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Using High School Data to Explore Early College Success on Pohnpei, Federated States of Micronesia

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Using High School Data to Explore Early College Success on Pohnpei, Federated States of Micronesia

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As of 2010, about 15 percent of residents older than age 25 on Pohnpei in the Federated States of Micronesia (FSM) had completed an associate degree or higher. To increase the number of college graduates, the Pohnpei Department of Education and the College of Micronesia–FSM are working together to improve the early college outcomes of their students. They noted that in 2018, 42 percent of applicants from Pohnpei to the College of Micronesia–FSM were not admitted or were admitted to a one-year nondegree certificate program. No studies have examined possible links between high school academic preparation in the FSM and early college success outcomes, such as the college entrance test result. Examining these links could inform strategies to improve degree attainment. Using data on Pohnpei public high school graduates from 2016 to 2018 provided by the Pohnpei Department of Education and the College of Micronesia–FSM, this study examined high school academic preparation characteristics and college student characteristics to determine whether they are associated with five early college success outcomes: College of Micronesia–FSM Entrance Test result; placement in credit-bearing math, reading, and writing courses; and persistence to a second year. The study found that high school grade point average was positively associated with all five outcomes. Students who wereenrolled in the high school academic coursework track were more likely than students who were enrolled in the business and vocational tracks to be admitted to a degree program and to enroll in credit-bearing reading courses. College students who first enrolled at the College of Micronesia–FSM in the summer term immediately after high school graduation were more likely to persist to a second year than those who first enrolled in the fall term.

Why this study?

This study focused on early college success on Pohnpei, one of four states in the Federated States of Micronesia (FSM) and home to 39 percent of the FSM's school-age population (FSM National Department of Education, 2018). The FSM has one public postsecondary institution, the College of Micronesia–FSM, which offers one-year nondegree certificates, two-year associate degrees, and as of 2019 a four-year bachelor's degree in elementary education. The College of Micronesia–FSM has a campus for each of the four states, plus an additional national campus located on Pohnpei (College of Micronesia–FSM, 2020a).

Earning a college degree has increasingly become a requirement for many occupations; moreover, in the United States, individuals holding a college degree tend to have higher wages than individuals holding only a high school diploma (Abel & Deitz, 2014). Attaining a college degree also can equip graduates with professional skills, such as medical training, that benefit local communities. As of 2010, only 15 percent of Pohnpei residents older than age 25 have completed an associate degree or higher (FSM Office of Statistics, Budget, Overseas Development Assistance and Compact Management, 2010). This low rate of college degree attainment has led to a shortage of qualified professionals in a variety of sectors, including health care and education. To fill these workforce gaps, Pohnpei has had to rely on foreign workers. Increasing the number of Pohnpei residents who earn a college degree could help build the state's skilled labor force and would likely increase its economic independence (Rothwell, 2015).

The Pohnpei Department of Education and the College of Micronesia–FSM are working together to improve students' early college outcomes. Early college success

For additional information, including background on the study, technical methods, supporting analysis, and sensitivity analyses, access the report appendixes at https://go.usa.gov/x6TNx.

is a high-priority issue on Pohnpei, as 42 percent of Pohnpei students who took the College of Micronesia–FSM Entrance Test in 2018 either were not admitted (10 percent) or were admitted to a certificate program (32 percent) rather than to a degree program (FSM National Department of Education, 2018).[1] Additionally, 42 percent of enrolled full-time students did not persist to a second year of college (National Center for Education Statistics, 2020). Further, many students admitted to an associate degree program were required to take developmental (non-credit-bearing) courses. Students who are placed in developmental courses in their first year of college often earn fewer college credits than their peers who are placed in credit-bearing courses, take longer to obtain a degree, and are less likely to earn a degree (Hodara & Cox, 2016; Jaggars & Stacey, 2014; Mejia et al., 2016). High rates of enrollment in developmental courses suggest that many Pohnpei high school graduates might be academically underprepared to complete postsecondary coursework.

Five previously published Regional Educational Laboratory Pacific studies have investigated college course placement and academic factors that support students' college readiness. The first study found that 92 percent of graduates from the Commonwealth of the Northern Mariana Islands Public School System were placed in developmental math courses in college (Herman, Scanlan, & Carreon, 2017). The second found that students were more likely to be placed in credit-bearing math courses in their first year of college if they were enrolled in Advanced Placement courses in high school, had higher high school grade point averages and standardized test scores, and enrolled in more advanced high school math courses (Herman, Carreon, et al., 2017). The third found that 30 percent of students on Guåhan (Guam) enrolled in only credit-bearing math and English courses during their first year of college, 43 percent earned all credits attempted during their first semester of college, and 74 percent persisted to a second year of college (Shannon, Cosby, Rentz, Henschel, Arens, & Holquist, 2021). The fourth found that 5 percent of students in the Republic of the Marshall Islands were placed in credit-bearing math and English courses, 19 percent earned all attempted credits during the first year of college, and 53 percent persisted to a second year of college (Shannon, Cosby, Rentz, Henschel, Arens, & Crowder, 2021). The fifth found that 60 percent of students in Palau earned a first-year college grade point average of 2.0 or higher and 56 percent persisted to a second year (Rentz et al., 2021). However, a similar study has not been conducted for Pohnpei. Because the cultures and context of the Commonwealth of the Northern Mariana Islands, Guåhan, Palau, and the Republic of the Marshall Islands differ from those of Pohnpei, those studies might not reflect college success at the College of Micronesia–FSM.

Administrators at the Pohnpei Department of Education and the College of Micronesia–FSM want to better understand the high school experiences of graduates who are more prepared to succeed at the college based on measures of early college success, including college entrance test result, placement in credit-bearing courses, and persistence to a second year of college (see box 1 for definition of key terms). Educators could use information about which students are more likely to experience early college success to better support all students in meeting those outcomes. (See appendix A for additional information about the context for this study.)

Box 1. Key terms

College student. A student who graduated from a public high school on Pohnpei between spring 2016 and spring 2018 and enrolled in the College of Micronesia–FSM in Achieving College Excellence (a series of developmental courses) or directly in a two-year associate degree program in the summer or fall term immediately after high school graduation. Students who enrolled in a one-year nondegree certificate program are excluded because the study outcomes either are not applicable or would be a negative measure of success for those students.

High school academic preparation characteristics

High school grade point average. A student's unweighted cumulative high school grade point average at graduation, ranging from 0 to 4.

1. These percentages vary from the current study's findings because these numbers include students from private schools, people applying after high school graduation, and students from other states, who were not included in the study's sample.

High school coursework track. The series of courses a student was enrolled in during grades 11 and 12. Public high schools on Pohnpei offer three coursework tracks—academic (college preparatory), business, and vocational, which are also referred to as "high school majors" on Pohnpei. Students can enroll in only one track and must do so in grade 11. The track that students enroll in affects the types of courses they take. Students who are enrolled in the academic coursework track might take higher-level math courses than students who are enrolled in the business and vocational coursework tracks. Likewise, students who are enrolled in the vocational coursework track take more vocational course credits than students who are enrolled in the academic and business coursework tracks.

College student characteristics

Enrollment type. Whether a student was enrolled in the College of Micronesia–FSM as a full- or part-time student.

Placement type. Whether a student started enrollment at the College of Micronesia–FSM in Achieving College Excellence (see College of Micronesia–FSM Entrance Test result below) or directly in a degree program.

First term of enrollment. Whether a student started enrollment at the College of Micronesia–FSM in the summer or fall term directly after high school graduation.

Early college success outcomes

College of Micronesia–FSM Entrance Test result. One factor in college admission and placement decisions at the College of Micronesia–FSM. The entrance test was developed by the college to assist in the admissions process by helping determine which students are college ready in math and in English. It comprises three subtests: math, English reading, and English writing (see College of Micronesia–FSM, 2020b, for how the results were determined from the subtest scores). The possible results are:

- **Not admitted result.** Student is not considered for admission to the college.
- **Certificate result.** Student scored high enough on the test to be considered for admission to a certificate program.
- **Achieving College Excellence result.** Student scored high enough to be conditionally admitted to a degree program but must successfully complete one or two series (depending on student placement) of six-week expedited developmental math and English courses (called Achieving College Excellence) before being admitted to a degree program.
- **Degree result.** Student scored high enough to be considered for admission to a two-year associate degree program. Students with this result might be placed in developmental or credit-bearing courses based on their subtest scores.

The entrance test result does not guarantee admission; students must also meet other admission requirements, which include graduating from high school or earning a GED, having a minimum high school grade point average of 2.0 on a 4.0 scale, and being accepted by the College's Committee on Recruitment, Admission, and Retention.

Placement in credit-bearing courses. Whether a student was placed directly in a credit-bearing course at the College of Micronesia–FSM based on their College of Micronesia–FSM Entrance Test subtest score. A course is considered credit-bearing if earned credits count toward a degree.[1] Placement in credit-bearing courses was examined separately for math, reading, and writing.

Persistence to a second year of college. Whether a student in Achieving College Excellence developmental courses or a degree program persisted to a second year at the College of Micronesia–FSM. Because the sample included only students who initially enrolled in the summer or fall term, persistence was calculated as still being enrolled in the college in the fall term of the next calendar year. Students who transferred to another postsecondary institution were not considered to have persisted to a second year.

Analytic terms

Positive association. When a certain high school academic preparation characteristic or college student characteristic is associated with a better early college success outcome after high school student characteristics are controlled for.

Statistically different. When a characteristic is associated with a statistically different likelihood of achieving an outcome from that of the reference group, based on a regression model. This term is similar to statistical significance but is based on a Bayesian framework. Details are provided in appendix B.

Note

1. Credit-bearing courses at the College of Micronesia–FSM provide credit toward a degree. In contrast, developmental courses do not provide credit toward a degree but can be used toward a certificate. Developmental courses may be prerequisite courses if students are not placed in credit-bearing courses.

Research questions

This study examined the extent to which high school academic preparation for Pohnpei public high school graduates and college student characteristics are associated with early college success outcomes at the College of Micronesia–FSM. The measures used in the study were based on research that has demonstrated a link between college success and both high school academic preparation and college student characteristics (Hodara & Cox, 2016; Kreisman & Stange, 2019; Tucker & McKnight, 2019; Turk, 2018; Westrick et al., 2015) and available data from the Pohnpei Department of Education and the College of Micronesia–FSM. The following measures were used:

- High school academic preparation characteristics: grade point average and coursework track.
- College student characteristics: enrollment type, placement type, and first term of enrollment.
- Early college success outcomes: result on the College of Micronesia–FSM Entrance Test, placement in credit-bearing courses, and persistence to a second year of college.

The study addressed the following research questions and subquestions:

1. What percentage of public high school graduates received each of the four possible results on the College of Micronesia–FSM Entrance Test (not admitted result, certificate result, Achieving College Excellence result, or degree result)?

    1a. After high school student characteristics are controlled for, which high school academic preparation characteristics are associated with entrance test results?

2. What percentages of college students were placed in credit-bearing math, reading, and writing courses at the College of Micronesia–FSM?

    2a. After high school student characteristics are controlled for, which high school academic preparation characteristics are associated with placement in credit-bearing courses?

3. What percentage of college students persisted to a second year?

    3a. After high school student characteristics are controlled for, which high school academic preparation characteristics and college student characteristics are associated with persistence to a second year?

For research questions 1 and 1a the study analyzed predictors of results on a college entrance test, the College of Micronesia–FSM Entrance Test, in a sample of 1,146 students who graduated from a Pohnpei public high school between spring 2016 and spring 2018 and took the test. For research questions 2, 2a, 3, and 3a the study analyzed predictors of college success in a subset of 327 of those students who enrolled in the college in the summer or fall term immediately after high school graduation, either in Achieving College Excellence (a series of developmental courses designed to help students enter a degree program) or directly in a degree program. The data sources, samples, and methods used in the report are discussed in box 2 and are detailed in appendix B.

Box 2. Data sources, sample, and methods

Data sources. The Pohnpei Department of Education provided data on high school course enrollment, cumulative grade point averages, and student demographic characteristics. The College of Micronesia–FSM provided data on entrance test results, course placement, and student persistence. A complete list of variables (referred to as characteristics) examined in this study is in appendix B.

Sample. The sample for research questions 1 and 1a comprised students who graduated from one of the three public high schools on Pohnpei between spring 2016 and spring 2018 and took the College of Micronesia–FSM Entrance Test in grade 12. This sample included 1,146 students (88 percent of Pohnpei public high school graduates). The sample for research questions 2, 2a, 3, and 3a comprised students in the sample for research question 1 who were admitted to Achieving College Excellence (a series of developmental courses) or a two-year associate degree program and enrolled in the college in the summer or fall term immediately after high school graduation. Students who enrolled in a one-year nondegree certificate program were excluded. This sample included 327 students (29 percent of the students in the sample for research question 1 and 25 percent of Pohnpei public high school graduates). For additional details, see appendix B.

Methodology. The study team calculated the percentages of public high school graduates or college students who achieved each early college success outcome: entrance test result, placement in credit-bearing courses, and persistence to a second year of college (research questions 1, 2, and 3). The study team used Bayesian mixed effect regression analyses to estimate the association between high school academic preparation characteristics and all five early college success outcomes (research questions 1a, 2a, and 3a) and the association between college student characteristics and persistence to a second year of college (research question 3a) after student gender and ethnicity are controlled for. For predictors that had statistically different distributions, the study team calculated the likelihood of the outcome at specified levels of the predictor, holding constant all other variables in the model (including such high school student characteristics as gender and ethnicity). Bayesian models were used because they allow for complex regression models with smaller sample sizes and because they enable researchers to produce measures of uncertainty that might be of greater use to policymakers than those produced using traditional statistical methods (Kruschke & Liddell, 2018).

For additional information on the study's methodology, see appendix B. Detailed results are presented in appendix C, and results from sensitivity analyses are in appendix D. There were no substantive differences between the results presented in the main report and the results of the sensitivity analyses.

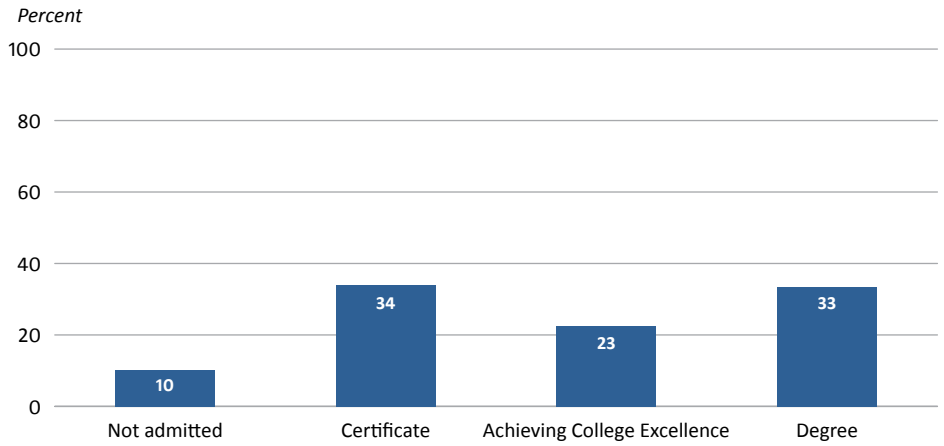
Findings

This section describes findings for the study's research questions.

One-third of Pohnpei high school students who took the College of Micronesia–FSM Entrance Test received a high enough result to be considered for direct admission to a degree program

About 33 percent of high school students who took the College of Micronesia–FSM Entrance Test received a high enough result to be considered for admission to a two-year associate degree program, 34 percent received a high enough result to be considered for a one-year nondegree certificate program, and 23 percent received a high enough result to be considered for Achieving College Excellence, which offers conditional admission to a degree program pending completion of developmental courses (figure 1; see also table C3 in appendix C). About 10 percent did not receive a high enough result to be considered for admission.

Figure 1. One-third of Pohnpei high school students who took the College of Micronesia–FSM Entrance Test received a high enough result to be considered for direct admission to a degree program, spring 2016–spring 2018



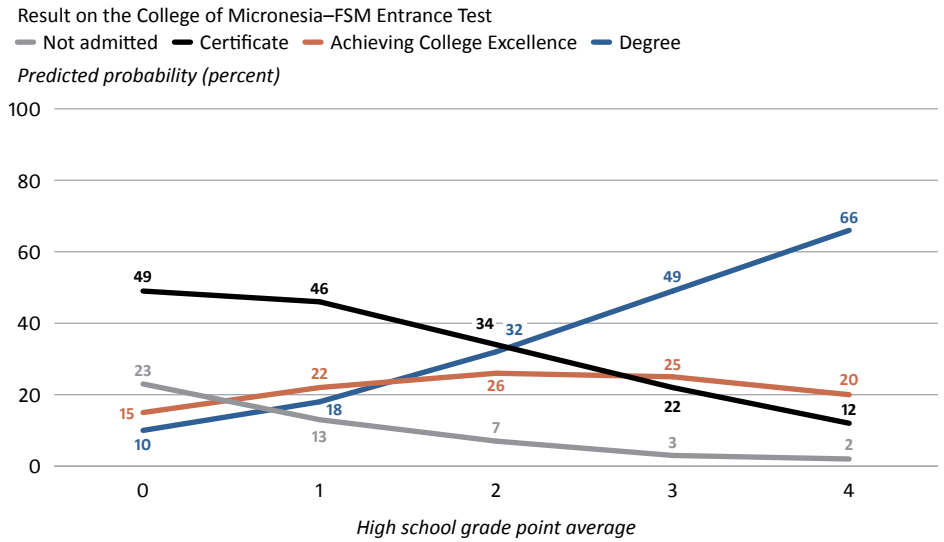
Note: *n* = 1,146 students who graduated from a Pohnpei public high school between spring 2016 and 2018 and took the College of Micronesia–FSM Entrance Test in grade 12. The order of the bars represents the order of the College of Micronesia-FSM Entrance Test results presented in box 1.

Source: Authors' analyses of data from the Pohnpei Department of Education and the College of Micronesia–FSM for public high school graduates from 2016 to 2018.

High school grade point average was positively associated with receiving a high enough result on the College of Micronesia–FSM Entrance Test to be considered for direct admission to a degree program

The probability of receiving a high enough result on the College of Micronesia–FSM Entrance Test to be considered for admission to a two-year associate degree program varied by students' high school grade point average

Figure 2. High school grade point average was positively associated with results on the College of Micronesia–FSM Entrance Test, spring 2016–spring 2018



Note: *n* = 1,146 students who graduated from a Pohnpei public high school between spring 2016 and 2018 and took the College of Micronesia–FSM Entrance Test in grade 12. Predicted probabilities are calculated from regression models (see appendix B for details on the calculations and tables C5 and C10 in appendix C for detailed results). High school grade point average had a statistically different posterior distribution from that of the reference group.

Source: Authors' analyses of data from the Pohnpei Department of Education and the College of Micronesia–FSM for public high school graduates from 2016 to 2018.

(figure 2; see also tables C5 and C10 in appendix C). High school students with higher grade point averages were more likely than students with lower grade point averages to receive the degree result. The probability was 32 percent for students with a high school grade point average of 2.0, 49 percent for students with a grade point average of 3.0, and 66 percent for students with a grade point average of 4.0. In contrast, students with a grade point average of 2.0 or below were most likely to receive the certificate result.

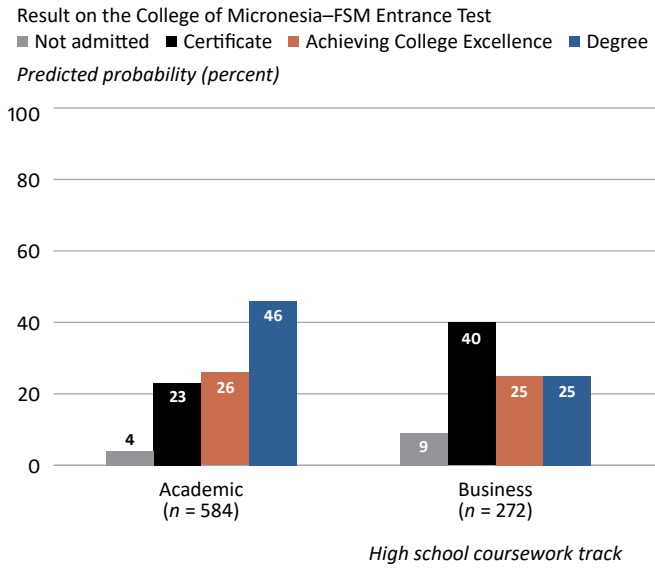
Enrollment in the high school academic coursework track was positively associated with receiving a high enough result on the College of Micronesia–FSM Entrance Test to be considered for direct admission to a degree program

The probability of receiving a high enough result on the College of Micronesia–FSM Entrance Test to be considered for admission to a two-year associate degree program varied by a student's high school coursework track (figure 3; see also tables C5 and C10 in appendix C). High school students who were enrolled in the academic coursework track were more likely than students who were enrolled in the vocational and business coursework tracks to receive the degree result. The probability was 19 percent for students who were enrolled in the vocational coursework track, 25 percent for students who were enrolled in the business coursework track, and 46 percent for students who were enrolled in the academic coursework track.

A majority of College of Micronesia–FSM students were placed in credit-bearing math courses, while smaller percentages were placed in credit-bearing reading and writing courses

Placement in credit-bearing reading and writing courses was much lower than placement in credit-bearing math courses (figure 4; see also table C4 in appendix C). About 69 percent of college students were placed in credit-bearing math courses, while 40 percent were placed in credit-bearing writing courses and 13 percent were placed in credit-bearing reading courses.

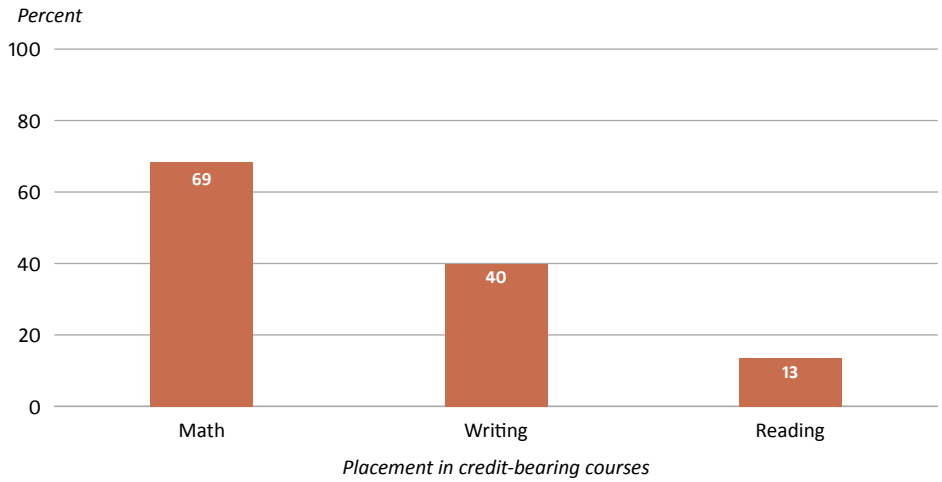
Figure 3. High school coursework track was associated with results on the College of Micronesia–FSM Entrance Test, spring 2016–spring 2018



Note: *n* = 1,146 students who graduated from a Pohnpei public high school between spring 2016 and 2018 and took the College of Micronesia–FSM Entrance Test in grade 12. Predicted probabilities are calculated from regression models (see appendix B for details on the calculations and tables C5 and C10 in appendix C for detailed results. The high school academic coursework track had a statistically different posterior distribution from that of the reference group.

Source: Authors' analyses of data from the Pohnpei Department of Education and the College of Micronesia–FSM for public high school graduates from 2016 to 2018.

Figure 4. More College of Micronesia–FSM students were placed in credit-bearing math courses than in credit-bearing reading or writing courses



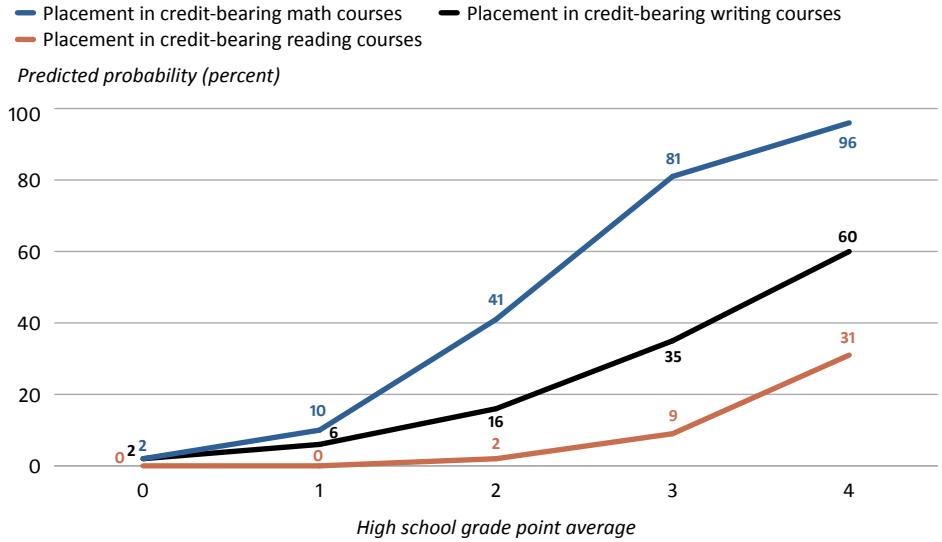
Note: *n* = 327 students who graduated from a Pohnpei public high school between spring 2016 and 2018 and enrolled in Achieving College Excellence or a degree program at the College of Micronesia–FSM in the summer or fall term immediately after high school graduation.

Source: Authors' analyses of data from the Pohnpei Department of Education and the College of Micronesia–FSM for public high school graduates from 2016 to 2018.

High school grade point average was positively associated with College of Micronesia–FSM students' placement in credit-bearing courses in all three subjects

College students with higher high school grade point averages were more likely than students with lower grade point averages to be placed in credit-bearing math, reading, and writing courses (figure 5; see tables C6–C8 and C11 in appendix C). The probability of being placed in credit-bearing math courses was 41 percent for students with a high

Figure 5. High school grade point average was positively associated with College of Micronesia–FSM students' placement in credit-bearing courses in all three subjects



Note: *n* = 327 students who graduated from a Pohnpei public high school between spring 2016 and 2018 and enrolled in Achieving College Excellence or a degree program at the College of Micronesia–FSM in the summer or fall term immediately after high school graduation. Predicted probabilities are calculated from regression models (see appendix B for details on the calculations and tables C6–C8 and C11 in appendix C for detailed results). High school grade point average had statistically different posterior distributions from that of the reference group for all three subjects.

Source: Authors' analyses of data from the Pohnpei Department of Education and the College of Micronesia–FSM for public high school graduates from 2016 to 2018.

school grade point average of 2.0, 81 percent for students with a grade point average of 3.0 (the average high school grade point average of the sample; see table C2), and 96 percent for students with a grade point average of 4.0.

The probability of being placed in credit-bearing reading and writing courses was low for all college students (see figure 5). Students with a high school grade point average of 2.0 had a 2 percent probability of being placed in credit-bearing reading courses and a 16 percent probability of being placed in credit-bearing writing courses. Even students with a grade point average of 4.0 had only a 31 percent probability of being placed in credit-bearing reading courses and a 60 percent probability of being placed in credit-bearing writing courses. That these probabilities are low for high-performing students could mean that those students are not prepared for college coursework or that the college's entrance test or placement criteria are not appropriately determining students' college readiness.

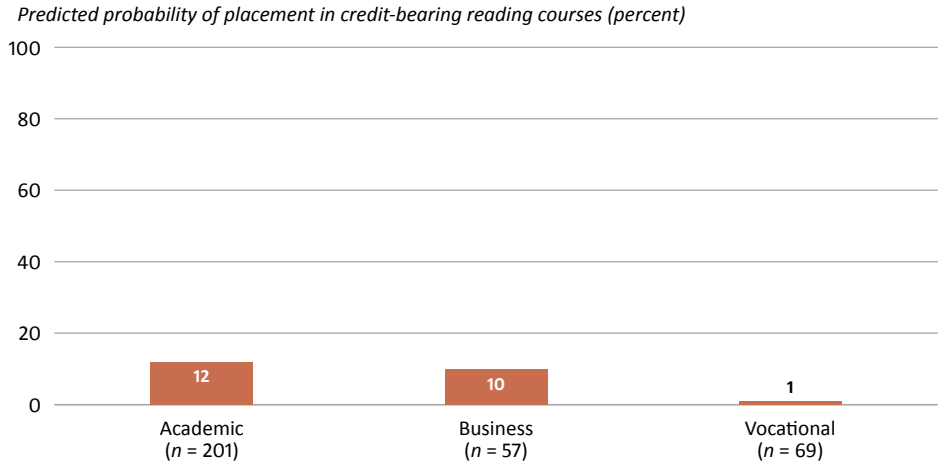
Enrollment in the high school academic coursework track was positively associated with College of Micronesia–FSM students' placement in credit-bearing reading courses but had no clear association with placement in credit-bearing math or writing courses

The probability of being placed in credit-bearing reading courses varied by high school coursework track (figure 6; see also tables C6–C8 and C11 in appendix C). College students who had been enrolled in the academic coursework track in high school were more likely than students who had been enrolled in the business or vocational track to be placed in credit-bearing reading courses. However, the probability was low for students in all tracks: 12 percent for students who had been enrolled in the academic coursework track, 10 percent for students who had been enrolled in the business coursework track, and 1 percent for students who had been enrolled in the vocational coursework track. High school coursework track had no clear association with placement in credit-bearing math or writing courses.

Nearly three-quarters of College of Micronesia–FSM students persisted to a second year

About 72 percent of college students persisted to a second year (see table C4 in appendix C). This percentage includes students who enrolled in the summer or fall term immediately after high school graduation, meaning that some students who persisted to a second year were enrolled for an additional term (summer).

Figure 6. Enrollment in the high school academic coursework track was positively associated with college students' placement in credit-bearing reading courses



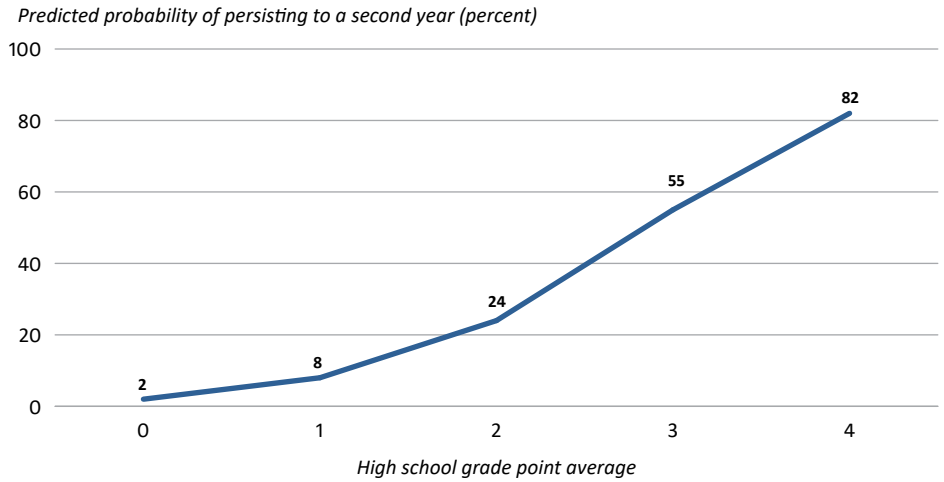
Note: *n* = 327 students who graduated from a Pohnpei public high school between spring 2016 and 2018 and enrolled in Achieving College Excellence or a degree program at the College of Micronesia–FSM in the summer or fall term immediately after high school graduation. Predicted probabilities are calculated from regression models (see appendix B for details on the calculations and tables C6–C8 and table C11 in appendix C for detailed results). Only the high school academic coursework track had a statistically different posterior distribution from that of the reference group.

Source: Authors' analyses of data from the Pohnpei Department of Education and the College of Micronesia–FSM for public high school graduates from 2016 to 2018.

High school grade point average was positively associated with College of Micronesia–FSM students' persistence to a second year

College students who had higher high school grade point averages were more likely than students with lower grade point averages to persist to a second year (figure 7; see also tables C9 and C12 in appendix C). The probability

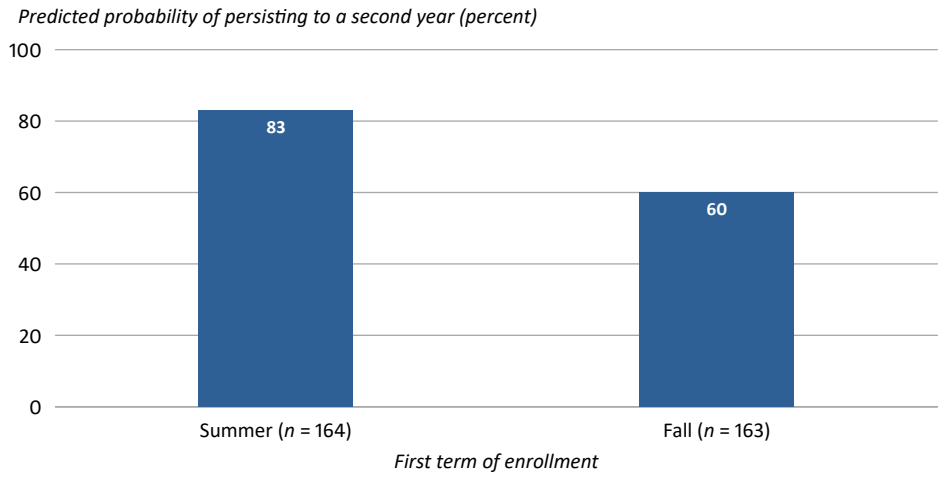
Figure 7. High school grade point average was positively associated with College of Micronesia–FSM students' persistence to a second year



Note: *n* = 327 students who graduated from a Pohnpei public high school between spring 2016 and 2018 and enrolled in Achieving College Excellence or a degree program at the College of Micronesia–FSM in the summer or fall term immediately after high school graduation. Predicted probabilities are calculated from regression models (see appendix B for details on the calculations and tables C9 and table C12 in appendix C for detailed results). High school grade point average had a statistically different posterior distribution from that of the reference group.

Source: Authors' analyses of data from the Pohnpei Department of Education and the College of Micronesia–FSM for public high school graduates from 2016 to 2018.

Figure 8. First term of enrollment was positively associated with College of Micronesia–FSM students' persistence to a second year, spring 2016–spring 2018



Note: *n* = 327 students who graduated from a Pohnpei public high school between spring 2016 and 2018 and enrolled in Achieving College Excellence or a degree program at the College of Micronesia–FSM in the summer or fall term immediately after high school graduation. Predicted probabilities are calculated from regression models (see appendix B for details on the calculations and tables C9 and table C12 in appendix C for detailed results). First term of enrollment had a statistically different posterior distribution from that of the reference group.

Source: Authors' analyses of data from the Pohnpei Department of Education and the College of Micronesia–FSM for public high school graduates from 2016 to 2018.

was 24 percent for students with a high school grade point average of 2.0, 55 percent for students with a grade point average of 3.0, and 82 percent for students with a grade point average of 4.0.

First enrolling in the summer term rather than in the fall term after high school graduation was positively associated with College of Micronesia–FSM students' persistence to a second year

College students whose first term of enrollment was the summer term immediately after high school graduation were more likely than students whose first term of enrollment was the fall term to persist to a second year (figure 8; see also tables C9 and C12 in appendix C). The probability was 83 percent for students who enrolled for the first time in the summer term and 60 percent for students who enrolled for the first time in the fall term. About half the students in the analytic sample began college in the summer term (see table C1).

Limitations

The results presented here are time- and context-dependent. This study was limited to 2016–18 graduates from Pohnpei public high schools, which limits the ability to generalize these results to other time periods, nonpublic schools, or the other three states in the FSM. For example, one cannot infer that students who begin college in the summer term will always have a higher probability of early college success than students who begin in the fall term or that students with lower high school grade point averages will always be more likely to struggle to achieve early college success. Education supports are constantly progressing, and interventions that work for some cohorts might not work for others.

Additionally, characteristics that were not examined in the study might be better predictors of the early college success outcomes than those that were. Only a small number of high school academic preparation characteristics were available for the study. Data were missing for several high school academic preparation characteristics because a systematic, unique identifier for students is not used and some data had been lost; a considerable amount of data on some course grades, standardized test scores, and attendance information were missing for up to 80 percent of students in the samples, which precluded the use of those characteristics in the study. Rather than removing individual cases with missing data, the study team did not include any of the variables with such high rates of missingness. For the data that were used in the study, missingness was low. At most, 7.6 percent of students were missing at least one high school academic preparation characteristic; this was considered within the range of acceptable missing data. The missing data for these students were imputed, and those students were not removed from the study (see appendix B for more information on missing data).

Finally, this study is not intended to determine cause and effect. For example, the finding of an association between enrolling in the summer term and persisting to a second year, even when statistically significant, does not mean that enrolling in the summer term caused persistence to a second year and should not be interpreted as such. Other factors, such as differences in personal circumstances, teacher–student relationships, and academic support, might have contributed to the observed associations between high school academic preparation characteristics and early college success outcomes.

Implications

This is the first study to examine the roles of high school academic preparation characteristics and college student characteristics in early college success for Pohnpei students at the College of Micronesia–FSM. The findings have several implications for how education leaders on Pohnpei could promote students' early college success and ultimately increase degree attainment.

Examine the effectiveness of the College of Micronesia–FSM Entrance Test in placing students in credit-bearing courses

High school students had low placement rates in credit-bearing reading and writing courses, which held even for high-performing students. Research in the United States has shown that college course placement tests often underplace students (Barnett et al., 2020). Since subtests of the College of Micronesia–FSM Entrance Test are used to place students in courses, the college might want to examine the test or explore other placement systems, such as multiple measures placement systems, that have successfully improved student outcomes in other institutions (Barnett et al., 2020).

Develop an early warning system for Pohnpei public high schools that monitors students' academic progress

High school students with higher grade point averages who took the College of Micronesia–FSM Entrance Test were more likely to receive a high enough result to be considered for admission to a two-year associate degree program. Additionally, college students with higher high school grade point averages were more likely to be placed in credit-bearing math, reading, and writing courses and to persist to a second year of college. Pohnpei Department of Education leadership might consider using cumulative grade point average to identify students at risk of not achieving early college success. Monitoring student performance early in high school could allow educators to provide supports that maximize students' potential for early college success. These supports could include developing individualized instruction or interventions for students based on their level of need, setting academic goals for students, and sharing data with students to increase motivation and engagement in their progress (Hamilton et al., 2009; Sun et al., 2016).

Examine why students enroll in each high school coursework track and the extent to which their curricula are aligned with the intended student outcomes of that coursework track

Pohnpei public high school students who were enrolled in the academic high school coursework track were more likely than students who were enrolled in the other high school coursework tracks to be admitted to a two-year associate degree program at the College of Micronesia–FSM and to be placed in credit-bearing reading courses. Because many students who are enrolled in the business and vocational coursework tracks enroll in a degree program at the College of Micronesia–FSM (see table C1 in appendix C) but are less likely to be placed in credit-bearing courses, the Pohnpei Department of Education might want to examine why grade 11 students enroll in a particular high school coursework track. That information could help the department better align the curricula of each coursework track to students' career goals and support high schools in counseling students on which coursework track to enroll in. Additional supports might also be needed in high school for students who are enrolled in the business and vocational coursework tracks who wish to enroll in college.

Examine factors that contribute to low placement rates in credit-bearing English reading and writing

The Pohnpei Department of Education and the College of Micronesia–FSM might want to further examine the factors that contribute to the low placement rates of students placed in credit-bearing reading and writing courses at the college. This could include reviewing the supports available to help students succeed in English reading and writing in high school. Since most students who graduate from a Pohnpei public high school do not speak English as a home language, the department and the college might also want to examine the role that language of instruction and the supports given to English learner students play in early college success, because students' additional language abilities develop from their home language abilities (García, 2009; May, 2014).

Conduct further research on why students who first enroll in college in the summer term immediately after high school graduation have higher persistence rates than students who first enroll in the fall term

Research in the United States suggests that the longer high school graduates delayed college enrollment, the more likely they were to be placed in developmental courses and the less likely they were to earn a college credential (Hodara & Cox, 2016; Turk, 2018). This is due partly to the time gap in learning (Hodara & Cox, 2016). Students who enroll in the College of Micronesia–FSM for the first time in the summer term are required to attend classes every day for six weeks, which might support their ability to engage with the class material and transition to college (Wathington et al., 2011). Students take up to two courses—typically developmental courses, if needed—in the summer term. By using the summer term for developmental courses, students might be able to start the fall term taking credit-bearing courses or taking fewer developmental courses. However, the extent to which these factors play a causal role in higher persistence is unclear. Examining why these differences occur could help improve persistence rates for all students. It might also be beneficial to see the extent to which first enrolling in the summer term correlates with later college outcomes, such as completing a degree.

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