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ABSTRACT

A study examined the correlation between students' placement test scores on a multiple-choice test and their passing rate on the Advanced Placement (AP) language exam. Statistics show that the number of students taking advanced placement tests is increasing, and a review of the literature supports the need for further research in the area of predictive student selection criteria. It is hypothesized that there will be a correlation between placement test scores based on the first 50 questions in the 1991 Acorn multiple-choice test and passing rate on the 1992, 1995, and 1996 AP language and composition examinations. Sample for this study consisted of 73 students primarily from middle to high economic neighborhoods who attended Marist High School, a Catholic boys' school located on Chicago's far southwest side. Results indicated that the Acorn multiple-choice scores can be used as predictors of student success on the AP tests. The higher the score on the pretest, the more likely it is that a student will pass the AP exam. Although the Acorn multiple-choice scores worked well as indicators of probability of success on the AP tests, as might be expected, they were not a predictor of final grades on the test. The Acorn scores can predict general success but not actual grades. (Contains 3 tables of data and 13 references.) (TB)

CORRELATION BETWEEN STUDENTS' PLACEMENT SCORES ON ACORN BOOK MULTIPLE-CHOICE TESTS AND PASSING RATE ON THE AP LANGUAGE EXAMINATIONS

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The purpose of this study is to examine the correlation between students' placement scores on an Acorn book multiple-choice test and students' passing rate on the Advanced Placement (AP) Language examination. Statistics show that the number of high school students taking AP examinations to try to earn college credit is increasing. Also increasing is the number of states who will pay for some or all of the cost of these examinations. Colleges usually give an extra point on their admissions score for a student's having been in an advanced placement class whether the student has passed the examination with a score of 3 or above or not. Procedures for placement of interested students into such AP classes vary from no criteria (open admissions) to multiple criteria including such factors as teacher recommendations or counselor recommendations, grades in previous courses within the given subject area, class rank, and NEDT or PSAT scores.

Teachers with open admissions will understandably have little interest in placement criteria as they do not need any. Their interest in this study will lie in the predictive value of scores on the Acorn multiple-choice test as indicators of

potential success on the actual AP examination. For such teachers this knowledge would have two values: It could encourage capable but reluctant students to take the test, and it could give the teacher important information regarding areas of success in teaching the course even if many students opted not to take the actual AP test. Students in courses with open admissions are usually not required to take the AP examination and often do not do so.

Teachers who use placement criteria usually take a common sense approach and deploy multiple criteria. What is needed are studies isolating these separate criteria to determine the effectiveness of each. Such teachers' interest in this study will be to see if they can rely on one criteria alone, the Acorn multiple-choice test: If it has a strong correlation to the actual AP test scores, they could save the time and effort involved in checking other criteria. A second interest would be in the Acorn multiple-choice test as a predictor of success. The schools that place students into an AP course frequently require the actual test and are interested in pre-test scores as indicators of who needs more work and in what areas.

Since the AP Language and AP Literature Examinations have dual test components, an objective multiple-choice section and a more subjective essay section, the question might arise as to why this study is focusing on only one of these tests. Although it might seem that the complete test would work better for both placement and as a predictor, including the essay section has three drawbacks: first, it is time consuming to grade the sample essays when large numbers of students are being tested; second, the grading is subjective and it is possible that if read by only one teacher, particularly one new to teaching AP who has not been previously trained as a grader, some inaccuracies might occur, and

third, the students themselves might be able to write well but just be unfamiliar with the type of question asked on the AP exams, as, for example, with the style question. This might cause them to leave the essay question blank creating an incorrect perception of their ability. In addition, only one part of the test can be given in a 45 to 50 minute class period. Since the desired student rate on the multiple-choice questions is one per minute, this section of the test is also more flexible given different time constraints. It is easier to tell students that they only have to do 45 of the 53 questions than to tell them to do three/fourths of an essay. Of course, with block scheduling time would be no problem.

Not a great deal of research has been done in the area of AP testing, and most of what has been done involves highly technical studies conducted by the College Board itself, the very group that produces the test. Much of the research focuses on methods of raising test scores.

The question of whether a teacher in a small school with no ability grouping can even consider Advanced Placement (AP) testing for a few students found a positive answer in Simpson's 1994 study of differentiation practices in primary and secondary schools. She suggested students in a single classroom could be given different assignments to optimize their learning. Successful teachers promoted the belief that achievement could improve, gave continuous feedback, responded to students' needs and shared management of learning with the students.

Both Reynolds and Bennett focused on raising AP test scores. Reynold's study (1981) of the writing skills workshops of Johns Hopkins University Program for the Verbally Gifted suggested that the writing workshop participants scored

high on such tests as the College Board Advanced Placement English Language and Composition Test. Bennett (1989) reported that after a year-long program adding intensive journalistic writing into Advanced Placement English courses, most students who took the course received high scores on the Advanced Placement English Language and Composition test, and all students in the course improved their writing.

One of the reasons for this focus on raising AP scores, apart from the obvious desirability of better performance, is concern over the effects of low scores and lack of college credit on students who do not succeed on the AP Examination. An essentially negative view of the Advanced Placement English Examination was presented by Henderson (1992). She was dealing with college students who had previously had an Advanced Placement course but did not receive college credit for their work. She stated that such students often presented problems for instructors of first-year college composition. They seemed to initially resist instruction and have difficulty working with peer groups even though their own work was not outstanding or, in some cases, even satisfactory. Adjustment occurred for them when they shifted into thinking about situations rather than themselves. Teachers who maintained a friendly attitude (we're all searching for truth together) and who demonstrated an honest concern for such students were successful.

In 1994 Shipman-Campbell developed a practicum to increase the number and success rate of junior Honors English students -- 63 students who were 62% Latino and 38% African American -- taking the English Advanced Placement (AP) examinations. To motivate success, she used academic pep rallies and brought in outside speakers. Also strategies were designed to reduce test taking fears

and to teach stylistic analysis. Various sources for funding the cost of the exminanation were located. Although Shipman-Campbell dramatically increased the number of students taking the examination, performance remained poor. Nevertheless attitude improvement was shown.

Hoven (1995) compared the performance of seniors at 21 Montgomery County (Maryland) high schools on the Advanced Placement (AP) tests. Advanced Placement test results (the number of students, per 100 seniors, who scored a 4 or 5 on a test) were correlated to the number of college educated adults within the school boundaries. Those county schools with more college educated adults did tend to produce more students who did well on the AP tests. However some schools produced two to five times more students with 4's and 5's than other schools with similar demographics. Hoven interviewed AP teachers in some of these exemplary advanced placement programs, focusing on five subject areas including English, and based his identification of successful AP teaching strategies on the comments of the teachers. Common qualities in these successful teachers included knowledge of the subject matter, enthusiasm for teaching it and a steady focus on increasing skills necessary for student success.

In 1994, Longford argued for adjusting the scores for free response items in the Advanced Placement (AP) tests. He used reliability studies to analyze the psychology, computer science and English Language examinations. Showing that the minimum squared error score adjustments proposed by himself in 1993 result in changed AP scores for an appreciable percentage of examinees, he proposed implementation as it would be easy and labor effective.

Working specifically with multiple-choice scores, Bridgeman (1991) found that in American History and Biology, they were superior to the essay scores in predicting overall grade point average. However, multiple-choice scores were essentially equal to the essay scores in predicting grades in history, English and biology. In history courses, males and females received about the same grades and had nearly equal scores on the AP essays, but the multiple-choice scores of males were about half of a standard deviation higher than the scores of females. Bridgeman concluded that placing more weight on the essay component of the history examination would reduce sex differences without causing the content or predictive validity to be compromised.

The value of the multiple-choice component of tests was also established in Bennett's study (1991) His evidence "offers little support for the stereotype of multiple-choice formats as measuring substantially different constructs (i.e., trivial factual recognition vs. higher order thinking processes" (p.89).

Lukhele also was interested in the value of multiple-choice vs. essay testing (1994). He asserted that essays take four to forty times as long to administer and are 100-1000 times more expensive to score. According to Lukhele, " Multiple-choice items give about twice the information as constructed response items in the same amount of testing time" (p.241). Although Lukhele felt multiple-choice items were suitable for measuring bits of knowledge, he recognized that they provided only a limited opportunity for demonstrating in-depth knowledge. Working with the AP Chemistry test and the AP U.S. History test, he found that in all cases the multiple-choice section of the test correlated more highly with the essay sections than the essay sections correlated with themselves.

A more recent study by Bridgeman (1994) compared the success in college of students who have high multiple-choice scores and low essay scores with those who have high essay scores and low multiple-choice scores. Focusing on English, history and biology, he found the college success of these two groups to be about equal, especially in courses where grades were not typically determined by multiple choice tests. Males tended to receive higher multiple-choice scores while females tended to receive higher essay scores no matter what racial/ethnic group.

The Educational Testing Service itself (1991) has looked at the correlation of multiple-choice scores to essay scores on the 1991 AP Language Examination:

Distribution of Scores
Section I (Multiple-Choice Questions)

Multiple-Choice	AP Grade Distribution					Total Percentage	
Score	1	2	3	4	5		
43-53	0	12	351	1,002	1,626	2,991	10.4%
37-42	0	120	1,569	2.204	869	4,762	16.6%
27-36	9	2,140	5,745	1,880	179	9,953	34.6%
12-26	613	6,830	2,209	81	0	9,733	33.9%
0-11	788	518	2	0	0	1,308	4.6%
Total	1,410	9,620	9,876	5,167	2,674	28,747	100%
	4.9%	33.5%	34.4%	18%	9.3%	100%	

(p.8)

The review of literature clearly supports the need for further research in the area of predictive student selection criteria. Unfortunately little research and

data have been compiled which thoroughly address the issue of the relationship between pretest scores and success on the actual AP examination to the relationship between pretest scores and actual AP Examination scores or the correlation between the multiple-choice component of the examination and the combined multiple-choice/essay score.

This study proposes that there will be a correlation between students' placement scores based on the first 50 questions in the 1991 Acorn multiple-choice test and students' passing rate on the 1992, 1995, and 1996 AP Language and Composition Examinations. The Acorn Book is defined by the literature as the *Advanced Placement Course Description: English Language and Composition/English Literature and Composition.* The Advanced Placement Language and Composition Examination is the annual examination produced and graded by the Educational Testing Service administered in individual schools in May to determine a student's chances of receiving college credit for high school work. Although individual colleges may set their own standards as to which scores will be applicable for college credit, for the purposes of this study, passing rate will be defined as the generally accepted scores of 3, 4, and 5.

The sample for this study consisted of 73 students primarily from middle to high economic neighborhoods who attended Marist High School, a Catholic boys' school located on Chicago's far southwest side. The school has approximately 1,400 students enrolled in college preparatory courses. The student population consists of roughly 98% Anglo-American, 1% Hispanic, and 1% other. The 73 students represented three entire classes -- 26 boys in the 1991/92 AP Language class, 25 boys in the 1994/95 class and 22 boys in the 1995/96 class.

Procedures

All sophomore boys in the Honors Program at Marist High School were administered the first 50 questions of the 1991 Acorn multiple-choice test during January 1991, 1994 and 1995. Those with multiple-choice scores of 20 or above were placed into a Junior Advanced Placement English Language and Composition class for the following academic year. In May of 1992, 1995, and 1996 they took the Advanced Placement Examination in English Language and Composition to determine whether they would receive college credit for their high school work. The years 1992 and 1993 were eliminated from the study because during these years the school experimented with alternate placement criteria.

As a placement test, questions 1-50 of the 1991 Acorn multiple-choice test were used for all three groups. In May of 1992, 26 students took the 1992 AP Language and Composition Examination. In May of 1995, 25 students took the '95 AP Language and Composition Examination, and in May of 1996, 22 students took the AP Language and Composition Examination. Estimated consistency of this examination is 85% for the 2-3 boundary and 82% for the 3-4 boundary.

As a first step, scores were grouped to allow for variation within a range. These groupings were listed forming a vertical axis from low to high. The number of students achieving these scores were compared to the number of students who passed the AP examination in each group.

After this, the findings were tabulated in terms of means and standard deviations. The Pearson Product-Moment Coefficient test was employed at the .05 level of confidence to determine statistical significance of the findings.

Findings

In the academic year 1991/92 four students placed in the 30-34 scoring range on the Acorn pretest. 100 % of these students achieved passing grades of 3 or higher on the 1992 AP Language Examination. Six students placed in the scoring range of 25-29. 100% of students in this range also passed the AP Language Examination with a score of 3 or higher. 16 students placed in the 20-24 range on the pretest. Only ten of these students (67%) achieved passing grades of 3 or higher on the AP Language Examination.

In the academic year 1994/95 three students placed in the 30-34 scoring range on the Acorn pretest. 100% of these students achieved passing grades of 3 or higher on the 1995 AP Language Examination. Fourteen students placed in the scoring range of 25-29. Eleven of these (78%) passed the AP Language Examination with a score of 3 or higher. Seven students placed in the 20-24 range on the pretest. Only five of these (71%) achieved a passing grade of 3 or higher on the AP Language Examination.

In the academic year 1995/96 no students placed in the 30-34 scoring range on the Acorn pretest. Fourteen students placed in the 25-29 range. Thirteen of these (93%) achieved a passing score of 3 or higher on the 1996 AP Language Examination. Eight students received a pretest score of 20-25. Six of these (75%) achieved a passing grade of 3 or higher on the AP Language Examination.

These results indicate that the Acorn multiple-choice scores can be used as predictors of student success on the AP Language Examinations. The higher

the score on the pretest, the more likely it is that a student will pass the AP Language Examination. Scores in the high ranges (30-34) were the best predictors of success as 100% of students in that range passed the AP Language Examination with scores of 3 or higher during the years of the study. The scoring range of 25-29 indicated less likelihood of success as the average passing rate of that range over the three years was 84%. Scores of 20-24 indicated the least likelihood of student success on the AP Language Examination as the average passing rate from that range was only 71%.

CORRELATION OF ACORN TEST SCORES TO PASSING RATE
Table 1

1991/92 Acorn Test Scores

Scores	Students Achieving This Score	Students Passing the AP Exam	Percentage
30-34	4	4	100%
25-29	6	6	100%
20-24	16	10	62%

1994/95 Acorn Test Scores

Scores	Students Achieving This Score	Students Passing the AP Exam	Percentage
30-34	3	3	100%
25-29	14	11	78%
20-24	7	5	71%

1995/96 Acorn Test Scores

Scores	Students Achieving This Score	Students Passing the AP Exam	Percentage
30-34	0	0	0
24-29	14	13	93%
20-24	8	6	75%

Although the Acorn multiple-choice scores worked well as indicators of probability of success on the AP Language Examination, as might be expected, they were not reliable predictors of final grades on that test. Since one of the goals of an AP course is to develop the students' abilities, it was heartening to note that the correlation coefficient between Acorn placement scores and the actual AP Examination grades was .28 in 1993 (when r=.38 at 5% confidence level), .12 in 1995 (when r=.40 at 5% confidence level) and .29 in 1996 (when r=.42 at 5% confidence level). The conclusion of this study is that the Acorn multiple-choice scores can be used to predict general success levels, but not actual grades.

CORRELATION OF ACORN TEST SCORES TO AP GRADES
Table 2

1992/93 Results

	Mean	S.D.	Correlation with Acorn r	r^2
1992 Acorn M.C. Test	24	3.43		
1993 AP Lang. Exam.	3.15	.92	.28	8%

1994/95 Results

	Mean	S.D.	Correlation with Acorn r	r^2
1994 Acorn M.-C. Test	26	3.42		
1995 AP Lang. Exam.	4	1.29	.12	2%

1995/96 Results

	Mean	S.D.	Correlation with Acorn r	r^2
1995 Acorn M.C. Test	25	4.68		
1996 AP Lang. Exam.	3.5	.84	.29	8%

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