

Are prerequisite skills needed in advanced placement courses?

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Abstract

This Action Research attempted to determine if having prerequisite skills impact the success rate of the students in A.P. courses and if the students other courses were affected by the A.P. placement. One of the major decisions that school schedulers deal with is deciding who should be enrolled in Advanced Placement (A.P.) courses and who should not. One school of thought is that A.P. courses should be open for a greater amount of students who have not completed the prerequisite skills, as they would benefit from the additional rigor and demands of the course. Another school of thought is that by letting everyone into the class a teacher can only differentiate so much before the A.P. class becomes “watered down.” A third consideration is that minorities are underrepresented in A.P. classrooms across the country. What was found was that the students who had significant deficiencies in prerequisite skills also had significant disparities in their grades as compared to the grades of the students who did complete the prerequisite skills.

CHAPTER I

INTRODUCTION

Overview

For years, there have been arguments two schools of thought between teachers and administrators about the number of students who are placed in Advanced Placement (AP) classes who have not passed their previous social studies class or who may have not passed their government High School Assessment. Administration frequently states that students need to be exposed to AP level instruction and argues that minority students have not been enrolled in enough AP classes. There are high school teachers who argue there are just too many students who have failed to meet the prerequisite skills who are being placed into an AP class at one time.

In Maryland, the Advancement Via Individual Determination (AVID) program is at the center of this debate because all AVID students have to be in an AP level course to be part of the AVID program. What is the effect of placing students in AP classes who have not completed the prerequisite coursework?

The examination of actual data will be beneficial to both teachers and administrators as they make decisions about placing students in AP classes or about how many students to place in AP classes. To provide that type of assistance, the purpose of AP and what AP eligibility should look like must first be established. Then a careful examination of the demographics of the students who are currently comprising AP classes is in order. In addition, the researcher strives to study how AVID incorporates AP curriculum into classes. Ultimately, research about who is having success in AP classes will be invaluable. Once this is established, the question at hand becomes whether or not AP is becoming too watered down.

Statement of Problem

The purpose of this study is to determine if there is an impact upon students who have not completed prerequisite skills prior to being enrolled in an A.P. course. This study will investigate this topic by comparing the students' grades from last year without an Advanced Placement course through this year with the addition of an Advanced Placement course.

Hypothesis

There will be no effect of enrolling a student in an A.P. course who has not met the prerequisite skills. Therefore, the students grades will not be negatively impacted from their sophomore year to their junior year, which will add an A.P. course for the first time.

Operational Definitions

The independent variable was the completion of the prerequisite skills, which included the completion of a Gifted and Talented Social Studies course in the student's freshman year, passing the government High School Assessment, and scoring a fifty on both the verbal and math sections on the PSAT. The dependent variable was academic progress which was measured with sophomore and junior quarter GPA's for their Math, English, and Social Studies courses.

CHAPTER II

REVIEW OF THE LITERATURE

This review of the literature examines whether it is beneficial to place students in Advanced Placement (AP) Courses who have not passed the prerequisite requirements. The first section discusses the purpose of Advanced Placement classes. Section two delves into the demographic makeup of students enrolled in Advanced Placement courses. Section three provides an overview of the AVID, the Advancement Via Individual Determination, program. Section four considers what success looks like in AP courses, and section five provides an inquiry into whether AP courses are becoming “watered down.”

Purpose of Advanced Placement

Wallis (2004) states that Advanced Placement (AP) courses were first started in 1955 and that there were 11 courses which were originally created as a way to give bright high school seniors a feel for college. In 2005 there were 37 AP courses ranging from Music Theory to Computer Science and including students in their freshman year. Wallis (2004) goes on to state that AP courses and exams are created by teams of university professors who send out a guideline for classroom instructors. There is no mandated curriculum and teachers are not required to have specific training for AP courses. Hence, the quality of the courses can vary widely from school to school. Students who receive a score of a 3, 4, or 5 generally receive college credit for those courses.

Whether or not schools should open AP courses up to all students will be looked at through the lens of pros and cons. Gewertz (2008) mentions that some students feel like they are

being set up for failure, but he also discusses how even failure in AP classes can be a good thing for students. In addition, Gewertz looks at average scores from years ago during times when fewer students took AP classes and compares those scores to current years in which AP classes have more students and finds that scores have declined. Gewertz suggests that some teachers think that students are being set up for failure because of their low reading abilities, but he does note that several interventions have worked in Duval County, Florida to combat this.

Adams (2012) also addresses the fact that more Advanced Placement tests are being taken in the U.S. but that the passing rate has fallen. Adams also investigates the number of schools that do not offer sufficient Advanced Placement classes in their schedules. The question is, What is important: having students take the Advanced Placement exam or having more students pass the Advanced Placement exam? This goes along with the question of what the purpose of Advanced Placement classes is. It may be that a district that simply wants numbers that reflect the system well, or it may be the case that a school system that challenges students to grow academically is what is desired. For his part, Adams mentions that the challenge is to increase access to Advanced Placement and persuade teachers, students, and parents to understand that it is important to experience the Advanced Placement class, even if the child doesn't pass the Advanced Placement exam.

McNeil (2007) states that there are positives of enrolling more students, and minorities in particular, into Advanced Placement courses. McNeil argues that there is a lack of teacher training, funding for new classes, and rigorous instruction in earlier grades. There is also difficulty in getting minority students to enroll in AP courses. These are all obstacles that need to be overcome, according to McNeil. McNeil also points out that some states choosing not to focus on scores and are instead looking to see high enrollment in Advanced Placement classes.

McNeil (2007) reiterates that if we see a lot a 3's, 4's, and 5's we will know that schools screened kids out. This goes along with the concept of who is currently eligible for Advanced Placement classes and who should be eligible for these classes.

Demographics of A.P. Courses

The demographics of students in Advanced Placement courses clearly signal flaws with regard to who has access to Advanced Placement level classes. Solorzano (2002) states that there are three major issues that schools need to focus on when looking at the demographics of students in Advanced Placement courses. One, how do school structures, processes, and discourses help class discrimination in access to AP/Honors classes? Two, how do Chicana/Latina students and parents respond to the educational structures processes, and discourse that help maintain class discrimination in access to AP/Honors classes? Three, how can school reforms help end class discrimination in access to AP/Honors classes? Solorzana (2002) suggests that the big issue will be trying to help students within an educational system that is culturally/racially biased. Solorzana gives merit to the idea of enrolling more students into Advanced Placement programs regardless of how the students initially do and argues that students would be affected by the educational outcomes for Latina/o and African American students who were not exposed to Advanced Placement courses. Marklein (2006) also agrees that Black, Native American, and Hispanic are underrepresented and that this speaks to a need for adequate preparation of traditionally underserved students. Marklein would suggest that the educational system cannot rest until we're ensuring that students of all ethnicities are represented. McNeil(2007) states that 13.7% of U.S. high school seniors are Black and yet only 6.9% of AP exam-takers are Black.

AVID

Ruenzel (1997) tells us that the AVID, Advancement Via Individual Determination, program's principal idea is to get disadvantaged students who usually work alone to work together under the guidance of a teacher and tutors on challenging curricula. Ruenzel (1997) goes on to explain that students enroll in the same academic courses that traditional college-bound students take. Once in these classes, they receive no individualized instruction or attention. The AVID students do take an additional AVID class where they learn how to take detailed notes. Students then have to explain those notes in their own words and create questions in their margins. Successful notetaking is a cornerstone of the AVID program. Ruenzel points out that a study by Mehan, a UCSD sociologist, found that 55% of African-Americans who participate in AVID for three years go on to four-year colleges. The national college-going rate for Blacks is 33%. Hispanic students have a national rate of 20% as compared to Hispanic students enrolled in AVID, who have a 43% enrollment in four-year colleges. AVID also stresses the socialization that connects students with academics and brings students on college visit field trips throughout the year.

The AVID program is at the heart of enrolling students in Advanced Placement classes who have not completed the prerequisite skills, skills such as matriculating in G.T. and Honors courses, receiving high grades in their previous course, and receiving high scores on state tests and PSATs. Black (2008) targets middle-achieving students who have been underrepresented in Advanced Placement classes and provides mixed results of student success that vary with stakeholder support and other academic variables. Black states that the evaluation of AVID's impact was inconsistent, but that it did have better outcomes on academic performance in the second year of implementation. As far as creating access to Advanced Placement classes as a

means of increasing college enrollment, Black suggests that it seems appropriate to place greater emphasis on student variables. It is acknowledged that the data presented in the study represent a select group who remained active in the study and the groups of students who did not succeed in AVID should have their perceptions of the program looked at to distinguish characteristics of students who are more or less likely to succeed in the program. By all accounts, though, AVID seems to be an effective tool to help students who want to be helped.

Chase (2012) looks at a superintendent's goal to increase rigor as a means to keep students in school and argues that students would gain by simply being enrolled in an Advanced Placement course whether they are successful on the exam or not. Chase (2012) interviews a superintendent in Illinois who states that AVID is teaching students time management skills and helping them become ready for college, which has empowered students and reinforced the importance of education.

What does success look like in an AP course?

Wallis (2004) states that 1.9 million AP exams were taken by 1.1 million U.S high school students, which is more than double the amount who took them in 1994 and more than six times the number who took them 20 years ago. In addition, according to Wallis, 60% of all high schools offer AP classes. Marklein (2006) reports that the percentage of students who took and passed AP courses has increased in every state since the year 2000. Marklein also reports that among public students, 14.1% in the class of 2005 earned a passing grade in at least one AP exam, which was up from 13.2% of seniors in 2004, and 10.2% in the year 2000.

The importance of successfully completing an Advanced Placement course is also discussed as Moore (2008) points out that 45% of students who take one Advanced Placement

course and 61% who take two or more courses are finishing their bachelor's degree in four years or less. The state of Texas has doubled the percent of White students in Advanced Placement classes as that of African American and Hispanic students, with African American students performing the worst on the actual Advanced Placement exams. These two statistics show how minorities are being placed at a disadvantage. Moore goes on to argue that all students can have success in Advanced Placement, but that they should experience a rigorous curriculum prior to enrolling in an Advanced Placement class.

Are Advanced Placement courses becoming watered down?

If students are not achieving success in AP (Advanced Placement) classes, do we change what we measure? Sawchuck (2009) discusses that there is a divide on whether schools should offer AP classes to all interested students or only to those who demonstrate an ability to master the material. Sawchuck states that teachers were reported to have worries that the quality of students isn't what it used to be and that that will have a deleterious effect on what they're able to do in these courses. Sawchuck points out that a school's commitment to access should not be confused with a desire for prestige. A reported 70% of the teachers who were surveyed stated that their schools have an open door policy regarding Advanced Placement enrollment (Sawchuk, 2009).

Ewers (2005) talks about how taking AP classes used to be a reasonable barometer of academic ability, but that colleges are reconsidering what taking an AP class really means anymore. Ewers suggests that it is troubling some educators who worry that, by trying to become everything to everyone, AP is losing its luster. Ewers talks about how college admissions are no longer looking at how many Advanced Placement classes a student has, in that

ten AP classes is not necessarily better than two or three AP classes. If the classes are being watered down, does that help students in the long-run or really prepare them for college?

Summary

In conclusion, the most important aspects to consider when placing students in A.P. courses have been addressed by this literature review. They include the desired expectations for the students as it relates to the purpose of the A.P. classes. What are the reasons for why a student would/would not be placed in an AP course? Are there low expectations for minority students? How does a program like AVID create success for students enrolled in it? Is success all about passing the AP exam, or can success include other measures? Finally there is a reason why all students are not enrolled in an AP course, so could there be an issue of AP courses becoming too “watered down” so that the original goal of the course is no longer evident?

The following chapters of this study will focus on the overall academic bearing being AP course placement has on the rest of a student’s courses. The study will also attempt to determine whether having prerequisite skills, such as Gifted and Talented or Honors level course work, high grades in previous courses, or high PSAT scores should be used to determine whether an AP level course is appropriate for a student.

CHAPTER III

METHODS

This study examined the effect of placing students in Advanced Placement (AP) classes who have not obtained prerequisite skills as specified in the program of study.

Design

This study used a causal comparative design in which there were two groups that were both placed into an AP course, one group having met the prerequisite skills and one group which did not meet these prerequisite skills. The independent variables were the students' prerequisite skills, consisting of PSAT scores, Gifted and Talented coursework, and an 'A' or 'B' in a previous social studies course. The dependent variable is whether the student is maintaining a 'B' average or higher in his/her AP course. The study took place during the students' 11th grade AP United States History class, but it referred back to the students' previous two years of high school grades and test scores.

Participants

The study took place at a four-year public high school. Students have classes that consist of self contained special education, special education inclusion, standard level, honors level, Gifted and Talented (GT), and Advanced Placement (AP) courses. The participants consisted of 15 Advancement Via Individual Determination (AVID) students and 15 non-AVID students who were currently enrolled in AP United States History. The ethnic breakdown of participants was as follows: 23 African American, one Caucasian, and six Asian students. Seventeen of the participants were female, and thirteen of the participants were male. The participants were all

juniors. The non-AVID students all took a GT course in 9th grade American government, had at least a ‘B’ average in their social studies course from the previous year, passed the Government HSA, and had PSAT scores that are closer to College Board’s recommendation of 50’s for both verbal and math scores. The AVID students did not have a GT course in social studies and did not meet all of the aforementioned prerequisite skills.

Instruments

The instruments used for this causal comparative study were grades for previous and current coursework, PSAT verbal and math scores, and the students’ Government HSA scores. In theory, students should have a social studies course grade that is at a “B” or higher from their previous year in order to take an advanced placement course. The grades in the students’ math and English courses were also compared from this year to the previous year to determine whether the addition of an AP course would change the student’s overall academic performance. College Board recommends that a student have PSAT scores in the 50’s for both their verbal and math scores in order for them to be placed into an AP course.

Procedure

Students from 11th grade AP United States history classes had their grades from last year’s social studies, English, and math classes compared to this year’s grades for English, math, and their new AP United States history course. These students also had their Government HSA requirements shown as being “met” or “not met” as well as their PSAT verbal and math scores which should reflect a score that is close to “50” for both the verbal and the math. This showed whether or not the student had adequate skills entering the AP course to draw upon. This allowed the researcher to examine how the student performed academically in the previous year

before he/she was enrolled in an AP course and then compare it to the current year to determine how the AP course is affecting social studies as well as math and English courses.

In the study school, there was one section of AP World History last year, and there were three sections of AP United States History during the study year, so there was no difficulty in finding students who have an AP course for the first time in social studies. The students in AVID did not have the GT course in 9th grade American Government and had not met all of the prerequisite skills.

CHAPTER IV

RESULTS

This study examined the impact of preparation on the success of Advanced Placement students. In particular, the following prior preparation of students and readiness were researched to include:

The prerequisites for the Advanced Placement courses are to have experience in a Gifted and Talented (G.T.) course, primarily the ninth grade G.T. American Government course. Students in the Advancement Via Determination (AVID) courses did not have a G.T. course, whereas all of the other students in this study did take the G.T. course. College Board recommends that students should have PSAT scores in the 50's for both their verbal and math in order to matriculate in Advanced Placement courses. This study high school accepts students in AP courses with scores in their 40's and even 30's. Students are also required to pass the High School Assessment for Government.

Student success in the Advanced Placement program, specifically United States History, was measured by their course grades in their previous year's social studies course as related to their current A.P. grade for the course. English and Math courses were also reviewed in order to view how the overall academics of the student were affected once he/she began taking an A.P. course.

A critical issue examined in this study was the prerequisite preparation of those students who participated in the AVID. The following analyses were performed. Table 1 contains the measures of central tendency for all the variables comparing the AVID students and the non-Avid Students. Table 2 provides an independent t test examining whether there were significant differences between the ADVID and non-AVID students. Significant differences were found

between the AVID and non-AVID students on all the prerequisites and all achievement as well as PSAT Verbal and Math.

Table 1
Measures of Central Tendency

	AVID (yes=1) (no=2)	N	Mean	Std. Deviation	Std. Error Mean
A.P. Class	1	15	2.87	1.060	.274
	2	15	4.20	.561	.145
11th Eng.	1	15	3.33	.900	.232
	2	15	4.60	.507	.131
11th Math	1	15	3.60	.828	.214
	2	15	4.47	.516	.133
10th World His.	1	15	3.93	.799	.206
	2	15	4.67	.617	.159
10th Eng.	1	15	3.47	.640	.165
	2	15	4.53	.640	.165
10th Math	1	15	3.33	.976	.252
	2	15	4.13	.743	.192
HSA (Met=1) (Not Met=2)	1	15	1.27	.458	.118
	2	15	1.00	.000	.000
PSAT Verbal	1	15	40.27	4.978	1.285
	2	15	46.33	5.260	1.358
PSAT Math	1	15	39.80	5.213	1.346
	2	15	44.87	7.511	1.939

Table 2
Independent t tests

		T	df	Sig. (2-tailed)	Mean Difference
A.P. Class	Equal variances assumed	-4.306	28	.000	-1.333
	Equal variances not assumed	-4.306	21.263	.000	-1.333
11th Eng.	Equal variances assumed	-4.750	28	.000	-1.267
	Equal variances not assumed	-4.750	22.079	.000	-1.267
11th Math	Equal variances assumed	-3.439	28	.002	-.867
	Equal variances not assumed	-3.439	23.458	.002	-.867
10th World His.	Equal variances assumed	-2.814	28	.009	-.733
	Equal variances not assumed	-2.814	26.324	.009	-.733
10th Eng.	Equal variances assumed	-4.565	28	.000	-1.067
	Equal variances not assumed	-4.565	28.000	.000	-1.067
10th Math	Equal variances assumed	-2.526	28	.017	-.800
	Equal variances not assumed	-2.526	26.152	.018	-.800
HSA (Met=1) (Not Met=2)	Equal variances assumed	2.256	28	.032	.267
	Equal variances not assumed	2.256	14.000	.041	.267
PSAT Verbal	Equal variances assumed	-3.244	28	.003	-6.067
	Equal variances not assumed	-3.244	27.915	.003	-6.067
PSAT Math	Equal variances assumed	-2.146	28	.041	-5.067
	Equal variances not assumed	-2.146	24.947	.042	-5.067

CHAPTER V

DISCUSSION

The original hypothesis stating that prerequisite skills would have no effect as to whether students met with success in advanced placement courses was rejected. AVID students performed statistically significantly lower on all prerequisites as well as on all later measures. The AVID students also have seen their grades in math and English drop after being introduced to the AP course, as well. However, given that students are passing the course, they are, in fact, meeting with success. The course is exposing them to more rigorous instruction and is opening up the advanced placement courses to more minorities.

Implications

The implications of these results can be looked at from different vantage points. Is it better to have a higher GPA or have a student who is pushed a little beyond his/her academic comfort zone and now has a better understanding of college coursework? The implications can be used by administrators as a reason for the introducing more students to AP classes. These students are passing the class, and this bolstered enrollment is creating more exposure to rigorous coursework for minority students. The implications could also be looked at differently by a teacher who feels that there are potentially too many students placed in an AP course, which can make it difficult to differentiate for individuals, especially given the more rigorous course load.

Theoretical Consequences

The theoretical consequences of this study would be having students in A.P. courses being held back by other students who would not have historically been permitted to enroll in the class. If an A.P. program becomes “watered down”, students could lose an opportunity to prepare themselves for college classrooms. If colleges started to doubt the A.P. programs then students

would not be able to gain an edge when applying to colleges. Students who have not been exposed to upper- level classes and who become enrolled in an A.P. class for the first time often express a desire to drop the A.P. course after the first marking period. Teachers who agree that students should be allowed to drop their A.P. classes often find themselves in uncomfortable positions when administrators deny the student permission to drop. There will most likely be more national debate about whether the AP courses are becoming too watered down, or what the term success really means for a student in an AP course. One matter that needs further evaluation is when classes in other disciplines start to become affected by the AP course.

Threats to Validity

One type of threat to the validity would be an external one such as the sample size, which consisted of thirty students all from the same school. Another example would include the fact that only Math and English classes were looked at for 10th and 11th grade; however, a future study could examine all courses as well as review students' grades for the next several years to determine how matriculating in AP courses affects students' academics. Another type of threat to validity would be an internal one such as selection which refers to selecting participants for the various groups in the study. The subjects were not selected by random sampling and they were not equivalent, which is a threat to a two group study. Another internal threat would be instrumentation, in that the students' grades in Math and English are from different teachers.

Connections to Previous Studies/Existing Literature

Connections can be made to literature that supports the need for more AP exposure for minority students. Solorzana (2004) and Marklein (2006) would both give merit to the idea of enrolling more students into Advanced Placement programs regardless of how the students

initially do and would argue that Black and Hispanic students remain underrepresented. Students are meeting with success, depending on what one's definition of success is. Connections can also be made to literature that argues against opening up AP courses to more students, as minimum requirements are being overlooked. Ewers(2005) suggests that A.P. courses are trying to become everything to everyone and that this will water down the A.P. program and eventually colleges will start to look differently at A.P. courses. This study is similar in that it tracks the success of minority students enrolled in A.P. courses, but is different to other studies in that it looks how the student's other core subjects of Math and English fare when the added rigor of an A.P. course is added in Social Studies.

Implications for Future Research

Further research should focus on how students progress in all aspects of academics after being exposed to AP courses. All courses for the next two years as well as college grades could be examined to determine the overall effect of what an introduction to an AP course does for a student. Data from this type of review could be compared to data from a cohort of ninth grade classmates who did not go on to take AP courses.

Conclusions

This study was originally thought of to address disagreements between administrators and teachers at the study school. Does the class suffer if there are too many students in an A.P. course who probably shouldn't be in an A.P. course, or does the benefit to those students outweigh the potential outcome for the entire classes AP exam results? In other words, will the "true" AP students be negatively affected by students who might otherwise not have been placed in an AP class? This study has provided evidence to support both sides of this argument, depending on the vantage point. The overarching question is "How do you determine success for

a student?” GPAs and the AP exam are all two tangible measures. Notwithstanding, how do you measure the confidence that students can gain from taking an AP course, or if a student decides to go to college after completing this course who otherwise would not have considered him/herself “college material?”

During the study one of the students was observed to have been visibly withdrawn from the teacher’s lesson, and tried to distract other students. This happened to be a student who had not met the prerequisite skills for the class and had wanted to drop out of the class from early on, but had not been permitted to do so. The rest of the students could not be picked out as students who traditionally “belonged” in A.P. courses. Students who were struggling with the class were still active participants in the classroom. This would tend to make a case that school policies should not be a one size fits all approach, in that students should be pushed beyond their comfort zone and not allowed to quit after the initial stress of the A.P. class but at the same time it should be acknowledged when it is not in the students best interest or the best interest of the other students in the class to keep a student enrolled.

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