

Are high achieving college students slackers?

Brent J. Evans

Motivation & Research Question:

There is a growing body of evidence that suggests college students are not academically challenged by or engaged in their coursework. Arum and Roksa's *Academically Adrift* (2011) argues that many students across a large spectrum of higher education demonstrate little to no gains in writing and critical thinking skills during their collegiate education. Babcock and Marks (2011) demonstrate that time students spend in class and on coursework declined substantially over the past fifty years. Furthermore, there is evidence that students are engaged in ancillary activities to the detriment of their academic success. For example, Lindo et al. (2011) show that a college football team's success reduces male student's GPA. While scholars have offered many explanations rationalizing these observations, there is a rising sense that college students do not push themselves to their full potential and that colleges are complicit in promoting a campus culture that is not academically challenging.

This paper provides evidence of whether high achieving students are challenging themselves in college. It is a descriptive analysis that examines college course taking patterns among students who enter college with Advanced Placement (AP) credit. Entering college with advanced credit can ease college course taking requirements which may lead to a variety of outcomes. For example, students with advanced credit can take a lower course load in some terms and still graduate on time. Alternatively, they may jump into higher level courses that could count for graduate credit, double major, or graduate early. Students may also use any additional free time derived from AP credit to work for pay.

This paper also addresses a larger issue of the promotion of AP courses at the policy level and higher education institutions' policies of granting college credit for AP coursework and exam scores. Recent policy arguments that, as a nation, we should promote faster time to degree rely on AP credit to encourage students to graduate more quickly (Alexander 2009, NMSI 2012). Institutions grant college credit for AP course work because they believe highly academically able students can bypass introductory college coursework due to their advanced placement preparation. Whether these policy and institutional goals are succeeding is an important question that remains to be answered. This study can illuminate whether proposals to foster faster attainment of bachelor's degrees through AP credit are likely to be successful.

The College Board, the non-profit organization that generates and coordinates Advanced Placement curriculum and exams states that over 900,000 high school graduates took at least one AP exam during their career (College Board 2012). The ones who take an exam and score a 3 or higher (out of 5) typically can earn college credit. These are the best and brightest high school graduates nationwide. If they enter college with some advanced standing and ambition, they should easily be able to enroll in higher level coursework early in the college careers, improve their time to degree, and increase their likelihood of double majoring.

The pathway through college that students receiving AP credit take remains unknown, but newly available nationally representative college transcript data from the National Center of Education Statistics (NCES) provide the opportunity to explore this question. By relying on regression analysis, this paper describes the relationship between AP college credit and college outcomes such as total credits earned, advanced course taking, double majoring, and time to graduation. This analysis will provide valuable evidence related to the current debate about whether college students are challenging themselves and whether institutions' goals in granting credit for AP scores are being met.

Background:

There are many ways of taking college level coursework while enrolled in high school. Students can take dual enrollment classes in which they enroll concurrently in their high school and at an institution of higher education. A small number of high schools offer the International Baccalaureate (IB) program, which provides an internationally recognized college level curriculum for high school students. The Advanced Placement program offered by the College Board is a more common way for high school students to take college level coursework by enrolling in an AP course of a specific subject.

Each of these pathways can yield college credit for students before they graduate from high school. Dual enrollment students can receive college credit from the postsecondary institution that is widely transferable. IB and AP courses provide the opportunity for students to take a subject exam at the end of each course, and many colleges grant credit for sufficiently high scores on each exam. Some institutions provide waivers of course requirements even if they do not grant actual credit towards graduation for high IB and AP exam scores. Because AP exams are one of the most common ways of earning college credit while in high school, this paper focuses on AP course credit.

Literature:

Researchers have conducted studies on AP students for a variety of purposes. For example, Jackson (2010) evaluates a program that pays students and teachers for AP exam performance, Klopfenstein (2004) presents data on lower racial minority enrollment in AP courses, and Stumpf and Stanley (1996) describe different AP course enrollment patterns between men and women.

Many analyses of AP students focus on college outcomes. Geiser and Santelices (2006) rely on regression analysis of data from the University of California to determine whether taking AP and other honors level courses is related to higher freshman and sophomore GPAs. Their study is concerned with how admission offices weight AP course taking in the admission process, and their findings indicate that admission weight should be placed on the exam score, which is a much better predictor of college GPA than simply taking the AP course.

The studies most directly aligned with this paper are efficacy studies of AP coursework conducted by the College Board. Hargrove et al. (2008) use matching techniques to compare AP and non-AP high school students in Texas on their college outcomes. They find that students who took the AP course and exam earn more college credit hours, have higher college GPAs, and are more likely to graduate in four-years relative to students who did not take the AP course or exams. Although the paper demonstrates

correlations between AP taking and college outcomes, the causal claim is weak since matching was only conducted on two variables: SAT score category and free/reduced price lunch status. Furthermore, data are only available for one state, Texas, and they examine a limited number of outcomes.

Although I do not attempt to make causal claims, this study extends the line of inquiry by focusing on college credit received through AP courses. It directly contributes to the literature by expanding the outcomes examined and by employing nationally representative data. It also approaches the research question from the perspective of whether institutions' AP credit policies are advancing their goals and whether college students are making the most of their college opportunities as opposed to evaluating whether AP courses are successful. This study describes how college students put their college credit for AP coursework to use, which is especially important given the current political climate calling for increased accountability in higher education.

Conceptual Framework:

Bailey and Karp (2003) elucidate several rationales for what they call "credit-based transition programs," which encompass AP and IB college credits, and dual enrollment credit. Although the authors focus on poorly prepared students, several of their rationales are more widely applicable. They suggest these programs prepare students for challenging college coursework by exposing them to classes with a higher level of academic rigor than traditional high school classes. The programs also deliver information about academic skills students will need to succeed in college so that students can gauge whether they are prepared for collegiate level coursework. Early college credit also lowers the cost of pursuing higher education. The authors argue that these early college credits can be accumulated cheaply relative to the regular tuition costs in higher education, and students can apply these credits towards graduating thereby taking a shorter time to complete college. Whether this last point holds depends on how students are using the early credit they earn, which is the focus of this study.

The basic human capital theory of education contends that students build skills through college attendance that are useful in the labor market (Schultz 1960 and Becker 1962). That skill building has concomitant costs such as the direct costs of college tuition and the indirect costs of forgone earnings associated with the time devoted to college. AP credit potentially lowers both these direct and indirect costs by reducing the time to degree. Alternatively, if students spend the same amount of time in college, AP credit can be used to build more skills by taking additional credits, taking graduate level coursework, and double majoring.

To evaluate whether early college credits actually lower the cost of attending postsecondary education or increase the skill building occurring in higher education, it is necessary to outline a student's decision to enroll in an AP class in high school and the student's potential options in college upon receiving college credit.

A student may take AP courses for various reasons in high school. First, a student may want a challenging high school course schedule, and AP courses are often the most academically rigorous options. College admission offices often reward the additional effort by weighting a challenging high school curriculum in the student's favor. Second, some high schools grant additional GPA points for

grades in AP classes, so a student may receive a 4.5 for getting an “A” thereby improving their high school GPA. Third, the student may seek early college credit which many colleges offer on the basis of AP exam scores taken at the conclusion of the AP course. Finally, a student may simply be interested in the subject matter of the AP course in which there is no lower level course offered i.e. AP Art History. It is possible that only the students who take AP courses for the purpose of obtaining college credit care about decreasing their cost of attending college and attempt to graduate early. But even if cost savings is not a motivating factor, students entering college with early credit have several options available for taking advantage of their high school effort.

In order to complete a bachelor’s degree, students must accumulate a certain number of institutionally mandated credits and fulfill a combination of general education and major specific requirements. Some institutions allow AP credits to count as both credits earned toward graduating and fulfilling of course requirements while others allow them to satisfy requirements but not apply as credits towards graduation or vice versa.

If a student earns college level credit for AP coursework and exam scores, the student has two options available to her. She can take the same course load each term as she would have done in the absence of receiving the AP credit or take a lighter course load than she would otherwise have done. There may be valid reasons for doing both. In the first case, thanks to the early credit earned, she may be able to take more elective classes or more advanced undergraduate courses in the earlier years of college. This advanced coursework could lead to graduate level courses during the junior and senior years. Additionally, she may take advantage of waiving general education requirements by double majoring or majoring in a subject that typically requires more credits such as engineering.

Valid reasons for taking a lighter course load also exist. Perhaps she wants to gain valuable experience by working while in college, and the lighter course load enables her to hold a job. Of course, the alternate hypothesis posed by many critics of higher education is that students take advantage of the early credit by reducing their workload in college in order to increase leisure time. Essentially, they argue that college students are slackers. The current analysis seeks to find evidence to either support or refute this argument.

Data:

The study employs newly available transcript data from the Beginning Postsecondary Students Longitudinal Study (BPS) 2004/2009. This NCES survey gathers student interview, administrative, and transcript data from a nationally representative group of a cohort of first-time college going students. The students are surveyed at the end of their first year of college (2004) and then three (2006) and six (2009) years after beginning higher education. Available data include AP credit earned from high school courses and exams before entering college as well as college outcomes and demographic information.

Method:

This study relies on regression to assess the relationships between AP college course credits and college behaviors and outcomes. As earning AP college course credit is highly correlated to other measures of

college success, I will control for academic preparation and other student characteristics to the full extent of the data. BPS contains data on high school GPA, SAT scores, financial information, and demographics such as race and gender. I will add institution fixed effects if there are enough students per institution to allow for fixed effects. The basic estimating equation is

(1)

Where i indexes each student in postsecondary institution s . The outcomes, y , of interest are total credits earned in higher education, number of graduate level courses taken, double majoring, time to degree, and hours worked for pay. The coefficient of interest is β_1 which describes the relationship between an additional AP college credit and each outcome.

Because it is extremely challenging to control for the selection bias inherent in student decisions of college enrollment, I cannot make causal claims about AP credit and college outcomes. Additionally, there may be other unobserved variables that explain the link between AP credits and college outcomes that cause bias in β_1 . However, a descriptive analysis is still insightful.

Preliminary Results:

Table 1 presents results from estimating equation (1) without institutional fixed effects. Each cell presents the coefficient on AP credits from a separate regression. Outcomes are listed in the first column, and the different models correspond to additional control variables.

For the outcome of total credits earned within six years of beginning college, the univariate regression indicates that a one AP credit increase corresponds to a 2.5 credit increase in overall college credits earned. Controlling for student characteristics reduces the coefficient to 0.9, and controlling for academic preparation through high school GPA and SAT scores reduces the coefficient further to 0.3, although it remains significant at the 5% level. This result indicates that even after controlling for student's background and academic abilities, entering college with more AP credit is associated with students earning more credits in college.

A similar pattern emerges with other outcomes such as months to obtain a BA and double majoring. Among students who obtain a BA, those with more AP credits have a shorter time to degree (although this result is no longer significant once academic controls are included) and have a higher probability of double majoring.

Discussion:

Taken together, these preliminary results suggest that high achieving students who earn advanced placement credit in college, may put that credit to good use. In addition to earning more overall college credit, students with more AP credit are more likely to double major. Although students with more AP credits have reduced time to degree in Models 1 and 2, it becomes insignificant in Models 3 and 4. Students may not be graduating faster, but they are earning more credits and are more likely to double major. These findings run counter to the hypothesis that college students are not challenging themselves during their undergraduate education. This suggests the results of Babcock and Marks and

studies such as *Academically Adrift* may be driven by average or lower achieving students as opposed to high achieving students entering college with credit, although further evidence and investigation is necessary to draw additional conclusions about college student effort.

There are also policy implications of these findings. These findings support the theory that students make cost benefit calculations and are attempting to extract value out of their college education. If more college credit can be granted from high school courses, a shorter, more efficient college timeline could improve social welfare. There are also implications at the institutional level. Institutions grant college credit for AP courses for some purpose. They are certainly interested in competing for top level students who make enrollment decisions in part based on the number of AP credits they will receive, but the findings presented here also suggest that institutions can promote positive outcomes by granting more AP credit.

Table 1: Linear regression results showing the relationship between number of AP Credits awarded and college outcomes.

Note the coefficient on Total AP Credits from a separate regression are reported in each cell. The dependent variable for the regression is in the first column.

	Model 1	Model 2	Model 3	Model 4
Total credits earned years 1-6	2.494*** (0.211)	0.912*** (0.125)	0.293** (0.121)	0.221* (0.120)
Months from 1 st enrollment to BA (of those who attained a BA)	-0.233*** (0.029)	-0.194*** (0.027)	-0.047 (0.033)	-0.049 (0.034)
Double Major (of those who attained a BA)	0.007*** (0.001)	0.007*** (0.001)	0.005*** (0.001)	0.005*** (0.001)
Student Controls		X	X	X
Academic Preparation Controls			X	X
Institution Controls				X

*** p< 0.01, ** p<0.05, *p<0.10

Student controls include gender, race, citizenship status, age, immigrant status, income as a percent of poverty level, parents' highest level of education.

Academic Preparation controls include categorical measure of high school GPA and SAT or ACT score.

Institution controls include whether the institution of first enrollment was less-than-two-year, two-year, or four-year; control of first institution (public , private, or for-profit); and selectivity of first institution. For the months to BA outcome and double major outcomes, level of institution is omitted.

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