A STUDY INVESTIGATING A CORRELATION BETWEEN ENROLLMENT IN SPANISH CLASS AND ENGLISH II END OF COURSE TEST SCORES

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ABSTRACT

The purpose of this study was to investigate a possible correlation between enrollment in a Spanish course and English II End-of-Course (EOC) Test scores at DeKalb High School during the 2010-2011 school year. The findings answer the research question, “Is there a difference between English II End-of-Course test scores for those students who are enrolled in Spanish and those who are not?” The data regarding enrollment status in a Spanish course and EOC test scores was compared using t-Test analysis with A Statistical Package (ASP) Software. A significant difference was found between the two sets of students, and those enrolled in a Spanish course scored higher on the English II EOC than those who were not. This result should affect student course placement in Spanish and Spanish course curriculum.
INTRODUCTION

This study will test to determine if enrollment in a Spanish course has an effect on student English II End-of-Course test scores.

Background, Issues and Concerns

DeKalb High School, a rural school in Northwest Missouri, strives to promote cross-curricular goals in order to help improve test scores. This study will investigate whether or not enrollment in a foreign language course affects academic success in English communication arts, as measured by End-of-Course test scores in the subject of English II. If a relationship is found, either positive or negative, schools can adjust curricula and student course placement policies accordingly.

Practice under Investigation

This study will investigate whether or not enrollment in Spanish promotes student success on the English II End-of-Course test, therefore justifying or nullifying cross-curricular practices and student placement in Spanish courses.

School Policy to be Informed by Study

The policy regarding curriculum development of Spanish courses will be informed by this study as well as the policy regarding student course placement.
Conceptual Underpinning

There are many examples of studies whose results have shown that there is a positive correlation between study of a foreign language and test scores in other subject areas. For example, Bournot-Trites and Tallowitz’ (2002) research concluded that a high proficiency in the L2 (second language) translates into higher proficiency in the L1 (first language) (p. 11). Not only can the study of a foreign language have positive effects on a student’s English language skills, but also in basic skill development, higher order thinking and abstract and creative thinking (“The Benefits,,” 2007). According to a study by Edmonton Public Schools in Canada, “Students who have studied a second language are noted to have higher scores on standardized tests in reading, language arts and mathematics than those who have not” (“Impact of,” 1999, p. 2). In addition to these facts, Peter Eddy, in his 1981 study, found that the longer a student studies a foreign language, the better their scores on standardized tests as measured by the SAT-Verbal and various sub-tests (p.103).

This evidence is important as school districts try to balance instructional time between subjects that are tested such as English Language Arts and Mathematics with non-tested courses such as foreign language. If there is proof that the study of a foreign language benefits students in other areas, the decision to devote time to foreign languages during the school day should be less complicated and difficult. Also, the area of foreign language study could serve as a great resource for teachers of other courses if cross-curricular standards are properly put into place and implemented.
**Statement of the Problem**

This study investigates how enrollment in a foreign language class affects academic achievement in the area of communication arts. The research will demonstrate if placing emphasis on foreign language is a positive or negative for high school students’ communication arts development.

**Purpose of the Study**

This study investigates whether or not students are benefiting academically in communication arts from taking Spanish. This information will help guide Spanish curriculum and student course placement procedures.

**Research Question**

Is there a difference between English II End-of-Course test scores for those students who are enrolled in Spanish and those who are not?

**Null Hypothesis**

There is no difference between English II End-of-Course test scores for those students enrolled in Spanish and those who are not.

**Anticipated Benefits of the Study**

This study will guide formation of Spanish course curriculum and student course placement.
Definition of Terms

Spanish: a course offered at DeKalb High School in levels 1-4 to students in grades 9-12.

End-of-course assessments: tests that the state of Missouri requires for students at the culmination of the classes of Algebra 1, Biology, English II and Government.

Summary

By examining student enrollment status in Spanish and their English II End-of-Course assessment scores, this study will determine whether there is a relationship between the two variables, and whether that relationship is positive or negative. This evidence will then assist schools in student course placement policies and Spanish curriculum development.
REVIEW OF LITERATURE

Many studies have been conducted analyzing the impact that foreign language study has on standardized test scores as well as success in other subjects in general. Such studies are used to determine the degree of inclusion of foreign language classes into elementary, middle and high school curricula. Many secondary schools require a foreign language component, while some do not, and much rarer is the requirement of foreign language in primary schools. Although the No Child Left Behind legislation of 2001 recognizes foreign language as a core subject, it is still often pushed to the background as schools focus on subject areas that are tested, whose results are often tied to school funding. In Missouri, such assessments are called End-of-Course test, or EOCs, and are administered to students in secondary schools at the culmination of the following courses: algebra I, biology, English II and government.

There have been several documented benefits of the study of foreign languages. Students who study a foreign language demonstrate gains in English grammar, literacy and syntactic fluency as opposed to their non-foreign language classmates (Lide, 1983). Also, studying a foreign language promotes general cognitive development and native language skills (Schulz, 1999). According to Kathleen Marcos (1997), in her article, “Why, how and when should my child learn a second language?” learning a second language makes students more creative, contributes to improved overall school performance and problem-solving skills and teaches students much about the structure of the English language (p. 4-5). However, other studies have shown that the effect is more prevalent in the development of English vocabulary than in English structure use, as shown by increased SAT vocabulary sub-scores by foreign language students, and that the use of cognates may account for this finding (Eddy, 1981). The positive outcomes of foreign language study are also noticeable to the individual student as they look back on their

Although the use of cognates is often stated as one of the key factors contributing to improvement of native language skills by studying a foreign language, there are many other skill sets developed by second language study that transfer into other areas. For example, the process of extracting meaning from a text is learned when taking a foreign language and transferred into native language reading comprehension skills, and first and second language literacy skills are interdependent, meaning there are examples of a ‘common underlying proficiency’ (Brounott-Trites & Tallowitz, 2002). Also, students in foreign language classrooms often acquire language-learning strategies that can aid first language literacy. According to Thomas Cooper (1987) in his article, “Foreign Language Study and SAT-Verbal Scores,” these strategies include learning vocabulary in context, using contextual clues to guess unknown meanings in passages, developing a sensitivity for subtle differences in word meanings and reading with careful attention to style and thematic development (p. 386).

Throughout several studies, foreign language learners have consistently scored higher than control groups on standardized tests in core subject areas (“The Benefits,” 2007). An example of this would be the aforementioned study by Thomas Cooper in which SAT-verbal and mathematics scores were compared for groups of students had taken a foreign language and those who had not. Cooper’s research revealed a positive correlation between the variables. Students in the control group, those who had not taken any foreign language courses, had an average score of 366 for the SAT-verbal test and 409 for the SAT math test. These scores increased proportionately with the number of years of foreign language study a student had
Enrollment in Spanish effect on English EOC Scores

For example, students with one year of foreign language study scored 378 and 416 respectively for the verbal and math tests, those with two years scored 417 and 463, and those students who had taken five or more years of a foreign language scored 504 and 535 (p. 387). Furthermore, Cooper found that students who had taken four or five years of a foreign language scored higher on the SAT-verbal than those students who took four or five years of any other subject such as four or five years of English, math, biology or social sciences (p. 381).

It is a common argument to attribute results such as those obtained in Cooper’s study to the fact that the difference in scores shows that ‘elitist, upper-middle class and otherwise high-scoring students took more foreign language courses’ (Lide, 1983). This is likely, given that many secondary schools do not require foreign language study, reserving it, often times, for those taking a college preparatory class load. Cooper adjusts for this phenomenon by comparing the students’ reading subtest scores of the California Achievement Test, an assessment in which all students included in the study had taken prior to any foreign language study. These scores served as a basis for all students’ verbal ability allowing Cooper to adjust the test scores to take into consideration the difference in verbal ability as measured before introduction to foreign language learning. After the adjustment, foreign language remained to be an indicator of higher test scores. Cooper found that economic status was not a relevant variable in this study, but did find that the language studied affected test scores. For example, the languages that most positively affected test scores from greatest to least were German, French, Latin and then Spanish (p. 385). A previous study by Peter Eddy (1981) found that the language studied was not a significant variable as the study of all foreign languages positively correlates with test scores (p. 107).
Much of the research on this topic has been focused on elementary schools. This can be attributed to the fact that children are more receptive to learning languages (Stewart, 2005). The discussion of whether or not to take time out of the school day to study language is especially prevalent at this level as children are still working on perfecting their native language. Studies have shown, however, that students who study a foreign language in elementary school has had more success on achievement tests in the areas of grammar, punctuation, vocabulary and reading comprehension than their non-foreign language classmates (Ellison, Flores & Johnson, 1961). Also, children who study a foreign language are better problem solvers, more creative and ‘develop new perspectives and depth of understanding about the vocabulary and structure of their first language’ (Stewart, 2005, p. 14). In a 2010 study by Robert Lafayette and Carolyn Taylor (2010), students in grades four and five who had studied a foreign language scored significantly better than their classmates who had not studied a foreign language on standardized tests in the areas of English language arts, math, science and social studies.

A case had also been made for starting foreign language study as early in school as possible. For example, a study in Edmonton Public School in Canada found that students who began studying a foreign language in kindergarten or first grade performed better than those students who began foreign language study in grade four, and significantly better than those who did not begin to study a foreign language until grade seven (“Impact of,” 1999). This study also concluded that all second language programming promotes reading skills, communication skills and English vocabulary, prompting the researchers to state, “The argument, therefore, that postulates learning a second language inhibits development of first language is not only false, but research finds the very opposite true” (p. 2).
Studies that have been conducted in Missouri show similar results. For example, a study done at an independent public charter school in Kansas City where French is used for instruction in most subject areas showed that the students gained in their achievement test scores and bettered the scores of students in comparable school settings where students did not study a foreign language (Stewart, 2005). Another study conducted by Scott Olsen and Lionel Brown (1992) compared ACT English and math scores of all students who applied to Northeast Missouri State University from 1981 to 1985. They found that students who had taken a foreign language scored higher in both areas than those who had not. They also took into account class rank and amount of previous English and math coursework to come up with this conclusion: “…regardless of ability level as indicated by class rank, regardless of the amount of English course work taken, and regardless of the amount of mathematics course work taken, students who had studied a foreign language performed significantly higher on the ACT than did those who had not studied a foreign language” (p. 49).

Although many primary as well as secondary schools are reluctant to include a mandatory language program into curricula because of increased math and reading demands due to No Child Left Behind, some schools have chosen to jump on board with foreign language education as a result of the data confirming that learning a foreign language increases achievement in other areas. Glastonbury Public Schools in Connecticut is an example of a district that has made a commitment to learning languages. One teacher at the district, Ms. Campbell, says that language study is not an ‘afterthought,’ and that, “Here, foreign language is a commitment that’s as important as math and science and history and English” (Manzo, 2007, p. 3). As more positive effects of foreign language study are confirmed, many more schools will likely shift toward the model of Glastonbury Schools.
RESEARCH METHODS

*Research Design*

The independent variable for this study was enrollment status in Spanish, and the dependent variable was End-of-Course test scores in the area of English II. A t-Test was performed to compare English II EOC scores of those who were enrolled in Spanish during the 2010-2011 school year and those who were not. An Alpha level of 0.25 was used to determine if the results were significant.

*Study Group Description*

The study group included all students who took the End-of-Course assessment for the English II during the 2010-2011 school year at DeKalb High School. This group included 30 students. Twenty of these students were enrolled in Spanish class during the 2010-2011 school year and 10 were not. Overall, the group consisted of 11 males and 19 females. Of those enrolled in Spanish, seven were male and 13 female. All students were sophomores.

*Data Collection and Instrumentation*

A list of students who took the English II EOC assessment and their scores was compiled using Microsoft Excel and cross-referenced with names on Spanish class rosters for the 2010-2011 school year. A list of 2010-2011 English II EOC scores were acquired from the building principal.
Statistical Analysis Methods

A Statistical Package (ASP) software was used to perform a t-Test that compared the variables of Spanish enrollment status and English II End-of-Course test scores. Microsoft Excel was used to compile initial data.
In order to investigate a possible correlation between enrollment in a Spanish course and English II End-of-Course (EOC) test scores during the 2010-2011 school year, the EOC scores of those enrolled in a Spanish class were compared with those not enrolled in a Spanish class using t-test analysis as shown in figure 1. This study included 20 students who were enrolled in Spanish and 10 who were not. The mean score of those enrolled in Spanish was 27.25 and the mean score of those not enrolled in Spanish was 22.5. The Mean D was 4.75, the t-test result was 2.96 and the df was 28. Because the p-value of 0.006 is less than the Alpha level of 0.25, the null hypothesis was rejected. This means there was a significant difference in English II EOC test scores between students enrolled in Spanish and students not enrolled in Spanish during the 2010-2011 school year as evidenced by the data showing that the mean score for those enrolled was 27.25 and the mean score for those not enrolled was 22.5.
CONCLUSIONS AND RECOMMENDATIONS

Based on the results of this study, it is confirmed that enrollment in Spanish can have a positive effect on English II End-of-Course test scores. The average scores of those enrolled in Spanish was nearly five points higher than those not enrolled in Spanish. It is apparent that skills learned in the foreign language classroom can be transferred to promote success on English assessments. This confirms the findings from various studies on the topic. Enrollment in Spanish correlates positively with assessment scores in other subject areas.

This study can serve as a guide for determining if and when to enroll students in Spanish class. It is clear that enrollment in Spanish has a positive effect in the area of English Language Arts. Therefore, based on this evidence, DeKalb High School should consider placing all students in at least one year of Spanish class.

Because students are tested in English at the sophomore level, it would be advisable to enroll students in Spanish class during their freshman and sophomore years to better ensure that the positive attributes acquired in Spanish class can be an asset when the student takes the English II EOC at the culmination of their sophomore year. Although most students who plan on taking Spanish have done so by their sophomore year, some wait until their junior or senior year. A policy requiring students to enroll in Spanish as early in their high school career as possible would be effective. Also, it would be beneficial to consider teaching Spanish at a younger age, such as middle school or possibly even elementary school.

Although a relationship between Spanish and English is the most obvious, studies have been done that show learning a foreign language has a positive effect in other areas as well. Future studies examining a possible correlation between enrollment in Spanish class and EOC test score in other areas such as Algebra I or Biology are advisable.
REFERENCES


