

ABSTRACT

DISSERTATION: Exploring Differences in Student Achievement in Advanced Placement Coursework in Response to an Academic Support System Grant in Alaska

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This study explored the relationship between a National Math and Science Initiative (NMSI) College Readiness Program (CRP) Grant and student achievement outcomes in Advanced Placement (AP) courses and on AP Exams in four Alaska high schools. A logistic regression model returned the odds of students obtaining an A or B versus a C, D, or F in an AP course, and earning a passing score versus a failing score on the exam. The results indicate there are more frequent significant differences in exam scores than in course grades based on the independent variables in the regression model. Free-and-reduced lunch (FRL) status and a school's location were the most frequent predictors, followed by gender, grant status, and ethnicity. The lack of difference in AP course grades suggests that non-White, female students receiving FRL, attending an urban high school with the grant may be able to achieve at levels comparable to their more advantaged peers. Furthermore, the percent growth in exam pass rate at the grant schools in the study was higher than the non-grant schools and similar to other state-level studies of the NMSI CRP grant. Beyond the consistent increases in exam pass rate at grant schools, enrollment also grew by 13% for underrepresented students at the urban grant school and by 6% at the suburban grant school. These results can be understood in context of

Bioecological Systems Theory, which posits that individuals who experience interactions that underlie development in one environment, which they have not routinely experienced in other environments, will show greater development. In light of this study, this means underserved students may be able to close the achievement gap to their more affluent peers if they have the necessary academic support. As a result, this study supports reducing barriers to advanced course enrollment, and creating systems to extend time for classroom instruction and teacher professional development.