, because community colleges are extremely valuable in preparing students for post-high school career options and many have transfer partnerships with state universities if students later decide that they want to complete a Bachelor's degree.

The second major finding was that most of these students are fairly knowledgeable about the different steps involved in the college application process. The step that had the highest mean (i.e., what students were most knowledgeable about) was "enroll in challenging high school coursework" (= 2.77 on a scale from 0-3). Considering that the primary extrinsic motivating factor for enrollment in AP courses was related to college, this finding is not a surprise. Nevertheless, this result triangulated what students had previously said about their intensity and centrality of belief and indicates that a major goal of APCP was met. Especially since rising sophomores comprise half of the APCP student body, the fact that APCP successfully transmitted this message at an early enough stage is extremely positive. Similarly, while the lowest mean was 2.56 for students' knowledge about SAT testing timeline and deadlines, this result is not necessarily any cause for alarm since this is a one-step process that students can receive guidance upon when the time approaches.

Conclusion

In sum, the data do not suggest an exact alignment between the presence and centrality of a belief. This relationship, rather, varies among individual students based upon different levels of personal and social factors. It appears that only the most direct and personal social factors are meaningfully related to students' determination and motivation to succeed. The committed action measures, however, appear promising for all students because most reported high aspirations to attend the best-fit college regardless of their location and showed a fair level of knowledge about the steps required in that process.

To strengthen these findings, future research should consider how committed action measures may vary according to students' centrality of belief. As it stands now, the committed action measures assume all students will act in a certain way regardless of how they value certain beliefs. Other potential limitations include the design of the survey instrument, in that the construction of open and closed items may have influenced student responses, although we have no evidence of such an effect. Also, some of the survey instructions for the check and rank questions were problematic for a small number of students; as a result, several students answered those questions incorrectly and the data had to be omitted.

These results also produced findings that may be worthy of further inquiry. For example, future research can disaggregate students' motivations and determinations based on gender and other demographic factors. With a larger sample size, it may also be possible to study how motivation and determination may vary according to ethnic background. Since the APCP population size was fairly small in its first year (N = 40), large-scale analyses based on demographic factors were not possible. However, the results may help

teachers and policymakers to take into account the variance in intensity and centrality of beliefs that motivate students to participate in these intensive AP courses. As a result, instruction, curriculum, and policy must be differentiated for the needs of minority students. Understanding the basis for these motivations, moreover, will help teachers, leaders, and policymakers to make appropriate decisions that will help promote and sustain minority achievement at the high school level and beyond. ♦

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