Using High School Data to Predict College Readiness and Early College Success on Guåhan (Guam)

On Guåhan (Guam), the large percentages of students enrolling in non-credit-bearing courses at Kulehon Kumunidåt Guåhan (Guam Community College) and Unibetsedåt Guåhan (University of Guam) have raised concerns about college readiness and early college success. Without adequate research on predictors of college readiness and early success among students on Guåhan, educators and other stakeholders find it difficult to identify and support students at risk of being underprepared for college. This study examined which student characteristics predicted college readiness and early college success among students who graduated from Guåhan high schools and enrolled at Kulehon Kumunidåt Guåhan or Unibetsedåt Guåhan between 2012 and 2015. Students' college readiness and early college success were assessed using three indicators: enrolling in only credit-bearing math and English courses during the first year of college, earning all credits attempted during the first semester of college, and persisting to a second year of college. About 23 percent of students met all three indicators and were thus classified as demonstrating college readiness and early college success. The percentages of students who met each individual indicator varied: 30 percent enrolled in only credit-bearing math and English courses, 43 percent earned all the credits they attempted, and 74 percent persisted to a second year. Various student characteristics predicted meeting all three indicators and each individual indicator. Graduates of John F. Kennedy High School and male students were the most likely to meet all three indicators and were the most likely to enroll in only credit-bearing math and English courses. Completing a high-level math course during high school positively predicted meeting the composite indicator of college readiness and early college success and of enrolling in only credit-bearing math and English courses and earning all credits attempted. A higher cumulative high school grade point average also positively predicted meeting all three indicators and each individual indicator. Kulehon Kumunidåt Guåhan enrollees were more likely than Unibetsedåt Guåhan enrollees to earn all credits attempted during their first semester.

Why this study?

Kulehon Kumunidåt Guåhan (Guam Community College), Unibetsedåt Guåhan (University of Guam), and the Guam Department of Education are concerned that many Guåhan (Guam) public high school graduates may be under-prepared for college.[1] Among students entering Kulehon Kumunidåt Guåhan in 2018, 57 percent placed into developmental math courses and 74 percent placed into developmental English courses.[2] In 2016 nearly 70 percent of students entering Unibetsedåt Guåhan placed into developmental math courses.[3] This suggests that Guåhan high school graduates might not be academically prepared for college. Knowing what factors are associated with higher risk of students being underprepared for college could help on Guåhan more proactively support students

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1. This brief uses Indigenous names for the institutions, ethnicities, languages, and geographic locations included in the study.
2. Guam Community College. (2018). Factbook 2017–2018. https://guamcc.edu/sites/default/files/factbookvolume12_0.pdf. O'Connor, J. (2016, March 25). GDOE to tackle teacher shortage, college readiness. The Guam Daily. https://www.postguam.com/news/local/gdoe-totackle-teacher-shortage-college-readiness/article_c9a0d054-f1b5-11e5-8f80-f3529c025814.html.
3. As of 2017, Unibetsedåt Guåhan stopped offering developmental English courses.

before they face the challenges of college. This study's findings could inform ongoing or new policies and practices to support the college readiness and early college success of Guåhan students.

What was studied and how?

The study examined predictors of college readiness and early college success among students who graduated from Guåhan public high schools between spring 2012 and spring 2015 and enrolled at either Kulehon Kumunidåt Guåhan or Unibetsedåt Guåhan between fall 2012 and fall 2015. College readiness and early college success were assessed using three research-based indicators: enrolling in only credit-bearing math and English courses during the first year of college, earning all credits attempted during the first semester of college, and persisting to a second year of college.[4] The study examined each indicator individually as well as a composite indicator comprising all three. Students who met the composite indicator were classified as demonstrating college readiness and early college success. The final analytic sample included 1,266 first-time, degree-seeking students.

Three research questions guided the study:

1. What percentage of students demonstrated college readiness and early college success by meeting the study's composite indicator, and what percentage met each individual indicator?

2. How did students' demographic and academic preparation characteristics predict their college readiness and early college success, after other student demographic characteristics, academic preparation characteristics, and college attended were controlled for?

3. How did the college that students attended predict their college readiness and early college success, after student demographic and academic preparation characteristics were controlled for?

The Guam Department of Education, Kulehon Kumunidåt Guåhan, and Unibetsedåt Guåhan provided data for the study, and analyses were conducted across students from Kulehon Kumunidåt Guåhan and Unibetsedåt Guåhan. The study team calculated descriptive statistics to determine the percentage of students who met the composite indicator and each individual indicator of college readiness and early college success. In addition, the study team ran four logistic regression models and calculated predicted probabilities to describe which student characteristics predicted meeting each indicator of interest. Group differences for statistically significant findings are classified as minor when the difference in the probabilities of meeting an outcome was smaller than 5 percentage points and major when the difference was 5 percentage points or greater.

Findings

- **Fewer than one-fourth of graduates of Guåhan public high schools who enrolled in Kulehon Kumunidåt Guåhan or Unibetsedåt Guåhan between fall 2012 and fall 2015 met the composite indicator of college readiness and early college success.** The percentage of students who met individual indicators varied. About 30 percent of students enrolled in only credit-bearing math and English courses during their first year of college, 43 percent earned all credits attempted in their first semester of college, and 74 percent persisted to a second year of college (figure 1).

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4. Hein, V., Smerdon, B., & Sambolt, M. (2013). Predictors of postsecondary success. American Institutes for Research. Porter, A. C., & Polikoff, M. S. (2012). Measuring academic readiness for college. *Educational Policy, 26*(3), 394–417. https://doi.org/10.1177/0895904 811400410. Stephan, J. L., Davis, E., Lindsay, J., & Miller, S. (2015). *Who will succeed and who will struggle? Predicting college readiness with Indiana's student information system* (REL 2015–078). U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest. http://ies.ed.gov/ncee/edlabs.

Figure 1. About 23 percent of students of Guåhan public high schools who enrolled in Kulehon Kumunidåt Guåhan or Unibetsedåt Guåhan between fall 2012 and fall 2015 met the composite indicator of college readiness and early college success, and the percentages who met each individual indicator varied
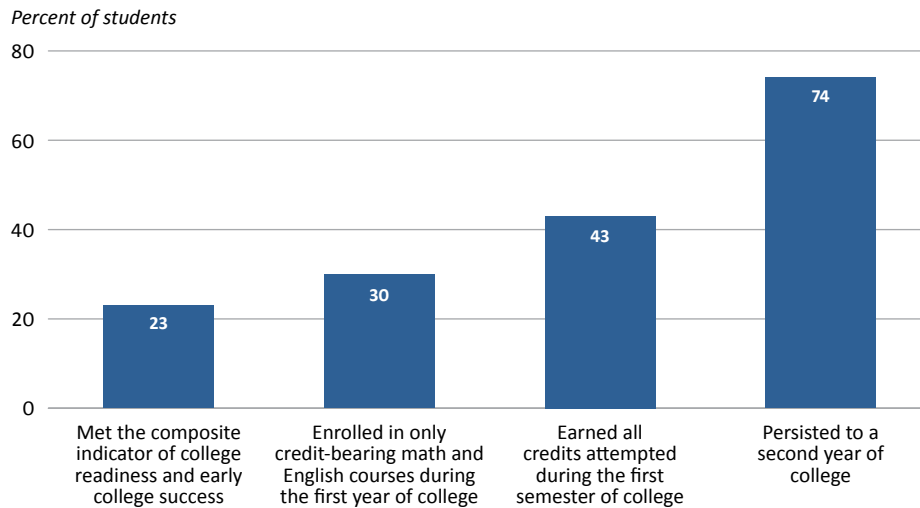
Note: *n* = 1,226.

Source: Authors' calculations based on data from Kulehon Kumunidåt Guåhan and Unibetsedåt Guåhan.

- **Graduates of John F. Kennedy High School were more likely than graduates of other high schools to meet the composite indicator of college readiness and early college success and to enroll in only credit-bearing math and English courses.** Graduates of John F. Kennedy High School had a 20 percent probability of meeting the composite indicator, after other characteristics were accounted for, compared with 11–16 percent for graduates of other high schools. The difference in the probability between graduates of John F. Kennedy High School and graduates of Simon Sanchez High School is classified as minor. The differences in probability between graduates of John F. Kennedy High School and graduates of the other high schools are classified as major. In addition, graduates of John F. Kennedy High School had a 49 percent probability of enrolling in only credit-bearing math and English courses during their first year of college compared with 29–37 percent for graduates of other high schools. The differences in probability between graduates of John F. Kennedy High School and graduates of other high school are classified as major.

- **Students who completed a high-level math course during high school were more likely than other students to meet the composite indicator of college readiness and early college success, to enroll in only credit-bearing math and English courses during the first year of college, and to earn all credits attempted during the first semester of college.** Students who completed a high-level math course during high school had a 24 percent probability of meeting the composite indicator of college readiness and early college success, after other characteristics were accounted for, compared with 8 percent for students who did not complete a high-level math course. Students who completed a high-level math course had a 51 percent probability of enrolling in only credit-bearing math and English courses during their first year of college and a 76 percent probability of earning all credits attempted during their first semester of college, while students who did not complete a high-level math course had a 25 percent probability of enrolling in only credit-bearing courses and a 54 percent probability of earning all credits attempted. The differences in probability are classified as major.

- **Students with higher cumulative high school grade point averages were more likely than students with lower grade point averages to meet the composite indicator and each individual indicator of college readiness and early college success.** Students with a cumulative high school grade point average of 4.50 had an 83 percent probability of meeting the composite indicator, after other characteristics were accounted for, compared with

54 percent for students with a grade point average of 4.00.[5] The probabilities of meeting the composite indicator and each individual indicator fell as high school grade point average fell. The differences in probability between students with higher grade point averages and students with lower grade point averages are classified as major.

- **Students who attended community college were more likely than students who attended a four-year college to earn all credits attempted during their first semester of college.** Students who attended Kulehon Kumunidåt Guåhan had an 81 percent probability of earning all credits attempted, after other demographic and academic preparation characteristics were accounted for, compared with 47 percent for students who attended Unibetsedåt Guåhan. This difference is classified as major.

Implications

This is the first study to examine predictors of college readiness and early college success among Guåhan public high school students. Stakeholders can use the findings to help identify and support students who might be at risk for being underprepared for college when they graduate from high school. In light of the findings, the Guam Department of Education, Kulehon Kumunidåt Guåhan, and Unibetsedåt Guåhan might consider:

- *Creating an early warning system to monitor academic progress among public high schools*. Guåhan education leaders might consider using cumulative grade point average and completion of a high-level math course to assess students' college readiness at high school graduation.
- *Examining differences in academic preparation across public high schools*. Further examination of variations in academic practices could help explain why graduates of John F. Kennedy High School were the most likely to meet various indicators of college readiness and early college success.
- *Providing additional supports based on high school performance for students who enroll in college on Guåhan.* Because high school grade point average was a positive predictor of early college success, stakeholders might consider providing students with lower grade point averages with additional supports, such as mentoring programs or summer bridge programs.
- *Reviewing differences in available academic supports, and conducting further research on earning all credits attempted during the first semester of college*. Further examination of differences in academic supports available to students and how differences between Kulehon Kumunidåt Guåhan and Unibetsedåt Guåhan contribute to indicators of college readiness and early college success might be helpful.

This study was limited by its small, restricted sample and reliance on existing data. There are likely a variety of reasons why students might not enroll in and complete specific courses or persist to a second year of college. Examining the potential role of every possible factor was beyond the scope of the study. This exploratory study was also limited by its descriptive, correlational design. It provides an initial look at the predictors of college readiness and early college success but does not provide evidence regarding causal relationships.

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5. Guåhan public high schools use a 5-point scale for honors and Advanced Placement courses, so some students' cumulative high school grade point averages were higher than 4.00 (the cumulative averages ranged from 1.44 to 4.58).