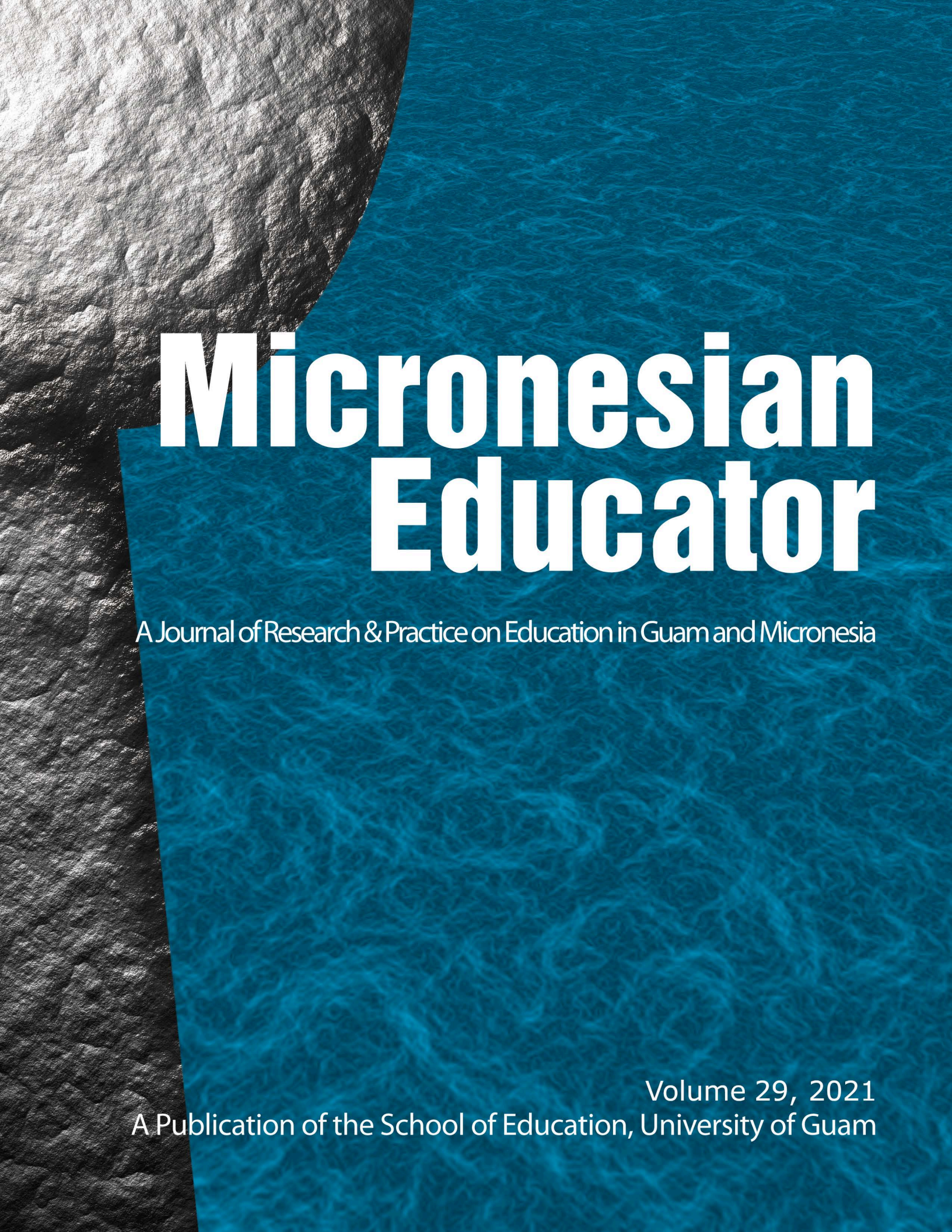

Micronesian Educator

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Special Volume (#29) on Student Success

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FOREWORD

The overall findings contributed to this special volume of *Micronesian Educator*, focused on Student Success, shed meaningful light on underprepared or at-risk university or college students in minority serving institutions and the innovative methods employed by the Guam Community College and the University of Guam to address them. The authors are to be acknowledged for their important contributions to the scant body of literature on student success in public open-admissions minority serving institutions at the community college and university levels.

For most individuals, the value of a university or college degree is defined at its most personal level, by the individual student. Challenges that the students experience at the onset and throughout their academic journey may negatively influence their perception of the value of education over time. Although a student's personal circumstance cannot be controlled, the institution of higher education has an opportunity to assess and determine what it can contribute to sustain student interest throughout their academic pathway.

The discoveries unfolded in the ensuing chapters provide helpful information to contextualize individual and institutional complexities and the resulting calls to action to provide equitable access to a university or college degree. Reflections on data and ineffective institutional systems were part of that review to foster a sense of urgency for institutional change to improve student success. While the data on incoming first year students according to ethnicity and Pell-eligibility may serve as predictors of student success, an examination of internal systems that may have impeded access or have served as impediments to success were worth exploring.

An innovative pursuit called the Classroom Learning Yields Mathematics and English Readiness (CLYMER) program by the Guam Community College was one way to pivot from this disservice to relatively high performing high school graduates who completed college preparatory mathematics and English courses. After examining ten years of student success data, which included students' completion of these courses within their last two years of high school, the College replaced its historically adopted placement tests with a unique method that used, in part, high school graduates' academic performance as the determinant for placement, with resulting success.

A transforming curriculum at the University of Guam is another contributing innovation to mitigate long-term barriers to relatively high performing high school graduates who placed in remedial or developmental English. Instead of replacing the English placement test, the composition program faculty embarked on a journey to determine how to strengthen the learning experience of the over 70% of incoming first year students who placed in either one of the two developmental English courses and allow a more effective transition or placement in Freshman composition courses. Their exploratory journey began with conversations with high school teachers, administrators, counselors, and students at the feeder schools, including sharing statistics, program content and placement process and teachers' concerns about student writing. At the university level, a change in the system included developing a unified syllabus and common assignment, professional development of faculty, student support through a writing center, embedded classroom tutors, and curricular change, with impressive results and impact.

In another article in this volume, the development of a student success profile consisting of intervening methods resulted in an improvement of the graduation rate by eight percentage points is worth exploring. Institutions of higher education that boast higher percentages of students placing in remedial math as well as English courses have done so for multiple years without any effort to address why students did so, even after satisfactorily completing higher level mathematics in high school.

The study of achievement gaps was worth exploring in view of CHamoru male students' comparatively high stop out rate of 63%, as compared to the overall rate of 37%. While predictors of student success tend to include availability of financial resources, performance in standardized test scores, family background related to higher education, student's ethnicity, gender, and social economic conditions, more relevant factors that touch along the themes of financial constraints, lack of self-motivation and social contributions helped to explain the large stop out rate, prompting intentional interventions to reverse this trend.

Another intentional effort addressed engagement of first-year students to foster persistence to the second year at the university. Drawing from the National Survey of Student Engagement's Supportive Environment engagement indicator, the University of Guam used the related evaluative criteria as the basis to better explain students' perceptions of the institution's engagement support system. This deep review of student responses from the University of Guam revealed a positive relationship between student engagement and improved retention.

Gaining an understanding of service learning, the benefits thereof and the various types of engagement by student with the community as another area of investigation worth noting. This prompts further exploration as a possible predictive component of student success across all disciplines.

Finally, a more expansive examination to determine the relationship between social-interpersonal, school, and cultural factor and intrinsic and extrinsic academic motivation among Asian/Pacific Islander students in Guam adds further value. Here, there was a positive correlation between enculturation and academic motivation. Results from this study can be used to drive curriculum and policy that is culturally sensitive and may be a catalyst for designing appropriate intervention and prevention programs for at-risk Guam students.

Narratives of unique factors that help to contextualize a minority serving institution's progress on retention and persistence to degree are important for anyone interested in making strides in student success. Assuring access to higher education and understanding context about the students and the systems they are subjected to are equally important in this quest for improvement.

I invite you to review the excellent studies published in this volume to explore how data and innovation form the basis for advancing student success at colleges and universities in Guam.

Anita Borja Enriquez
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GUEST EDITORS' INTRODUCTION

This special volume of *Micronesian Educator* is focused on student success. While many institutions of higher education across the United States and around the world have increased student enrollments in the past several decades, inequity in student experiences and outcomes continue to challenge the societal goal of advancing the benefits of postsecondary education for all students. In an age of globalization and digitization, the imperative for younger generations of trained and educated individuals is needed solve the most pressing environmental and societal problems. Research on policies and practices that support college student success is ongoing, and much of it focuses on broad and diverse student populations. However, not enough it of focuses on unique communities such as those found on Guam and throughout Micronesia. Through a variety of approaches and viewpoints, the studies in this volume examine degree completion for students at the University of Guam and Guam Community College. The qualitative, quantitative, and predictive elements in these studies, and the types of intervention strategies and transformations examined, should resonate strongly with cultural values across the Western Pacific.

This collection of research is important to the region. Over 10,000 students are served across a broad expanse, from differing cultures, political entities, and world views, preparing to serve as leaders and giving members of their communities in the future. Our institutions have a great opportunity to develop the intellectual capacity and human capital of this generation. Student success is scaffolded by powerful concepts in educational psychology. Students need to attain a growth mindset and feel a sense of belonging. The theoretical framework of the UOG student success initiative has been to make institutional choices that enhance the student sense of belonging. Much in this way, institutions of higher education need to be environments in which all students simply feel they are supported, they belong, and they are worthy of success. That is the value proposition often lost on the discussion about institutional programs and services for student success: that individual students matter, and their unquestionable belongingness on campuses, online and in our communities, matters.

One powerful theme running throughout every article in this collection is that issues of diversity, equity, and inclusion are directly related to student success. What is different for our institutions in the Micronesian geographical area is we do not build support programs for small groups of our population; we build support programs across our entire campuses. This means we have different challenges and must take different approaches to supporting our students. For example, the baseline demographic study completed by Smith demonstrates the unique populations of our institutions, and the success of the CLYMER initiative described by Hartz is persuasive evidence of the power of trusting our partners in the K-12 school setting, in which high school grading, influenced a by local traditions, cultures, and customs, are more accurate predictors of student persistence and academic achievement than externally built assessments. The approaches described in these studies are sustainable, focused on the strengths and assets of the students, and help improve policies and practices to make it possible for students to be successful.

Another theme found in this volume is the idea that our students respond best to supportive activities. The predictive studies found that students flourished in supportive environments (Yasuhiro), performed better after completing a student success seminar (Badowski & McVey), and require the communal support of their families and loved ones as a motivator to achieve (Kawabata & Santos). The articles focusing on interventions echoed these findings, especially the service learning article (Dresbach, Johnson, & Lizama), which found that students were inspired to contribute more to their communities as they began to understand how academic studies improved their ability to help friends and families in culturally responsive ways.

The third major theme in this special volume is the importance of faculty collaboration. The composition article (Simpson-Warner, Garcia-Santos, Perez, & Santos-Bamba) made clear that faculty collaboration in our institutions is more fluid than formal, more like a learning community than a commission to prepare edicts, and highly responsive to student responses. The service learning article (Dresbach, Johnson, & Lizama) also sheds light on the faculty collaborations and public partnerships to establish, strengthen, and nurture student and community growth at the same time. The student profile article (Badowski & McVey) highlights collaborative faculty projects as well.

It is important to note most of the articles for this volume were written by UOG faculty. Of the 14 contributors, eight were faculty when the article was written. Four administrators, three from UOG and one from GCC, also contributed. Two contributors were graduate students at the time the article was written. The journal honors their work and efforts while demonstrating some of the best elements of the scholarship of teaching and learning: rigorous, robust understanding of the students, well-researched and considered intervention programs, and academically organized reporting of the findings.

This volume was co-edited. This partnership allowed for an external perspective, from someone who has a strong career and national profile in student success, as well as a strong publication history, but little direct knowledge of the region; while the other editor's knowledge is much more steeped in the local and regional context. This was an interesting exercise in the peer review process, as all of us were asked to complete edits and improve the professional quality of our work. The process challenged each of us to broaden our perspectives and oftentimes, opportunities to clarify, strengthen and explain our local context in a way that more accurately described and reflected the values and practices of the region. This further illuminates the region in a broader academic venue.

In closing, special recognition should go to the University of Guam Senior Vice President and Provost for her generous foreword, capturing some of her observations about the articles. Many of the articles in this special issue are the direct results of initiatives that Dr. Enriquez funded or led. Enriquez has made the advocacy for our students, research into what helps the succeed, and allocation of funding to supporting completion a hallmark of her tenure.

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GUAM COMMUNITY COLLEGE'S CLYMER PROGRAM: HELPING STUDENTS ACHIEVE STUDENT SUCCESS IN ENGLISH AND MATHEMATICS

R. Gary Hartz, Guam Community College

Guam Community College's CLYMER (Classroom Learning Yields Mathematics and English Readiness) program places students in credited, college-level mathematics and English courses, with the vast majority of students passing these classes. In doing so, the program is a model of how open-enrollment colleges can move beyond the use of traditional placement tests, which often assess students as requiring developmental education background before enrolling in the credited courses.

Keywords: placement test, developmental education, mathematics, composition, multiple measures

Moving Beyond Placement Tests

Throughout the United States, colleges and universities have been moving away from the use of placement tests and college admissions tests in favor of other assessment means, to include data on students' performance in high school, and other factors that correlate with postsecondary success. Institutions of higher learning that have traditionally used instruments like the Scholastic Aptitude Test (SAT), for example, are now relying on high school academic performance to predict students' college success. This emerging trend, in part, is reflective of awareness that the use of admissions examinations may favor admission of majority culture students. With the heightened importance of high school performance, open admissions colleges, and universities grapple with a common challenge: addressing the myriad needs of students with disparate levels of readiness for credited mathematics and English courses.

Placement tests have seen a shift from standardized exams, such as ACCUPLACER and Compass, especially since 2016, when administration of the Compass placement exams ceased. Issues with the standardized placement tests include cultural biases of the exam creators, potentially disadvantaging entire populations of students. Further, placement into developmental courses substantially decreased a student's likelihood of completing a degree in eight years (Barnet & Reddy, 2017).

Scott-Clayton (2012) examined whether high-stakes exams were more accurate than alternate measures, demonstrating that a better approach included using multiple measures, such as high school grades, to place students into college-level composition and math courses. Gabrielle, Ansel and Krachman (2015) affirmed these findings, stating that while standardized exams had become highly refined at measuring cognitive skills, such as knowledge and vocabulary, they gathered almost no information about a student's noncognitive skill set, including regularly attending class, submitting homework in a timely manner, or the ability to sustain motivation. These skills can be observed from reviewing a student's high school grades. Further support can be found in research from Ganga and Mazzariello (2019), who noted that that multiple measure placements are more accurate. Their research has shown that students assessed using multiple measures, especially when high school GPAs are one of the other measures, are not only more likely to be assigned to college-level courses; and they are more likely to pass them. These researchers acknowledged that while "grades may be less reliable and valid measures of academic skill or aptitude than well- developed standardized tests, grades are better predictors of college completion because they measure both the academic skills and the non-cognitive skills needed to succeed in colleges" (Gabrielle, Ansel, & Krachman 2015, p. 15).

Several state systems, including California, Minnesota and North Carolina, are adopting multiple measures course placement systems, often using high school GPA as the primary piece of additional information. All of these measures save time and tuition money for students.

Prior to the fall of 2017, GCC placed 73% of students in developmental English courses, and 96% into developmental mathematics courses through use of the Accuplacer and Compass placement tests. These students would be required to enroll in and pass the developmental education courses prior to registering for the credited mathematics and English courses required for graduation. The large number of students placed in developmental education courses meant that students added a semester or more to their target education dates. This concern prompted Dr. Michael L. Chan, GCC's Dean of Technology and Student Services, to find a data-driven way to place more students in credited mathematics and English classes – while also increasing their potential for success in these classes.

While placement testing remains an important tool in determining whether many new GCC students are ready for these credited courses, the Guam Community College (GCC) has identified a research-based way of enrolling students in appropriate classes without the use of placement tests: the CLYMER (Classroom Learning Yields Mathematics and English Readiness) program.

The CLYMER Hypothesis

The result was the implementation of CLYMER, named for Patrick Clymer, GCC's now-deceased registrar, who urged Dr. Chan to push the proposal to move students straight to credited courses forward to senior administration. Hypothesizing that recent high school graduates with a track record of academic success, both overall and in English and mathematics, would be the ones most likely to succeed in credited English and mathematics classes. Dr. Chan gathered 10 years of data on GCC student success. His research indicated that students within two years of graduating high school, with a GPA of 3.2 or higher, and with grades of "B" or better in the appropriate course would have a likelihood of success high enough to justify the placement. Specifically, the research examined students who earned the following grades: B or better in 12th grade English for EN110, Freshman Composition; B or better in high school Algebra II for MA110A, Finite Mathematics; B or better in high school Trigonometry and 3.2 GPA for MA161A, College Algebra and Trigonometry.

Students meeting the above criteria received automatic placement in credited classes, without the need for taking a placement test. Students who had graduated more than two years before admission or had a lower level of high school academic success would not qualify for CLYMER, and still needed to take the placement tests.

CLYMER Results

Dr. Chan's hypothesis turned out to be accurate. As indicated below, between 2017 and 2020, 80% - 95% of students placed by CLYMER in MA110 and EN110A received a final grade of 'C' or better (Table 1), compared with 75% - 81% of all students enrolled in these courses (Table 2).

Table 1. EN110 – Freshman Composition

Academic Year	# of students: CLYMER	# receiving 'C or better'	% receiving 'C or better'
2017-18	119	112	94%
2018-19	175	158	90%
2019-20	184	167	91%

Table 2. EN110 – Freshman Composition

Academic Year	# of students: TOTAL	# receiving 'C or better'	% receiving 'C or better'
2017-18	509	381	75%
2018-19	556	420	76%
2019-20	500	401	80%

The data indicated that students placed by CLYMER in the College's primary credited mathematics class were very successful in completing the course at both the 'B' and 'C' levels (Tables 3 and 4). These students were more successful than the general population taking MA110A, as reflected in Table 8.

Table 3. MA110A – Finite Mathematics

Academic Year	# of students: CLYMER	# receiving 'C or better'	% receiving 'C or better'
2017-18	78	74	95%
2018-19	95	90	95%
2019-20	124	101	81%

Table 4. MA110A – Finite Mathematics

Academic Year	# of students: TOTAL	# receiving 'C or better'	% receiving 'C or better'
2017-18	499	380	76%
2018-19	428	347	81%
2019-20	480	364	76%

The data revealed that CLYMER students enrolled in the more advanced MA161A course were also very successful. Table 5 reports the high number of CLYMER students who successfully passed this credited college algebra and trigonometry course, especially when compared to all students who enrolled in this course in the same year (Table 6).

Table 5. MA161A – College Algebra and Trigonometry

Academic Year	# of CLYMER students	# receiving 'C or better'	% receiving 'C or better'
2017-18	6	6	100%
2018-19	13	10	77%
2019-20	18	16	89%

Table 6. MA161A – College Algebra and Trigonometry

Academic Year	# of students: TOTAL	# receiving 'C or better'	% receiving 'C or better'
2017-18	57	29	51%
2018-19	69	31	45%
2019-20	61	31	51%

Even if student success in the credited courses is defined more stringently, CLYMER has proven successful. As indicated below, between 2018 and 2020, 68% - 85% of students placed by CLYMER in EN110 and MA110A received a final grade of 'B' or better, as compared with 60% - 64% of all students enrolled in these courses (Tables 7 and 8).

Table 7. EN110 – Freshman Composition: Total and CLYMER Students, 'B or better

Academic Year	% of TOTAL students receiving 'B or better':	% of CLYMER students receiving 'B or better':
2018-19	61%	85%
2019-20	61%	74%

Table 8. MA110A – Finite Mathematics: Total and CLYMER Students, 'B or better

Academic Year	% of TOTAL students receiving 'B or better':	% of CLYMER students receiving 'B or better':
2018-19	60%	79%
2019-20	64%	68%

CLYMER students enrolled in the more advanced MA161A course were also very successful, compared with all students enrolled in the course (Table 9).

Table 9. MA161A – College Algebra and Trigonometry: Total and CLYMER Students, 'B or better

Academic Year	% of TOTAL students receiving 'B or better':	% of CLYMER students receiving 'B or better':
2018-19	32%	68%
2019-20	46%	83%

Discussion

CLYMER placement has resulted in a high likelihood of student success in credited mathematics and English courses. It has also resulted in a 20% decrease in the number of developmental education courses that GCC offers. Therefore, CLYMER will continue, and in time, requirements may change to include more students.

Why is CLYMER Successful? Dr. Michael Chan, GCC's Dean of Technology and Student Services, attributes CLYMER's success to Guam's mathematics and English instructors, particularly those on the Guam Department of Education. He said: "The success rates of our CLYMER participants are a testament to the quality of instruction of our high school teachers. No system is perfect, but at the end of the day, when you have dedicated and committed teachers who are willing to go above and beyond for students willing to learn, great things can happen. All the CLYMER program does is recognize this and clear the path for the students to get the best possible start with college."

Implications for the Future

GCC will review CLYMER eligibility requirements to see if they can be expanded. Dr. Chan hypothesizes that there may be additional students who are capable of succeeding in college level Math and English – students who fall short of the current CLYMER eligibility requirements. He queried, "If so, what are the factors involved? If we can determine those factors, what is the current available data saying? If current data does not exist, this would make an excellent project for the future." For now, because CLYMER is based on student success and learning in face-to-face high school courses, and COVID-19 has limited this modality in Guam's public schools, GCC has temporarily suspended CLYMER as a placement tool. Upon the high schools' resumption of in-person instruction as the primary modality, CLYMER will be reinstated.

Limitations

As high school graduates' readiness for college-level classes varies across states, territories and nations, the criteria set for students' eligibility for credited English and mathematics courses is also likely to vary. Further, high school grades may reflect different levels of readiness across locations.

Conclusion

Based on its success, CLYMER may also serve as a model for other open-admissions colleges, to move beyond the use of placement tests to a model that considers students' past successes in English and mathematics. GCC's

CLYMER program points to an approach that other open admission colleges and universities can take, to build on the current trend of moving away from placement tests, utilizing data on students' history of academic success. Students' recent graduation from high school, combined with overall secondary academic success and strong grades in English and mathematics, may be a predictor of success in credited English and mathematics at other colleges and universities.

Campuses considering the implementation of such a model should receive feedback from the faculty and other front-line staff to get to know the feeder schools. Many high school faculty and staff have a good grasp on the readiness of students that they produce. This base-line knowledge is a good indicator of whether or not a program like CLYMER can succeed. Lastly, faculty can offer feedback regarding eligibility requirements for the college level courses.

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COMPOSITION REDESIGNED AT THE UNIVERSITY OF GUAM: A NARRATIVE OF TRANSFORMATION

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Developmental, or remedial, English courses have long been part of American university education. As a US-accredited institution of higher education, the University of Guam (UOG) required such courses for students deemed underprepared for college writing and reading. Concern for the effects of these courses on students' progress to degree led UOG's composition program to explore other ways of preparing students for college writing. Over the past ten years, these efforts led to phasing out the developmental courses. Here we share the narrative of that process.

Keywords: English composition, placement, curriculum reform, faculty teamwork, professional development, common assignment

Introduction

Remedial English. Developmental English. Not college ready. Under-prepared. These terms categorize courses and students on the edge of higher education--not at college level. Whatever level prospective college students present, the University of Guam (UOG) accepts all who apply. UOG, a land grant institution located in Mangilao, serves a predominately Pacific Islander and Asian student body, with over 30% identifying as Indigenous CHamoru. Since its founding over 60 years ago, UOG has required its entering class to complete courses in English writing and reading as part of the General Education requirements. Required writing courses are not unique to the UOG student experience or its undergraduate curriculum. An English composition course requirement has been part of much of American university curriculum ever since the late 1800s when American universities, such as Harvard with its English A and English B, created first-year composition courses in response to the increasing diversity of language experience of entering college students from the growing middle-class (Brereton, 1995). As an English language, accredited university, UOG has included such courses as part of its curriculum.

Because new UOG students come with varying levels of skills in writing and reading, UOG utilized a placement test system to appropriately place students into an English composition course as a way to promote retention and persistence to degree completion. New students who were determined by this series of placement tests to have demonstrated English language “deficiencies” were required to complete developmental English composition courses before enrolling in the required two-course, first-year writing sequence. At one point in the curriculum history, there were 10 developmental English courses offered: two levels of oral/aural, four levels of reading, and four levels of writing (Milman, 1993).

Ten years ago, the number of preliminary English courses at UOG was down to three, but the majority of students in the entering first-year classes were required to complete at least one developmental English course prior to taking the requisite college composition courses, EN110 Freshman Composition and EN111 Writing for Research. Although the developmental courses were effective in preparing students for EN110, developmental placement added at least a semester to the students' coursework and could restrict their choices of classes in other disciplines. Since 2010, the composition faculty in the Division of English and Applied Linguistics has worked collaboratively and incrementally to increase college readiness in writing through curriculum transformation, assessment, outreach and engagement, and creating a community of practice among faculty members. As a result of these efforts, the composition program has been able to phase out developmental courses, while still focusing on student support.

As participants deeply involved in this transformative process, we four share our experiences and observations over the past ten years. Our roles, in addition to teaching in the program, have included associate dean, composition director, assessment coordinator, writing center coordinator, placement director, supplementary instruction coordinator, and composition committee member. We share this account not as a research study or a model to be followed, but as a narrative. Chu et al. (2013) explained the position of narrative in the construction and transmission of knowledge:

> Storytelling is one of the oldest ways in the world to convey the values and ideals shared by a community. Stories can pass on lessons about shared values and enable others to work together. In the Pacific Islands stories were used for passing on important lessons in life, long before the development of the written word. (p. 24)

In a spirit of reciprocity, we offer this story as a contribution to understanding educational practice in this region, reflecting the spirit of interconnectedness that underlies and informs practice. This narrative is told in three parts. The first part describes building a community of practice dedicated to student support. The second part explains how that community of practice became a foundation for curricular change. The third part considers the future.

Background

Prior to 2010, a concerning percentage of new college students who took the English Placement Test (EPT) and enrolled at UOG were placed into developmental classes. At that time, following testing, students were placed into one of three courses. For those students whose testing indicated remedial work, the placement was EN085 Fundamentals of English, with its companion lab course EN085L Fundamentals of English Lab. Students who demonstrated some knowledge of idea development and experience with academic writing placed into EN100 Fundamentals of College English. Students identified as being college ready placed directly into the course required of all students, EN110 Freshman Composition. Each fall semester, approximately 600 new students participated in placement testing and over 70% were placed into developmental English. This means that over 70% of new first-year students placed into either EN085 or EN100 and the remaining 30% into EN110.

Design of first-year composition courses reflects perspectives on language learning and fluency of students in an academic setting. While UOG positions these courses to facilitate access to higher education, they can also function as gatekeeper courses that delay or prevent students from advancing their education. In line with this view, the value of developmental and first-year composition courses has been in recent years challenged in the national context. Particularly, the question moved away from “What are composition teachers teaching?” to “What are students learning in composition courses?" This shift from emphasizing teaching to looking at learning grounded the work of the past ten years on the composition program at UOG. Likewise, clear purpose also impacted program development: "once objectives (or standards or essentials or competencies) are specified, they shape every aspect of a curriculum, its assessment, and its instructional materials" (Gamson et al., 2019). Thus, the university's 2007 decision to require that all courses articulate measurable student learning outcomes that would serve as the basis of assessment also influenced this work.

The data, experience, and goals for student success of the composition program all suggested the need for a programmatic shift. This shift needed to be data-driven and responsive to students' needs. It needed to involve the expertise and engagement of the composition faculty and include outreach beyond campus. This shift would take time and commitment. And the process of shifting would not only evolve but would become an ongoing part of the composition program.

The composition program in its present form was facilitated by a major step forward in 2010 when the first composition director was appointed by the Dean of the College of Liberal Arts and Social Sciences. The appointment of a composition director gave the composition program and its faculty clear authority and visible agency to increase consistency of content and assessment across the multiple sections of composition classes. In one early effort to address consistency throughout the program, grade distribution data were shared with faculty,

without identifying instructors or sections, so that individual instructors could see where their pass rates fell in the range. Instructors know that even if the university population of students were normally distributed in regard to assessment, an individual class might not be. Nevertheless, this transparency in terms of grade distribution data may have assisted with closer alignment of grades across the sections. But given the possible extent of variation in instruction and assessment, more needed to be done to unify content and assessment across the sections, while still benefiting from varied teaching approaches. The process of transformation began, and continues, incrementally, maximizing faculty input and endorsement to ensure transparency in curriculum decisions. Changes in the program were developed by the Composition Committee or by working groups that focus on particular aspects of the program. The Committee, made up of all the fulltime composition faculty members, variously initiates, designs, reviews, or endorses activities and curricular changes.

Part I: A Foundation for Curricular Change

Outreach and Engagement

One of the first steps in the programmatic shift involved outreach. As part of the efforts to increase transparency about UOG's placement process, expectations, and first-year writing curriculum we, along with other faculty, visited and had conversations beyond the campus community. Developing connections between the composition program and students' high school experience began these efforts because more than 60% of UOG's incoming class graduate high school from one of the island's public, private, or independent schools. Composition faculty started visiting these university feeder schools, speaking with high school teachers, administrators, counselors, and students. Groups of composition faculty worked with a collaborating school's faculty of English and other interested teachers on expectations for college-ready literacy skills. These visits began with reports of a single school's data of student performance on the English placement test in which the groups provided comparative data of that school with data from other schools, using pseudonyms for those schools. These high school colleagues consulted with composition faculty and among themselves to make sense of their school's performance against its peer institutions. In addition to sharing statistics, visiting composition faculty described the program and placement process, listened to the teachers' concerns about student writing, and shared the placement rubric. In another aspect of outreach, some of us went to the Rotary Club of Guam to deliver a presentation on how new first-year students from local public and private schools and regional feeder schools perform on the EPT. We shared with these Rotary Club members, who are business leaders and owners, how we were tackling the college readiness gap. These outreach efforts over several years made known outside of UOG the Composition Program's determination to help students prior to and during matriculation--regardless of the university or college they selected to attend.

By 2014, the Guam Department of Education (GDOE) had started to see the fruits of outreach through improved statistics on placement for individual high schools: fewer students placing into EN085 and more placing into EN100 and EN110. Another element of this outreach began when GDOE requested professional development training in EPT work for their faculty. This training focused on calibration, an integral part of the composition program. Calibration for scoring placement essays is a long-established part of the program and has helped move it toward a community of practice. As professional development within composition and as part of outreach, faculty calibrate as a collaborative activity that promotes interrater reliability and participation in the discourse of composition and rhetoric. Sharing the practice of calibration with these high school counterparts involved several cohorts of teachers who, using actual student writing, trained to calibrate their assessment feedback and ratings with those of their peers and of the EPT team of raters. One goal of this training was, via this calibration process, to discuss the definition of academic writing. That is, participants unpacked definitions of academic writing, their approaches to teaching, their expectations of student writing, and the nature of their feedback to student writing, all of these elements juxtaposed with the EPT team's definitions, approaches, expectations, and feedback.

In this training, the composition team provided a grading packet of four or five essays from past placement tests, with names and identifying information redacted. All teachers rated the essays using the EPT rubric and a Likert scale of 0 to 5. Teachers were told that scores falling between 0 and 3 indicated underprepared writing. All

sessions included rating of student essays in comparison to EPT raters' comments and the actual placement scores. These sessions helped elucidate different expectations of grammatical precision in writing as a key indicator in preparedness. Through calibration and discussion with the EPT trainers, the participating teachers saw that the trainers' placement practice was to view academic writing holistically, consider grammar rhetorically, look at idea development, and accept varied rhetorical strategies and structures.

Unified Syllabuses and Assignments

Over the past several years, the number of courses used to deliver the first-year composition curriculum has been reduced from five to three and then to two. Regardless of how many courses the evolving curriculum design has called for, in most semesters approximately four hundred students enroll in classes of about twenty each. These numbers frequently mean more than twenty sections of first-year composition courses in a semester.

Some university programs assign the teaching of first-year writing to graduate students and part-time instructors. In contrast, UOG's composition program has a core faculty of full-time instructors experienced with the study and practice of teaching writing and its complement, reading. The primary work of these faculty members is the teaching of composition and the progress of the program. The full time contingent varies between five and ten, with one or two tenure-track faculty and the rest non-tenure track. These instructors bring with them a variety of degrees, including MAs, MEds, MFAs, and PhDs, along with extensive teaching experience. This full-time faculty is joined by a contingent of experienced and well-qualified part-timers when enrollment demands more sections than full-time composition faculty can cover. In addition, the English graduate program trains students who study the teaching of composition and may join the faculty during their final year of graduate school as graduate student instructors, working closely with the full-time faculty. One thing all the composition faculty have in common is a passion for teaching and studying writing and for supporting student success.

These multi-section courses challenge the program to assist a diverse faculty with a range of pedagogical approaches to deliver classes that consistently prepare students for success with college writing. To meet this challenge, the program has two goals: alignment across sections so that students are similarly prepared for future coursework and encouraging instructors to use their individual strengths to address student learning. Thus, this curricular transformation emphasized unification over standardization, an approach that preserves academic freedom and allows students to benefit from instructor expertise.

One strategy for achieving this balance is the unified syllabuses, the creation of which was one of the first major programmatic changes to occur. Prior to developing the unified syllabuses, the college Dean shared observations from reading over 40 syllabuses from the multi-section courses. The syllabuses indicated disparate student experience throughout the sections, in amount and type of writing and in assigned textbooks and readings. As a response to this disparity, beginning in 2014, composition faculty were asked to develop an agreed-upon syllabus, first for EN100 then for EN110 and EN111.

The idea of unified syllabuses was a significant shift in practice, yet they became part of an increasingly connected and reflective discourse within the composition faculty on pedagogy and strategies based in research, theory, and experience. All these syllabuses were reviewed by the Composition Committee, after which individual composition faculty adopted and adapted the syllabuses for their assigned sections of composition classes. The unified syllabuses are now in use for all sections and are revised and updated each year based on feedback from faculty. Periodic working sessions on adapting these syllabuses to an instructor's own approach are held.

The challenge in designing a unified syllabus for each of the composition classes was preserving faculty choice in instructional design while unifying what students were learning across each section. The concern was to keep the rich diversity of approaches that faculty employ in their classrooms while providing an effective, shared learning experience for students. So, composition faculty had to determine what would be the shared experiences across the sections.

One decision about the unified syllabuses was that all would include a complete picture for students of how their composition classes fit into a larger view of their university education. Making this clear in a syllabus meant creating an alignment matrix to show students how the learning outcomes of their course line up with the outcomes of other courses in the composition sequence, the composition program, the general education requirements, and the university outcomes. This matrix was generated by working groups and approved by the Composition Committee.

Students' work in each section should be aligned with course learning outcomes. Therefore, the unified syllabuses emphasized academic writing in each course and ensured a minimum amount of such writing in each section. Students' work in EN110 took the form of writing at least three essays that use three types of evidence: observation, recollection, and published text. In EN111, students must write a research paper along with attendant process documents, such as an annotated bibliography. What the required work in the unified syllabuses means is that while all instructors use their own preferred methods based on their theories of learning and their own tried-and-true strategies, some aspects of the course are similar for all students no matter which instructor teaches them.

Faculty agreed that students should be able to know what textbooks they would be using and that if they changed sections, they would have the same texts. They should have the best possible chance of buying a used text or selling their used books once they have completed the course. Therefore, the Composition Committee selected and adopted textbooks to be used in all sections of each course, based on the textbooks' positioning with course outcomes, clarity, coverage, reasonable price, and usefulness to students in later courses.

The alignment across the multi-section courses also had to address assessment. The program values formative assessment, as evidenced by the learning outcomes which encompass process informed by instructor and peer feedback. Further, as practitioners the faculty resist the tendency for assessment to control or overwhelm instruction. Thus, the assessments must be designed to be both formative and summative in a manner consistent with the outcomes, without prescribing or limiting instruction. No assessment can examine all the learning valued in a course, unless that learning is restricted to and controlled by the assessment, which is not the approach the program takes. Therefore, a shared assessment to be implemented across the sections of a course needed to be positioned in the context of all the writing tasks of the course, rather than as a single high-stakes test. The shared assessment needed to ask students to not only demonstrate prior learning, but also provide opportunities for synthesis as part of the task.

The means selected for this unified assessment was a common assignment for each course, useful to instructors and students as formative and summative to inform progress and gauge achievement, but specifically designed for program assessment. This common assignment asked all students in each section to complete the same assignment for comparison of learning across all the sections. Once collected and analyzed, aggregated common assignment data could reveal strengths and weaknesses in student writing throughout the sections. Based on this information, the composition program and individual faculty in their classrooms could focus instruction to build on strengths and address weaknesses. Coherence in administration of the common assignment and support for faculty included calibration, scoring sessions, teaching assistants to help prepare materials, and use of the same rubric faculty were familiar with from placement testing.

When scoring common assignments, the goal is to assess successful responses within the desired outcomes of the course. Instructors score their own students' common assignments and report the scores to the composition director or an assessment coordinator, both of whom are composition faculty. All faculty calibrate at least annually on scoring students' common assignments, in order to not only establish interrater reliability but to foster a community of practice. While calibration in various forms has long been part of composition, calibration on the common assignments has become a part of composition faculty orientation. Because effective rhetoric is highly contextual, cultural, and disciplinary, as a program we tend toward holistic assessment of the essays we read, using discrete skill analysis diagnostically as one part of differentiating instruction for individual students and as one way to identify gaps in curriculum or instruction.

At the class level, the initial common assignment in each course is formative in that it informs instruction. This pre-instruction common assignment provides students and their instructors with a diagnostic that is used for planning goals for individual students and for the class. This diagnostic role of the common assignment has become increasingly valuable to supporting students through differentiated instruction. The final common assignment is summative for the course in which it is given. Collectively, the combined end term common assignment in EN110 and the initial common assignment in EN111 inform the instruction in both courses pragmatically at the program level. Common assignment data is analyzed annually within composition's assessment plan.

The common assignment evolves with the program. When the common assignment was first adopted, it was administered at mid-term and again at the end of the semester. The reason for this schedule was to see where student writing was at mid-term after several weeks of instruction and then at the completion of instruction during the final week of the semester. In academic year 2019-2020, the research questions for program assessment began to look at the transfer of writing knowledge from one course to another. To facilitate assessing transfer, the Composition Committee decided to administer the common assignment at the beginning and end of the semester. At the beginning of the semester, the assessment gives program-wide information on what writing skills students bring into their college writing course. The semester-end assessment gives information about student growth as writers and what they are taking away from the course. Comparing semester-end results in EN110 with beginning of semester results in EN111 helps show how well students are preparing for EN111 in order to inform decisions about curriculum and instruction. Another aspect of the evolution of the common assignment is that students now return to their initial, beginning of semester essay and revise it for the end-of-semester essay as an opportunity to demonstrate revision skills.

Professional Development

Developing, implementing, and maintaining a dynamic program that effectively supports student success requires an engaged faculty, supported through an environment of reflection and learning and a commitment to professional development. Two aspects of this support are mentoring for new faculty by experienced colleagues and full-time faculty liaisons for each course. Mentors assist new faculty while the liaisons assist with the ongoing challenge of staying connected with part-time faculty, many of whom also have other work so are not freely available to attend meetings and often teach evenings when full-time faculty have left campus. Liaisons help fill this gap by sharing information and making themselves available for ongoing consultation with part-time faculty. Other faculty support since 2010 includes an online space for sharing composition materials and a composition faculty guidebook. The guidebook contains program information, policies, and resources such as course outlines and syllabuses, which are revised for each academic year based on program changes and faculty feedback. The guidebook is shared with full and part-time faculty at an annual composition faculty orientation each August before the start of the academic year. In addition to distribution in binder format, the guidebook is available to composition faculty in digital form on an online repository of composition materials, which includes forums for faculty to share information and viewpoints.

Student Support

Because the purpose of the entire program, including faculty development and curriculum design, is student learning, a crucial element is direct student support. One of the key pieces of this support is composition's Writing Center. Since 2010, the Writing Center has expanded from three tutors who worked only a few hours each week to a team of about a dozen trained tutors, undergraduate and graduate students who conduct one-to-one tutorials, group tutorials, and workshops.

Expanding the tutoring services offered at the Writing Center, in 2012 the composition program began placing classroom-based or embedded tutors in various composition courses. Embedded tutors are trained peer tutors who attend class sessions for their assigned section. Unlike the tutorial services offered within the Writing Center, “classroom-based writing tutoring describes tutoring arrangements clearly integral to writing instruction—writing support offered directly to students during class” (Spigelman & Grobman, 2005, p. 1). Embedded tutors meet regularly with the instructor so that they are well-informed about assignments and expectations. In contrast to

teaching assistants, or TAs, who might be asked to assist the instructor with clerical tasks such as photocopying and might grade papers as part of their work, tutors work with the students and do not perform the functions of a TA. The embedded tutor has a complex role combining that of an informal mentor, modeling effective student practice, and an experienced peer, facilitating one-to-one tutorials, workshops, group sessions, or discussions. Embedded tutors share their own struggles and discoveries as students themselves; they may work one-to-one with individual students or small groups on assignments or concepts. Most embedded tutors are also available in the Writing Center outside of class time and can give the students from the class in which they are embedded priority for appointments during their regular Writing Center hours.

Embedded tutors first worked in EN085 classes, and not long after also joined EN100. All the students who participated in a study conducted after the pilot of the embedded tutor project reported finding the tutors helpful during class. Most found the tutors also helpful outside of class, in tutorial sessions or workshops. The students valued the embedded tutors as models, sources of information or assistance, and spokespersons; they accepted the tutors as part of their community of learners. Instructors, despite some initial concerns about the presence of a tutor in the classroom, came to value the tutor as one more person helping the students. This study also found that instructors, after adjusting to having a tutor present in the classroom, found the embedded tutors to be helpful in much the same ways students found them helpful.

As one of its student support features, EN085 provided an advisor for incoming students who gave them information about registering for courses and meeting general education requirements. The advisor also answered students' questions about college. Later in the semester, an instructor or advisor worked with the students again on registering for the next semester. After EN085 was phased out of the composition program, an advisor for the college was engaged to assist all entering students by helping them with registration and answering questions about college.

Because entering students have a wide range of reading skills, the composition program includes individualized reading instruction for those who need it. Before 2012 this reading work, which was situated in EN085, took the form of an on-campus reading lab. As part of their EN085 work, students took a diagnostic test and then read short selections of text at their identified reading level and answered questions about the content. Pre and post testing showed that students' reading improved; however, not all students' schedules allowed them to do this reading work on campus during reading lab hours. And the reading selections were limited in quantity and variety. So, in 2012, the Composition Director identified an online reading program that could be accessed from any computer with an internet connection, and this online program was piloted. A comparison of the reading scores of participating students who used the on-campus lab with those who used the online reading program showed slightly better results for students using the online program. Several computers were set up in the Writing Center for students to access the online program and the online program was adopted for all sections of EN085. In addition to access to computers, the Writing Center provided tutorial support for the online program. Later, due to the success of the online instruction, the program was extended to EN100, with similar success.

Part II: Curricular Change

In 2016, the programmatic shift continued to develop with curricular change and attendant development of faculty and student support. Building on the work with outreach, multi-section course alignment, professional development, and student support, composition began to address curriculum. The impetus for curricular change came from the combination of placement statistics that showed fewer students in the developmental classes and UOG's engagement with questions about remedial courses in higher education within the national discourse.

Accelerating Course Delivery

The first phase of curricular change was accelerating EN085 and EN100 delivery. These courses had not been taught during the shorter summer sessions nor during the four-week intersession between fall and spring semesters. However, acceleration had become a significant part of the conversation on increasing student

progress towards degree over the past decade, motivated by the concept that student success in college work will increase if underprepared students can advance to college-level work more quickly (Edgecombe, 2011). Thus in 2014, the composition program initiated a project to accelerate the curriculum of these two developmental courses. Syllabuses were developed for the accelerated versions and the Writing Center tutors prepared to assist the students.

The literature on developmental education shows that various acceleration models have been implemented, many based on "the reorganization of instruction and curricula in ways that facilitate the completion of educational requirements in an expedited manner" (Edgecombe, 2011, p. 4) with courses that "should look and feel like a good, standard college English course, but with more support and guidance" (Hern & Snell, 2013, p. 7). The accelerated pilots followed the compressed course model, which has been described as having the usual amount of instruction but "within a truncated timeframe'" (Edgecombe, p. 4). Thus, these accelerated classes aligned with the conventional course through shared objectives, number of contact hours, unified syllabus, common assignments, and exit essay exam. One aspect of this compressed model is that despite the shortened timeframe, these courses need to "provide more rigorous experiences than those typical of remedial curricula" (Hern & Snell, p. 5). To accomplish this rigor, the course design should "reject linear accumulation of sub-skills" while giving students opportunities to "practice with college-level skills, content, and ways of thinking" and to "reason their ways through open-ended questions on topics that matter" (p. 5). These concepts, along with the results of the accelerated EN085 pilot conducted during Summer 2015, provided the basis for an accelerated EN100 pilot during Intersession 2015. The exit essay and pass rate of the accelerated versions showed success comparable to or better than the regular semester, opening the possibility of acceleration as a means of assisting students through the composition sequence.

Course Redesign

As the percentage of incoming students placing directly into EN110 continued to increase, in Spring 2016, the composition program was charged with redesigning the curriculum with the objective of reducing developmental composition courses. During the process of redesigning the composition sequence to absorb these two courses, we became part of a working group, formed to address the course sequence. This group shared the commitment to student success articulated in the *Good to Great Implementation Plan* (2014) in its statement that "effectiveness in higher education is student success" (p. 8) and the elaboration of this concept in that "the road to the Great UOG requires that we engage each student as an active learner and provide systems that move them to degree completion with due consideration of the obstacles that they face" (p. 9) and in the cautionary statement that "as an open admissions institution, we take students as they come, but we may not be giving them the support that they need to succeed" (p. 8). We strongly agreed with the *Good to Great* insight that "we are an instructionally-focused institution but we rarely focus on the student view of the academic experience" (p. 8). In light of this, we talked with former EN085 students who confirmed the impression that students not only want to earn a four-year degree but want to matriculate from the start at a four-year institution. The students we talked to felt that a pre-college level placement did not affect this desire to belong to an institution offering four-year degrees.

Research on college success emphasizes the importance of a sense of belonging (Chu et al. 2013; Strayhorn 2018; Tinto, 2017), and we saw these students from their first semester making friends, building networks, getting to know faculty, using campus resources such as the Writing Center and TRIO, and in so doing building a sense of belonging to the UOG community. These students saw their pathway to a degree as a continuum, rather than as stages of preparedness. The courses EN085 and EN100 were serving a purpose. These courses allowed for addressing the needs of students with a wide range of language and writing backgrounds and thus live up to the promise of UOG's open-enrollment status as a means to a higher education degree regardless of pre-college experience. The pass rates were viable; students were learning, as shown by pre and post testing and conversations such as the ones mentioned above. Many students began in the developmental classes and proceeded to graduate with baccalaureate degrees. Yet the need for these classes was declining and students often felt discouraged by "placing" at less than college-level and having their schedules restricted. How would the composition program continue to serve the needs of all incoming students without these specialized courses?

An early step in addressing this question was a forum on course redesign, held in June 2016, that was attended by composition faculty members, the college student advisor, and the Writing Center head tutor. The college Associate Dean outlined the impetus for redesign, citing trends in developmental education and the implementation of the *Good to Great* self-study mandates. She noted that over the past four years, fewer students had placed into EN085 and pass rates had increased, a result most likely attributable at least in part to multi-section course alignment through unified syllabi, common assignments, closer calibration of writing assessment, and outreach. The main themes that emerged from the forum were reduction of stigma associated with developmental classes, professional development opportunities for faculty, and an expanded role for embedded tutors.

Articulating this redesign as absorption rather than elimination of EN085 clarified the program's commitment to students who wish to belong to the university as they prepare for college-level writing. This redesign would require re-envisioning EN100 and possibly EN110 in order to address the outcomes of EN085 while supporting students successfully through the composition sequence.

In the summer of 2016, we four were part of a team of several instructors, who had extensive experience with incoming students and with all the composition courses, that assembled to study possibilities and determine what could be done to phase out EN085. This team decided that simply adding the material covered in EN085 to EN100 was not feasible. Instead, we identified gaps in the two courses, suggesting the need for closer integration of reading and writing, contextual coverage of syntax, more extensive college-level reading, and increased support through specially trained tutors and differentiated instruction. A three-credit course would be insufficient to handle this, and we were trying to reduce the number of pre-college courses.

As a result of this re-design work, a new course, EN109 Introduction to College Composition, came to be: a four-credit, rigorous course in college-level writing and reading with enough support to prepare students for EN110. This new course was endorsed by the Composition Committee and approved for inclusion in the UOG catalog. Work proceeded on development of a unified syllabus, adoption of textbooks, establishment of parameters for a common assignment, organization of faculty workshops, communication with TRIO on preparing students, and preparation for outreach to the university community and feeder high schools in the coming semester regarding the change in the sequence. An implementation workshop for composition faculty was held before the start of the academic year.

In 2017, EN109 replaced EN085 and EN100 for the purpose of assisting the university's less prepared students in their transition to college writing. The four-credit EN109 offered students the opportunity to prepare for college writing in one semester rather than two, and, with demonstrated achievement, to have the EN110 requirement waived. The initial offering of EN109 was in Summer 2017. Of the 21 students who took the course, 20 passed, a 95% pass rate. During the redesign work, implicit understanding of the program's purpose was crafted into a mission statement to synthesize and articulate that vision:

> *Tuge', Taitai, Hasso (Write, Read, Think)*
>
> The Composition Program of the Division of English and Applied Linguistics (DEAL) recognizes writing, reading, and critical thinking abilities as essential to academic and life-long success in local, regional, and global contexts. The program serves UOG's predominantly Pacific Islander and Asian student populations from diverse ethnic, linguistic, socio-economic, and educational backgrounds who desire to be part of a university community. As a pathway to academic success, the program creates an open-access environment of intellectual, social, and cultural inclusivity, meeting students at their current abilities. Through culturally balanced and collaborative approaches, faculty and students read and write to critically explore and apply meaningful knowledge, skills, attitudes, and experiences to their pursuit of evidence-based truths (Composition Program, 2019).

Elaborating on the mission, the team also formulated program outcomes to link the mission with course outcomes.

> The Composition Learning Outcomes state, upon completion of the composition sequence, students should be able to demonstrate the academic composition fluency necessary to perform critical literacy tasks in general and major university courses and for personal, civic, and professional purposes by:
>
> 1) Synthesizing evidence and knowledge from local, regional, and global sources judiciously, critically, and meaningfully.
> 2) Using individual and collaborative writing processes to produce textual works, recognizing that writing develops and conveys understanding.
> 3) Identifying critical elements of context to make rhetorical choices appropriate to audience, purpose, and genre. (Composition Program, 2019)

The Composition Committee reviewed and approved final versions of the mission and outcomes.

Expanded Professional Development

During this process of redesign, professional development was expanded with more opportunities for faculty to consult, collaborate, and learn together and from each other. A faculty-initiated professional development opportunity that began in 2016 was faculty reading groups. Faculty reading groups provide what Baldwin and Chang (2007) described as "support for intellectual community" (p. 28) and as such are opportunities for professional development and for building collaborative capacity. Beyond this function, reading groups are also places for supporting improvements in individual practice or program change. The reading groups have studied literacy in the 21st century and cross-language, both topics which enhanced understanding of how contemporary issues in the discipline of composition relate to participants' experience. In another reading group, study of instructor-student writing conferences provided a collaborative space in which these conferences were identified as a crucial strategy for differentiating instruction as the courses began to encompass a wider range of student skills. Surveys of the reading group participants showed that they saw the groups increasing collegiality, reflective practice, and engagement in academic discourse.

In 2017, at the urging of the Associate Dean, the faculty held a mini-symposium for members to share concepts from a regional conference they had attended. The Composition Committee decided to continue holding such mini-symposiums at least once a year on topics chosen for relevance to the program. Mini-symposiums have addressed teaching strategies, assessment theory and practice, indigenous frameworks for learning, high impact practices, veterans in the composition classroom, and using online teaching tools. In addition to the information provided at these mini-symposiums, they provide opportunity for composition faculty to reflect and consult on effective practice.

Two-Course Sequence with Integrated Student Support

By early 2019, the percentage of students placing directly into EN110 was continuing to grow. Based on this trend, the Associate Dean consulted with composition faculty to explore the possibility of placing all incoming students directly into EN110. In fact, this approach had been considered during the redesign that resulted in the new EN109 course. The increasing number of placements into EN110 since then made this approach seem timely. The faculty response was positive, but it came with the need to strategize the transition from a multi-course placement system to a policy of starting all new students at EN110, including communicating the change to incoming students, the UOG community, and the larger community along with preparing and supporting faculty to differentiate instruction in order to teach students with a wider range of preparedness in the same class.

The switch from a placement process that assigned students to enter the composition program in a particular course based on a panel of assessments to direct entry into EN110 for all students was made in August 2019, after a summer of preparation. This preparation included increasing the resources of the Writing Center, implementing

diagnostic testing for incoming students, planning for advisement of incoming students, designing supplementary instructional workshops for students, training faculty in support strategies, and revising materials such as the unified syllabus and guidebook. The Composition Committee also adopted an EN110 self-assessment essay to find out how students saw their learning about writing over the semester.

This change in curriculum mirrors co-requisite models in the support offered but does not require the additional credit-bearing hours some co-requisite models include, as this design corresponds to UOG students' scheduling and financial needs. The Composition Committee and several working groups extended or modified many of the elements of student support already in place to provide increased individualization of student support. The former English Placement Test shifted to become an English Preparedness Test to be used in concert with the pre-instruction common assignment and a reading diagnostic. Instructors use this diagnostic information to advise students on their preparedness and assist them to make a work plan for the semester. Work plans include the students' goals for the course and how they will use the available supplementary assistance to achieve those goals. Supplementary assistance includes the online reading program, faculty-designed and led instructional workshops, and resources available through the Writing Center, such as one-to-one or group tutorials and workshops on writing skills. Research and experience with embedded tutoring had previously led to embedding tutors in EN109 when it took the place of EN085 and EN100. With all students enrolled directly into EN110, embedded tutors were assigned to join EN110 classes as an integral part of individualized support, particularly for those students needing extra assistance with the course.

Adjustment was also made to the textbook requirements in order to increase coherence between EN110 and EN111. The adopted textbooks are a writing handbook, a textbook on issues in college writing, and a book on rhetorical moves that academic writers make in their work. The handbook was required in both courses, as a reference and a source of additional information about topics covered in class. The text on issues in writing was adopted for EN110, and the other textbook on the rhetorical moves of academic writing was adopted for EN111. During a review of textbook selections, faculty observed that they found all three textbooks useful in both classes. Consequently, the Composition Committee decided to include all three in EN110 with their use continued in EN111. This change increased continuity between the courses and allowed students to acquire the books when they begin EN110 without the need to purchase additional textbooks for EN111.

Throughout the changes in the program, data have indicated that the curriculum and support have served students' needs and abilities. Pass rates in EN109 exceeded pass rates in EN085 and EN100, increasing from about 70% to 84%. And during the time that EN109 replaced EN085 and EN100, pass rates in EN110 were maintained or slightly increased, an indication that students going from EN109 to EN110 were as prepared for the course as students who took EN085 and EN100. Similarly, when all incoming students were placed directly into EN110, with diagnostic-based support provided, the pass rates remained consistently over 80%.

Whatever form the first-year composition curriculum takes and whatever mastery of writing skills students attain, first-year writing is not senior writing. Students’ writing must continue to develop and mature as their knowledge and understanding of various disciplines, particularly in their major field of study, expands over their subsequent years of college. How well do students build on their first-year writing? Developing and assessing writing skills over the entire four-year degree program will require collaboration across the campus.

UOG's institutional goals for students include lifelong learning. This also applies to all of us in the composition faculty as professionals in practice. Our program works as a community of practice, not simply a program within which a community functions. Moreover, we are part of the larger communities of the university and the wider communities outside the university. We are focused on student support and on commitment to the value of writing as community engagement and expression of the layers of identity within which students and faculty function. This community is invigorated by both teaching and learning.

Part III: Para Manu Hit Pa'go? (Where to Now?)

Using the mission statement as a framework, we in the composition program have expanded the discussion of what it means to teach college writing in English at a university in the Western Pacific, realizing that this requires a commitment to looking at both what we teach and how we teach it. The *Good to Great* (2014) report was explicit about what UOG envisions: A Pacific university, serving island societies with "global outreach but island focus" (p. 7).

Sometimes regionalization is addressed superficially with the addition of Pacific text or themes to a course. But regionalizing is not just about content and materials. Many aspects of UOG's composition program are common to many composition programs and do not directly address the conversation about an approach appropriate for this region. One of the activities students often do in EN110 is to position themselves in the history of college composition and consider their own use of language through concepts such as code mixing, authority, agency, standardized English, and social implications of language use. The students' work with these concepts prepares them for reflective and analytical college work which addresses regional history, cultures, and issues along with connections to the wider world community.

Work on regional aspects of the program is in its early stages. To frame an approach within regional values and ways of being, we can look to Hattori (2016) on culturally sustaining concepts, which presented practice rooted in Chamorro ways of knowing as "*pa'a taotao tano'* (ways of the people of the land)." In particular, Hattori described *inimi'di* (belonging) which though "community-building activities to promote a communal identity, employ teams and mentoring arrangements to foster collaboration rather than competition, acknowledge every person, and cultivate feelings of belonging and recognition."

Changes to the composition program over the past ten years suggest the adaptability of the curriculum through reflective practice of faculty. The process we describe here of working to serve the needs of the students with a regionally informed, vital, research and data-based program is ongoing. Within the program, varied and often intersecting communities of practice both formal and informal form and re-form to meet student and faculty needs. The approach to shaping change described here is specific to a situation, thus this narrative may not align with experiences of other programs. However, the result of the work done over the past years, at least for this program, is a structure and ethos for continued data collection, reflection, and collaboration in which a dedicated faculty works for student success.

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INADENTEFIKAN CHINATSAGA NI' KUMONTRIBUBUYI I KINAGUAN TINAKA' SIHA PARA I LALÅHEN CHAMORU GI I UNIBETSEDÅT GUÅHAN:

IDENTIFYING HURDLES CONTRIBUTING TO ACHIEVEMENT GAPS OF CHAMORU MALES AT THE UNIVERSITY OF GUAM

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This report examined and revealed the achievement gaps of CHamoru male students at the University of Guam (UOG). The research study implemented a qualitative approach using a collective case study of 10 CHamoru males who have attended UOG for at least one semester without completing a degree program. The use of a demographic survey and in-depth interviews were the means for the collection of data. The educational experiences of CHamoru male students in the higher education landscape were recounted and explained in the responses and narratives of individual contributors. The experiences of CHamoru male students at the post-secondary level were shared through their expressions and stories below. Further, the findings in this study highlighted and furnished a greater understanding of the struggles that obstructed CHamoru male students from successfully completing a college degree and what can be done to help resolve the achievement gaps of the respective group in the higher education setting. Recommendations as to effective interventions and programs to support young CHamoru men in higher learning were offered in hopes of improving high retention and graduation rates at UOG.

Keywords: Persistence, Masculinity, Male Student Retention, CHamoru

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Introduction

The University of Guam is a public, open admissions, accredited, four-year, land grant institution (WASC Senior College and University Commission [WSCUC], 2016). The institution started in 1952 as the College of Guam and presently offers 34 undergraduate bachelor's degree programs and 14 graduate programs. The UOG mainly serves postsecondary students from the island of Guam and throughout Micronesia. The student population for UOG is approximately 4,000 (WSCUC, 2016).

At UOG, the achievement gap among CHamoru males is of notable concern. The Office of Institutional Effectiveness [OIE], University of Guam [UOG], 2019) provided an analysis of retention and graduation of first time, full time freshmen cohorts and compared the overall cohorts to the CHamoru male student population for 2009-2017.

Retention

The University of Guam tracked fall-to-fall retention rates disaggregated by gender, ethnicity, and academic program for further analysis. The calculated fall-to-fall retention rates for the 2009 through 2017 cohorts ranged from a low of 67% for the 2009 cohort to a high of 77% for the 2014 cohort, and with a rate of 73% for the 2017 cohort. The average for the nine cohorts was 73%. When the cohorts were disaggregated by gender, the average retention rate for males in these cohorts was 70%, three (3) percentage points lower than the overall retention rate. Further disaggregating the male cohorts by ethnicity and gender resulted in a fall-to-fall average retention rate of 65% for Chamorro males which is eight (8) percentage points lower than the average retention rate and five (5) percentage points lower than the average retention rate for all males in these cohorts at UOG.

Student Success (6-year Graduation Rates)

The University of Guam also tracked graduation rates of full time, first time freshmen cohorts that start in the fall semester. These rates were further disaggregated by gender, ethnicity, and academic program for further analysis. The calculated 6-year graduation rates for the 2009 through 2012 cohorts ranged from a low of 27% for the 2009 cohort to a high of 35% for the 2011 cohort, and with the most recent graduation rate of 33% for the 2012 cohort. The overall average graduation rate for the four cohorts was 31%. When the cohorts were disaggregated by gender, the average 6-year graduation rate for males in the cohorts was 26%, which is five (5) percentage points lower than the overall graduation rate for all students at UOG. Further the disaggregated of the cohorts by ethnicity and gender results in a graduation rate of 23% for Chamorro males, which was eight (8) percentage points lower than the overall average graduation rate and three (3) percentage points lower than the average retention rate for all male students at UOG.

Retention

The University of Guam tracked annual retention rates from the second year through to the sixth year of full time, first time freshmen cohorts that enrolled for each fall semester and disaggregated these rates by gender, ethnicity, and academic program for further analysis. An analysis of the retention rate of students who continue to the 6th year for the 2009 through 2013 cohorts revealed an average of 63%. Further disaggregating the cohorts by gender for the 2009 through 2013 cohorts showed a retention rate of male students at 25%, a staggering 38 percentage points lower than the average continuation rate for all students. Further disaggregating the cohorts by ethnicity and gender for the 2009 through 2013 showed an average continuation rate of 26% for Chamorro males, which is 37 percentage points lower than the average retention rate for all students, but one (1) percentage point *higher* than the overall average 6th year continuation rate for all male students. The average stop-out rate for all students by the sixth year is 37%, compared to 63% for Chamorro males in these cohorts (OIE UOG, 2019). Thus, the attrition rate for CHamoru males in every cohort is much higher than for all males at UOG.

Table 1. Retention of Males at University of Guam

May 2019 Student Success Indicators	Overall Cohort Averages	Male Cohort Averages	Chamorro Males Cohort Averages
Fall to Fall Retention Rates (cohorts 2009-2017)	73%	70%	65%
% Graduated in 6 Years (cohorts 2009 – 2012)	31%	26%	23%
% Continued to 6th Year (cohorts 2009- 2013)	63%	25%	26%

Source: Certified Fall Semesters Enrollment and Certified Graduation Records.

CHamoru males struggle to seek and complete higher education for a variety of internal and external reasons. This research study will not close the aspiration gap; however, it may help to identify reasons for the gap, which continues to disempower the young men of Guam. The study explored the hurdles influencing the academic achievement of CHamoru males within the postsecondary education environment. The analysis of the data was critical in ascertaining if the aforementioned factors impacted the achievement gap of CHamoru males in college.

Purpose of the Study and Research Questions

This research study investigated the achievement gap of CHamoru male students at the post-secondary level, the roadblocks leading to academic achievement, and their perspectives on success. Hence, three research questions guided this study:

1. What are the hurdles influencing the achievement gap of the CHamoru male student population at the University of Guam?

2. What are the attitudes of CHamoru men toward seeking a higher education?
3. What effective interventions and programs can UOG implement to support CHamoru male students to persist and complete a college degree program?

Significance of the Study

The findings from this study provided a better understanding of how UOG can help to improve the educational experiences, persistence, and success of CHamoru male students in the higher learning landscape. In addition, the retention rates of UOG among the CHamoru male population may see significant improvement. Further, the study provided valuable information to UOG on the needs of CHamoru male students when they enter higher education. Resolving the achievement gap of this group may help the Guam community have effective and efficient CHamoru male leaders as future administrators and prospective civic leaders.

Literature Review

The theoretical framework that embedded this study is a review of literature in three disciplines: sociology, education, and psychology. For the sociology frame, the literature review examined Guam's culture, gender differences, and role theory. For the education frame, the review of literature concentrated on the achievement gap at the college level and the barriers that prevent CHamoru males from successfully completing a degree. The review of literature in the psychology frame focused on the motivational theory and the attitudes toward a college education.

Social Factors

In Guam's history and culture, men assumed roles in the community serving as chiefs, spiritual leaders, or combatants (Sanchez, 1991). During the United States' naval period, the abomination of the Japanese occupation, and post-war Guam, CHamoru men displayed a strong sense of patriotism through enlistment into one of the United States Armed forces (Ballendorf, 1997; Untalan, 2016; Viernes, 2010). Military life and vocation was the choice for most CHamoru men on Guam (Untalan, 2016). In addition to fighting for their country and island through military affairs, CHamoru men also assumed political roles that shaped Guam's political status in becoming an unincorporated Territory of the United States (Carano & Sanchez, 1969; Rogers, 2011). Further, because of the political aspirations, determination, and zeal of CHamoru men, the people of Guam hold United States citizenship (Hofschneider, 2001). Thus, in Guam's history, Chamorro men engaged in and assumed critical and vital roles for the survival and protection of their family and island community. Further, evidence showed that Chamorro men exhibited courageous, valiant, and heroic qualities that have greatly influenced the social, economic, and political structures on the Island of Guam in the 21st century. Bevacqua and Bowman (2016) discuss a popular Guam legend called "The Legend of Gadao" that was a very popular tale among the CHamoru people. Gadao was a legendary maga'låhi (male leader) from a southern village on Guam who displayed great leadership abilities and "helped to encourage contemporary Chamorros to embrace their ancient past" (p.73). Furthermore, Bevacqua and Bowman (2016) contended that, "the focus on Gadao ultimately came to symbolize an individualistic and masculine concept of leadership" (p.73). The next section discussed the concept of masculinity as it relates to Chamorro males on Guam.

The concept of masculinity may be an impediment and barrier to the academic success of most males (Jackson & Dempster, 2009). Some males think that the elimination of scholastic pursuits is a manifestation of their manhood (Kimmel & Sommers, 2013), and that the pursuit of educational accomplishment is intuitive to displaying and exhibiting feminine behaviors (Kehler & Greig, 2005). Similarly, on Guam, over two decades ago, at the high school level, Chamorro students in Guam's public schools viewed school as feminine while stateside students thought of school as masculine (Hendricks, 1990). A possible reason for this perspective is that Guam's culture is based on a matriarchal society (Aguon, 1988; Hendricks, 1990).

Further, on Guam, masculinity, as defined in a Chamorro context, may take on a whole different meaning than in Western cultures (Viernes, 2010). Tanji (n.d.) stated that, "notions of masculinity and femininity are closely integrated into Chamorro life experiences that support US militarism and military occupation in postwar Guam" (p. 99). Young Chamorro men have enlisted into the U.S. military which is "one of the strongest and most persistent examples of Chamorro men pursing a validation of their self-worth through capitalist enterprises is the steady flow of men into the U.S. military" (Viernes, 2010, p. 9). The motivation of Chamorro men to be involved and participate in the military is to see the world, advance themselves economically, and to provide more materially for their families (Viernes, 2010). Tanji (n.d.) asserted that "military service as an expression of patriotic loyalty to Uncle Sam constructs an important part of contemporary hegemonic Chamorro masculinity" (p. 103).

Consequently, in the sociology frame, historical events revealed that Chamorro males participated in various roles that benefited members of their family and citizenry. Further, during Guam's colonial period, Chamorro males engaged in U.S. military as advocates of the United States and its interests, and involvement in the political arena with initiatives, enthusiasm, and determination that has shaped the Island of Guam in the 20th and 21st centuries. Finally, the concept of masculinity was highlighted underlining the idea that the display of masculine traits and conduct by men is opposed to satisfactory academic behaviors.

Educational Factors

The achievement gap of college degrees in the United States is at a crossroads for many male students (Ross, Kena, Rathbun, KewalRamani, Zhang, Kristapovich, & Manning, 2012), and a significant number of college male students in the United States continue to grapple with academic achievements (Marrs, 2016). To help bridge the gap between aspiration and attainment of a higher degree, former First Lady Michelle Obama established The Reach Higher Initiative, in support of former President Obama's North Star goals (U.S. Department of Education, 2017). The objective of North Star is that the United States of America produce the highest proportion of college graduates in the world by 2020 (U.S. Department of Education, 2017).

On Guam, the achievement gap among CHamoru males is troubling for the University of Guam (Smith, 2008). Many contributing factors hinder CHamoru males from attaining a college degree such as work, family obligations and responsibilities, lack of motivation and confidence to attend college, and a lack of college readiness (A. Leon Guerrero, personal communication, May 2, 2019). Smith contended, "one hypothesis is that CHamoru males are particularly likely to have strongly competing commitments as wage-earners, which take time away from their studies. I don't know whether that's the case, but it's worth checking with relevant data" (K. Smith, personal communication, May 30, 2019). CHamoru male students at the University of Guam are at a high risk for stopping out and not completing a college degree (Smith, 2008).

Psychology Factors

Motivation is described as "activation to action. Level of motivation is reflected in choice of courses of action, and in the intensity and persistence of effort" (Bandura, 1994, p. 2). An essential element to academic accomplishment and success in higher education is motivation (Sogunro, 2015). Motivation permeates every facet of educational behavior and performance (Schunk, Pintrich, & Meece, 2008). In terms of gender, research shows that female students are highly motivated in the academia context versus male students who have lower levels of motivation (Sax, 2008; Sheard, 2009). Student motivation in higher education is dependent on the choice that each learner will make (Pedescleaux, 2010).

At UOG, Leon Guerrero stated regarding the lack of motivation of CHamoru males, "I've observed those who really want to succeed despite their challenges and make it through their first semester and those who give up either because of their challenges and/or lack of motivation. With the non-traditional mature CHamoru males, their motivations and attitudes are more positive than some of the younger Chamoru males" (A. Leon Guerrero, personal communication, May 2, 2019).

The theory of perceived self-efficacy is defined "as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (Bandura, 1994, p. 1). A student's attitude of successfully achieving and obtaining a college degree is dependent on his level of self-efficacy (Conner, Skidmore, & Aagaard, 2012). On Guam, the once optimistic attitude that students had toward education has slowly dematerialized (Hendricks, 1990).

Methodology

The contributors were selected using snowball sampling as the strategy to determine the sample of this study. The researcher worked closely with the Office of Institutional Effectiveness (OIE), UOG, to obtain a list of prospective contributors. Further, the researcher obtained the ten contributors through OIE, and asked other contributors for referrals until the contributor list was completed.

The study employed a qualitative approach using a collective case study of 10 CHamoru males (18 years old and older) who had attended UOG for at least one semester between spring 2009 thru fall 2018, but did not re-enroll for the spring 2019 semester. The use of a demographic survey and in-depth interviews were used to collect data.

Participation was voluntary. The contributors could withdraw from the interview and study at any time during the interview without negative consequences. Further, the contributor could decline to answer the survey or any questions that make the contributor uncomfortable. The risks associated with this study included retrieval of personal memories or conflict, time, loss, and physical or emotional fatigue. The researcher provided a referral listing of Guam Mental Health providers to contributors to help minimize any risk.

Ethical considerations in qualitative research are critical because, to some degree, the validity and reliability of a research study is dependent upon the ethical standards of the researcher (Merriam, 2002). In the data collection and throughout the research process, the identities of the contributors were kept private (Creswell, 2007). Thus, the researcher did not identify the contributors by name in any reports using information obtained from interviews, and that the confidentiality of a participant in this study remained secure. The researcher assigned all 10 contributors a pseudonym to keep the identities of the contributors confidential and all demographic information was presented as aggregated information. Any identifying markers such as place of current employment were masked to further decrease the probability of identity. To further ensure privacy and confidentiality of the data, the researcher kept all transcripts and observational field notes gathered from the data collection and interview processes in a secured filing cabinet.

The data for this research study were collected in two segments. In the first segment, a demographic survey was completed by the contributors. In the second segment, data were collected by asking 16 interview questions of each of the contributors and recording their responses. A general overview of the demographic characteristics of the 10 contributors is provided. Next, the findings of the face-to-face interviews with the study's contributors are presented. The findings were gathered and organized from the analysis of the transcriptions of the 10 recorded interviews and from research field notes taken during the interview process. The researcher utilized open coding and selective coding to identify emerging themes in the transcriptions and designate categories to these themes.

The contributors in this research study were 10 CHamoru male students who attended the University of Guam between the years 2009-2018, and the age ranged between 19 and 35 years. At the time of stop out from UOG, five contributors were in good academic standing, four on academic probation, and one on academic dismissal. Data concerning college attendance and completion of male siblings showed that only one contributor had at least one male sibling start and complete a college degree program. Further, seven contributors highlighted that their male siblings, either older or younger, are not currently enrolled nor do they plan to attend a college path. The other two contributors reported that they did not have any male siblings.

Contributors to the study were nervous and somewhat anxious, but at the same time willing to participate in the interviews and share their responses. During the interviews, they expressed their individual perspectives with all

seriousness, and with very little to no emotion. The contributors were assigned a pseudonym to help reveal his experiences in a more personal way. The following pseudonyms were assigned to the contributors: Hurao, Tano', Miget, Pedro, Puti'on, Quipuha, Maga'låhi, Anghet, Taga', and Matå'pang. Throughout this report, these pseudonyms will be used as their responses are uncovered and themes emerged. A general review of the themes from the interviews with the 10 CHamoru male contributors is provided.

Findings

Hurdles Impacting the Achievement Gap

The interviews generated 155 coded responses addressing Research Question #1: What are the hurdles influencing the achievement gap of the CHamoru male student population at the University of Guam? The collected data emerged in two theme categories: (a) financial constraints, (b) lack of self-motivation, and (c) social distractions. The pertinent findings on the contributors ' financial constraints as a hurdle influencing the achievement gap of CHamoru males comprised 78 coded responses. The contributors disclosed the theme of financial constraints most often. Additionally, the data generated 29 coded responses for lack of self- motivation. For social distractions, 48 coded responses were reported.

Attitudes of CHamoru Men Toward Higher Education

The interviews generated 53 coded responses pertinent to addressing Research Question #2: What are the attitudes of CHamoru men toward seeking a higher education? Three principle themes surfaced for Research Question #2 from the coded contributors ' responses: (a) positive outlook, (b) perspectives on success, and (c) words of encouragement. The applicable findings of the theme of positive attitude toward higher education comprised of 23 coded responses. For the individual perspectives on what success means, 9 coded responses were noted. The findings for the words of encouragement theme consisted of 21 coded responses.

Support of CHamoru Male Students

The interviews generated 55 coded responses pertinent to addressing Research Question #3: What effective interventions and programs can UOG implement to support CHamoru male students to persist and complete a college degree program? Two fundamental themes emerged for Research Question #3 from the coded participant's responses: (a) financial aid and (b) support programs. The relevant findings to the participant's response related to financial aid consisted of 35 coded responses. For the replies on the supporting programs theme, 20 coded responses were identified.

Discussion and Implications for Practice

The study explored the achievement gaps of CHamoru male students at the University of Guam. The focal point of the research study was to gain a better understanding of the social, educational, and psychological factors that impacted their achievement gap. The study was conducted in two phases: a survey and an individual, face-to-face, in-depth interview. The two components were used to collect data for this research study. Creswell (1998) discussed that open coding is the act of discovering emergent themes, allowing the researcher to form categories of information based on contributors' responses. Thus, the data collected during the interview process was analyzed through open, axial, and selective coding (Thorne, 2000). Insights were derived from the contributors' responses to the survey and interview questions. Finally, the researcher provides the connection of the literature and collected data, implications for practice as well as present general recommendations.

An analysis of the study's findings revealed the following:

1. In the demographic survey, 100% of the contributors felt that higher education was important to them. At the same time, all the contributors said that their respective families expected them to pursue higher education. On Guam, familial support in any endeavor, including the pursuit of higher education, runs

deep and strong. During the interviews, several contributors highlighted that their parents, grandparents, and other loved ones greatly supported their educational endeavors.

2. Significant responses from four contributors revealed that obligations to family, relatives, and extended relatives made finishing their college degree programs a challenge. On the other hand, six contributors said that commitments to family were in no way a threat to their finishing their degrees.
3. The demographic survey noted that 70% of the contributors highlighted that their high school education prepared them for a college degree for program. On the other hand, 30% either disagreed or strongly disagreed that their high school education did not prepare them for a college path.
4. The survey divulged that 100% of the contributors received support and encouragement for student achievement and college success from UOG faculty and staff. As far as student services and faculty interactions with students were concerned, the demographic survey revealed that 80% were satisfied, and on the other hand, 20% were not satisfied.
5. Based on the demographic survey, 70% of the contributors recognized and reported that outside distractions such as clubbing, bars, and parties hindered and interfered with their completing a degree, whereas 30% of the contributors said that distractions were not a problem to seeking a college degree.
6. One of the factors that impacted the educational achievement gap of CHamoru males at the college level proved to be financial constraints. Four contributors reported that they were on the *Free Application for Student Aid (FAFSA)* to help fund their higher education. Interestingly, the demographic survey reported that 50% of the contributors responded that due to financial problems, they needed to seek employment rather than continue with their higher education. For instance, one contributor said that was a major reason why he did not finish his degree program at UOG and that he feared being in debt with student loans. One the other hand, 50% mentioned that financial setbacks were not an issue for them continuing with their education at UOG. Several contributors expressed that family members such parents, grandparents paid for their college education while they attended UOG. Also, two contributors highlighted that the G.I. bill paid their tuitions and other related expenses.
7. The survey disclosed that 90% of the contributors preferred to earn a college degree than to join military service. For instance, one contributor reported that although he comes from a family with military background, greater incentive to enroll in school was of utmost importance.
8. The personal interviews revealed that 100% of the CHamoru male contributors showed a positive attitude toward obtaining a college degree. Several contributors saw the personal benefits that would result because of a higher education. For instance, one contributor said that he enjoyed the educational experience that he received at UOG. Further, the positive attitude was reflected in the contributors' responses that they would one day return to UOG. One contributor, who initially said all he wanted to do was have fun in life and play games, had a change in attitude when he mentioned that one day, .he would return to college to complete his degree.
9. During the in-depth interviews, the 10 contributors expressed their personal views on the meaning of success. At the same time, 100% of the contributors felt that holding a college degree is in some respects beneficial, the attainment of a degree is not the only way to success.
10. Of interest to note, the contributors offered words of encouragement to both the present and future CHamoru male students aspiring a college degree. These words of encouragement reflected their positive attitude toward a higher education. For instance, one contributor urged, "just do it. Get that education" (Matå'pang, p. 5). Another contributor encouraged to "make the most of it" (Hurao, p. 5).
11. Responses from the contributors highlighted two important ways in which UOG can help support CHamoru male students. One way is through financial aid such as scholarships and grants aimed specifically to help finance the higher education of Pacific Islanders. Another aspect that UOG can do to aid CHamoru male students is by providing good customer service to students. For instance, one contributor mentioned that an office gave him the runaround and that he was frustrated with the system.

Discussion of Findings

In this research study, the phenomenon of the factors related to the achievement gap of CHamoru male students at UOG was approached using three disciplines: sociology, education, and psychology. Taking this three-framework step approach not only may add to the first-year college retention and diversity literature but also may begin to

develop a wide understanding of what is needed to help close the achievement gap affecting the overall college success of present and future CHamoru male students at the college level.

In the literature, throughout Guam's history, CHamoru males played a huge part in military service through their participation and enlistments (Ballendorf, 1997; Untalan 2016; Viernes, 2010). Military service was a vocation of choice for many CHamoru males on the island of Guam (Untalan, 2016). Interestingly, however, according to the data generated from the demographic survey and the interviews, 90% of 21st century American CHamoru male contributors for this study preferred the college path versus enlistment into military service. For example, one Contributor admitted, "it's more pressure going to college just because of what my family was expecting" (Quipuha, p. 3). Matå'pang acknowledged, "I never really thought about joining the military. I thought about joining college" (Matå'pang, p. 4).

The concept of masculinity stressed the idea that the display of masculine traits and behavior by men is opposed to educational accomplishment and a display of feminine behaviors (Kehler & Greig, 2005). Further, some men feel that elimination of educational pursuits is a manifestation of their manhood (Kimmel & Sommers, 2013). Nevertheless, as noted in the contributors' responses, several contributors said they had plans to return to UOG to complete their degree programs. For example, one contributor related, "Yes, I would go back. I do think higher education is important. Certain jobs require a diploma but yes, I would go back" (Tano, p. 2). In addition, the 10 contributors extended and offered words of inspiration to present and future generations of CHamoru male students pursuing or planning on attending UOG. Maga'låhi put it this way, "stay on top of your work. Don't miss classes and you ever feel overburden, I guess, seek help" (Maga'låhi, p. 4). Tano' further encouraged, "don't give up…there's that sense of achievement at the end" (Tano', p. 4).

The educational framework within the literature review showed that according to a US Department of Education publication a great number of males drop out of college due to financial reasons (Ross, Kena, Rathbun, KewalRamani, Zhang, Kristapovich, & Manning, 2012). Yet, the data generated from the demographic survey showed that 50% of CHamoru male contributors reported that they had some sort of financial support to attend college, whereas 50% reported that they lacked the financial means to continue their higher education. For one contributor in particular, funding for a higher education was a challenge in his case. He said, "it became very difficult to balance full-time job and also paying for school. I did qualify for federal assistance loans but at the same time, I don't feel too comfortable acquiring so much debt even with that assistance. It does get scary" (Pedro, p. 1). Taga' acknowledged, "I have FAFSA right now so it doesn't cover everything so that's like an extra bill for monthly expenses" (Taga', p.2).

In the literature, college male students continue to struggle in academia (Marrs, 2016). In the United States, notable disparities persisted in college readiness and enrollment (Nagaoka, Roderick, & Coca, 2009). On Guam, the Guam Public School System has used the ACT Aspire to track students' progress toward college readiness. In the data generated from the demographic survey, seven contributors averaged an A or B and the other three contributors averaged C or D in their high school performances. As far as college preparation was concerned the contributors were divided on the preparation for college they received in high school. 30% of the contributors reported that their high school education did not prepare them for a college degree program; whereas the other 70% contended that their high school had prepared them to purse higher education. The prediction of freshmen to sophomore student retention at UOG between Fall 2006 and Spring 2008 semesters showed that Guam-based CHamoru freshmen male students are at a very high risk "for stopping out and/or losing academic good standing" (Smith, 2008, p. 1). The theme lack of self-motivation was identified as one of the three categories addressing Research Question #1 on the hurdles influencing the achievement gap of the CHamoru male student population at the University of Guam. Responses from the in-depth interviews highlighted that CHamoru male students were not driven in the college environment citing exhaustion because of concurrently working and going to school at the same time. Also, a few of contributors divulged that having fun as a young man contributed to their lack of motivation to move forward with their college aspirations. One contributor admitted that, "video games, cell phone, girls, just partying…those are my distractions, at least" (Puti'on, p.1).

In the literature, motivation is described as, "activation to action. Level of motivation is reflected in choice of courses of action, and in the intensity and persistence of effort" (Bandura, 1994, p. 2). In academia, motivation is vital for every student to succeed. Additionally, motivation pervades every dimension of educational behavior and production (Schunk, Pintrich, & Meece, 2008). Pedescleaux (2010) asserted that student motivation in higher education is contingent on the choice that each student makes. Thus, for this study several of the CHamoru male Contributors' motivation was based on their individual choice and decision not to complete their degrees. In support of Research Question #2, in general, the contributors to this study exhibited a positive attitude toward pursing a higher education. Overwhelmingly, contributors cited many personal benefits that can come by pursuing and obtaining a college degree. One contributor said that a college degree is a "very important factor…if you want to be successful. A degree would achieve that goal…" (Puti'on, p. 3). Additionally, their positive attitude toward a higher education was indicated in their determination to one day to return to UOG to complete their degrees. One contributor said, "yeah, definitely I want to go back…I feel that I've waited long enough" (Anghet, p. 3). Further, in the data generated from the demographic survey, the 10 contributors said family expectations were high to attend college. Responses from the interviewees established familial support and encouragement as a significant factor to their positive attitude toward seeking and completing higher education. One contributor acknowledged that "I do have a good support system from my family…they are very encouraging to me to go to college and they still encourage me to go back" (Tano, p. 3).

From the psychology framework, the concept of perceived self-efficacy is defined as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (Bandura, 1994, p. 1). Conner, Skidmore, and Aagaard (2012) contended that a student's attitude of achievement and completing a degree program is conditional on his high level of self-efficacy. Hence, the contributors' responses from the interviews indicated that CHamoru male students, although they did not complete a degree, showed a high level of self-efficacy toward higher education, highlighted in their desire to return to UOG to complete their respective degrees.

The contributors shared their perspectives on what success meant during the interviews. A contributor remarked that success means being able to, "provide for yourself and your family…I think that's the ultimate goal you want to live a good life" (Hurao, p. 3). Significant contributor responses stipulated that, while holding a college degree is helpful, it is not the only way to success. One contributor said that having a degree is, "a good thing. It doesn't necessarily translate to success and that is part of the reason that people either become entrepreneurs or fined a trade or craft that paid $20 an hour and they're fine and happy with that" (Hurao, p.3). Miget acknowledged, "I had to do it my way and that meant not going to school and putting all my time into the arts and, so yeah, that's my own pathway to success" (Miget, p. 5).

Although the published studies in the literature review did not indicate any support programs geared to aiding CHamoru males' achievements in academia, the contributors' significant responses from the demographic survey and interviews were noted supporting Research Question #3. This is related to the types of effective interventions and programs UOG can implement to support CHamoru male students to persist and complete a college degree program. Eight contributors were pleased with the student services rendered at UOG, whereas two were not satisfied. Although the majority of contributors were pleased with some of the services and degree programs UOG had to offer, contributors' responses showed that the institution can make improvements such as by promoting an awareness of the various types of student services available to UOG students, building support programs aimed at assisting Chamoru males, and providing customer service training for its staff. Further, based on the demographic characteristics, eight of the contributors felt that UOG provided a sense of belonging and reported feeling being encouraged to achieve and reach their potential in college by the institution's faculty and staff.

Recommendations

The findings revealed that the role of UOG is very important as CHamoru male students pursue college degrees at the institution. The significant themes that emerged from the findings on the hurdles impacting the achievement gap for CHamoru male students are financial constraints, distractions such as partying, and the lack of self-motivation. Therefore, UOG should focus on designing a more solid and stronger first year college success program

that will help CHamoru male students maintain their level of motivation and high levels of self-efficacy in the college landscape is recommended. Also, the first-year college success program should focus on teaching CHamoru male students on how to find a balance between work, school, and social life.

In addition, the findings of this research study have further implications related to the role that UOG plays in the success of CHamoru male students in academia. Institutional support is needed through the strong presence and positive interaction between academic advisers, counselors and students. Moreover, the training of faculty and staff in good customer service and relations is recommended.

Furthermore, significant responses showed that CHamoru male students were very interested in returning to UOG to complete a college degree program. Therefore, outreach programs geared toward inviting back CHamoru male students by means of public presentations, displays, forums, or other marketing events are recommended.

In addition, the findings of the research study revealed that a few contributors had financial difficulty to pay for their college education. Therefore, financial aid such as scholarships and grants aimed at providing good financial assistance to the CHamoru male student population is recommended. Finally, the effectiveness and efficiency of the financial aid program process is a strong recommendation for UOG to improve.

In discussing the issues surrounding the achievement gaps of Chamoru males at UOG, the creation of effective and evidence-based interventions, mentorship programs, and settings that can better support the Chamoru male population to maintain high retention rates for the respective group. For example, UOG could design a program that is geared towards assisting CHamoru males with their educational achievements similar to that of City of New York Black Male Initiative (CUNY BMI). CUNY BMI's "vision is to create model projects throughout the University that are intended to provide additional layers of academic and social support for students from populations that are severely underrepresented in higher education, particularly African, African American/Black, Caribbean and Latino/Hispanic males" (Best, 2018). The CUNY BMI model has proven effective in larger universities throughout the United States. UOG's proposed program could be named *Progråman Sinaonao Lalåhen CHamoru para ge'hilo na edukasion: The CHamoru Male Initiative Within Higher Education.*

Finally, encouraging advocates for this group such as the establishment of a student organization for CHamoru males will be beneficial. Currently, there is no CHamoru student club or organization at UOG aimed to support CHamoru males' educational endeavors.

Conclusion

The achievement gap among male students in the higher education environment across the United States is on the increase--males attending UOG on Guam are no exception. Statistics from UOG show that CHamoru male students struggle to complete a college degree. Through this research study, the contributors shared their experiences in great detail that centered on the hurdles that have affected their student achievement and overall success at UOG. These stories presented a thick and rich description of the difficulties and issues faced by the CHamoru student population at UOG that impeded their educational endeavors such as financial constraints, the distractions of social life, and lack of motivation. Overall, the contributors displayed a positive attitude toward seeking a college degree and expressed their desires to eventually return to UOG. To help close the achievement gap particularly of the CHamoru male population, UOG must be diligent in their persistence and retention efforts by examining 21st century strategies, methods, and practices in the higher learning landscape.

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OPERATIONALIZING SERVICE LEARNING AT THE UNIVERSITY OF GUAM

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The concept of service learning in higher education is not new and is often intertwined with such concepts as community service, internships, and practical field experience. Whatever term is used, ultimately it represents the institution's efforts to connect students with real life experience within the community, helping them translate what they are learning in the classroom to real life, practical application with a strong emphasis on service.

Learning by doing has proved essential, and the programs and departments throughout the University of Guam have endeavored to respond to this overarching goal. For the purpose of the discussion presented here, "service learning" assumes the context of a teaching method that promotes student learning through active participation in *meaningful, co-designed service experiences* in the community, particularly and substantively related to course content. In this chapter we present research from the University of Guam on collective efforts to incorporate service learning across the curriculum. Programs assessed current efforts and made plans to strengthen and expand those efforts.

Twenty-six service programs were examined in this research and approximately half of the programs (12) reported that service learning requirements were embedded into course work, while a third (9) required all majors to enroll in an internship program. Less than a quarter of the programs (4) used student clubs to plan different community outreach activities related to the academic disciplines in some form. All programs that required an internship reported that it was used as a form of assessment or evaluation from the field supervisor. Several programs (8) with practicum-type experiences required a reflective essay from the students upon completion of the experience.

In short, the study found that student service learning, in all of its forms and iterations, is essential for the student experience. Through structured activities, students enhance their understanding of course content, develop a sense of civic responsibility, self-awareness and commitment to the community. At the same time, it is also a means for the community to engage with the university in mutually beneficial activity. Bridging the classroom curriculum to the application in the community is essential for any discipline to stay current and relevant.

Keywords: service learning, community engagement, practicum, student organizations

Introduction

The Association of American Colleges and Universities (AACU; 2010)) has identified service learning as one of the high impact practices (HIPs) for student success and engagement in their respective fields. High impact practices (HIP) are strategies that enhance the student learning experience beyond the classroom. HIP strategies include moving theory to action, such as operationalizing classroom learning to field application. HIP strategies also include evaluation and analysis opportunities for the student and faculty to assess comprehension. Over a five-year period starting in 2012, the University of Guam (UOG) engaged in a strategic plan called *Good to Great (2012-2017),* with an overall goal to identify and integrate high impact practices and processes that contribute to student completion and success. One important and noteworthy action strategy identified in this assessment was specific to student experience and the need to prepare them for the workforce and for civic engagement. It highlighted the need for all programs to find creative ways to enhance community engagement and service learning as part of the curriculum. Specifically, the plan stated: "The student experience at UOG will be expanded by providing opportunities [to] enhance[e] service and community engagement activities" (University of Guam, 2014, p.9).

Benefits of Service Learning

Educational institutions, and universities in particular, have long identified the benefits of service-learning experience in the community. Research concludes that service-learning contributes to both the cognitive and affective development of college students, as well as to an understanding of how learning is enhanced through volunteer activities (Astin et al., 2000). Specific implementation of the experience, however, has varied across colleges, disciplines, and programs. Community experience has been well integrated into many courses of study, while others do not encourage or credit the experience. The complexity in and between university departments, disciplines, and research areas are no less compound than the communities where they engage (Gavazzi 2018); thus designing service learning to bridge classroom learning to practice, or applying a concept to a professional environment, adds to the complex environment. Immersive experiences are fundamental for creating competent, insightful, and effective professionals across the land-grant university system (Scheer et al., 2006; Rogers et al., 2001).

An effective service-learning experience can bridge the knowledge from the classroom to practice in the community, ultimately building competent professionals engaged with and across the community. Partnered with faculty and community practices professionals, the student learning experience can identify issues, develop solutions, and implement practices that provide future professionals an engaged service learning experience (Rogers et al., 2001; Scheer et al., 2006)

Professional Development for Students

From the community perspective, agencies, organizations, and individuals engaged in varying professions constitute the means where students can engage, discover, and reflect on the chosen profession. Through most experiences, faculty have served as the conduit to agencies and organizations. One example of the university-community interface has community-based research. Community-based research (CBR) links community members with research faculty in investigations that create a deeper understanding of specific issues important to communities (Gavazzi & Gee 2019; Gavazzi 2018). Increasingly, CBR is being carried out through community-university partnerships in which the research work of undergraduate and graduate students is integrated with the research needs of community organizations, providing much-needed intellectual resources to community groups while giving students invaluable experience in applying their academic skills. Service-learning opportunities within the community-based research arena can engage communities, agencies, organizations, faculty, and students together in applied research, formative program design, audience comprehension, and diffusion of information. Co-designed by participating entities, community-based research is one example to implement student learning experiences and have the ability to be scaled to the appropriate level of enrollment.

“Learning by doing” has an established research base across the learner spectrum. In the formal learning environment (Fannin et al., 2007), “hands on” learning to bridge classroom to the community has been anchored in experiences such as internship and practicum. Through structured experiences at established sites, students demonstrate learned skills under the supervision of a professional in the field. Through structured activities, students enhance their understanding of course content, as well as develop commitment to the community, through professional practice (Horrisberger & Crawford 2007). Theoretically, one long-term impact is civic responsibility, as students begin to understand their role in the community (Camino, 2005).

Co-constructing Knowledge

For the purpose of the discussion presented in this article, “service learning” assumes the context of a teaching method that promotes student learning through active participation in *meaningful, co-designed service experiences* in the community, particularly and substantively related to course content. Eyler and Giles (1999) outlined the student’s experience in the community will make the classroom coursework more relevant and meaningful. For the high impact practice of service learning, the community professional, university faculty, and student learner “co-develop” the experience together within a framework that meets all expectations. Co-

development of the experience between all active parties can identify, apply, and measure learning acquired through classroom study to the field application. In the co-development process, integrating community engagement with *structured activities* where students address human and community needs, the student experiences meaningful work as a professional within the discipline. At a high observation level, the desired outcome from service learning is workforce preparedness, civic responsibility, and community engagement. At close perspective, the intricate details of each aspect are enhanced by activities within the service-learning experience. Zlotkowski (2010) noted that effective learning incorporates all parties, with no one entity more important than another, as each have viable contributions. Another aspect of student service learning as a high impact practice, is the personal reflection requirement. The personal reflection statement acts as the summative evaluation construct. The student constructs the reflective statement to identify the intricacies of discipline preparation, civic responsibility, and community engagement. From daily experiences that explicitly bridge classroom learning to practical application, the personal reflection component summarizes the students' comprehension of each part as it applies in the community.

Defining Service

Across existing research, terminology around this work has been intertwined: community service, internship, practical experience - to describe student learning outside the classroom in their discipline or field. University of Guam faculty and administration embraced the concept of service learning to explore, engage, enhance, and facilitate its implementation across the university experience. In Brownwell and Swaner (2010), Jacoby (1996) described service learning as "a form of experiential education in which students engage in activities that address human and community needs together with structure opportunities intentionally designed to promote student learning and development."

Definitions of current community experience were anchored in the Student Service Learning Guidebook (UOG, 2019) to facilitate strategic discussions.

- Volunteerism: Volunteerism is typically used to describe people, who of their own free will and without pay, perform service, or do work for a group or individual. Volunteerism is self-directed and may or may not meet the needs of the agency, but usually defined by the individual within the scope of present skills and resources. Volunteerism can be done on a regular or sporadic basis with community groups, faith-based organizations, schools, or other social service organizations.
- Community Service: Strictly defined community service simply means organized volunteering which meets the needs of the community. The service benefits the community agency or individuals in the community and is most often done through non-profit organizations, schools, and public agencies. Often, community service has been associated with court ordered and emanates a negative connotation towards participating in community service.
- Internship/Practicum: An internship or practicum experience has primarily been organized as a capstone experience in which the student implements material covered from a series of classes into the field. The experience normally requires no weekly reflection of the student yet requires a culminating paper or project that is activity or research specific. The project or paper rarely incorporates personal views or perspectives of experiences that relate to classroom learning.
- Field Work: Fieldwork can also reflect a capstone experience in which a supervised clinical experience connected to a certificate or credential program, such as nursing, is required.

Overview of the Implementation Process

Faculty from each department at the University of Guam were tasked with reviewing the current state of opportunities for student service learning based on the needs, requirements, accreditation, and other factors that influenced the discipline. For self-review and discussion, faculty were tasked to determine how student service learning could be integrated. The initiating team established a set of questions that would frame the assessment

instrument, with the intention of reaching all 26 programs at the University of Guam. The assessment instrument was presented through two "town hall" type forums held during the annual Faculty Development Day in 2017 and 2019. The instrument was designed to collect information from each academic program around six areas of interest about their service-learning initiatives:

- Experience: what types of experiences or opportunities are provided to students that take them out of the classroom and into the community (community outreach, internship, practicum, another service-learning activity)?
- Association: what are the types of community or professional organizations affiliated with the activity?
- Type: is this categorized as Internship, Service Learning, Community Service, etc.?
- Assessment: how is the service-learning activity assessed?
- Ensure: how do you ensure that students participate? Is this required or optional?
- Timeframe: When in their academic careers do students experience the activity?

The guidebook outlined student service-learning goals, definitions of various engagement strategies, and scenarios for discussion. The initiating group of faculty and administrators volunteered to facilitate meetings with departments and divisions. Throughout the process, each division formulated discussion points differently, but ultimately, each division assessed how the discipline was engaged with the community, assessed student service learning by discipline, enrollment status differences, and outcomes desired.

Findings and Analysis

The assessment instrument was used in 26 programs at UOG and conducted both in person (35% of programs were conducted in person) as well as online (the remaining 65%). Data revealed that all programs reported activities that engage some form of service learning. Approximately half of the programs (12) reported that service-learning requirements were embedded into course work, while a third (nine) require all majors to enroll in an internship program. Less than a quarter of the programs (four) used student clubs to plan different community outreach activities related to the academic disciplines in some form. All programs that required an internship report that was used as a form of assessment or evaluation from the field supervisor. Several programs (eight) with practicum-type experiences required a reflective essay from the students upon completion of the experience.

Varied Definitions of Service Learning

The assessment instrument revealed that all 26 academic programs at the University of Guam have a component within the curriculum that falls under the broad category of community engagement with service-learning goals. However, upon closer examination of the data, comprehension of "service learning" by both faculty and students varied greatly. As an example, some programs reported incorporation into course content about service within their professions, which teaches students both the value of the discipline and contribution it makes to the betterment of the community. Yet, other programs provide explicit, prescriptive practical opportunities for students to engage in the community. These programs identified specific groups, such as school settings, social service providers, businesses, law offices, farms, village councils, and neighborhood youth groups, as an avenue to engage in activities designed to benefit stakeholders. While both examples have similar outcome goals to provide valuable opportunities for students, the design and implementation differed from program to program.

Program Strengths

One of the identified strengths of the academic programs at the University of Guam is that all degree-granting programs are engaged with individuals, groups, and agencies for positive community development on Guam and throughout the Pacific Asia region. Students enrolled in established programs learn early in the curriculum that the chosen major has practical and valuable contributions to the region. One example would be in the Social Work Program. Students in the program partnered up with the Women's Organization in Chuuk to facilitate empowerment trainings for teens/young women in the community. In addition, they were able to mobilize a

slipper (zori) and book drive to provide children in Chuuk with slippers (zori) and books. In a music program, some examples would be partnering with churches and assisting with sound and setting up equipment. Other examples in Music include assisting with performances such as collecting tickets, set-up, escorting audience and stage set-up. As an integrated and continued messaging throughout each curriculum, students embrace the value of the chosen discipline as purposeful and meaningful – not simply as a way to get a paycheck.

Any "community outreach" efforts identified by programs were often reported as falling under the general category of service learning. According to one program:

> The [Student] Club under the supervision of a Faculty advisor coordinates high school outreach activities every semester. This involves presentation by a Faculty member covering issues such as: why study [program x], what can you do with a degree in [program x], overview of our program, and why students should consider studying [program x] at UOG. This is then followed by experimental demonstrations set up by our students (usually 4 experiments) with the objective of raising the interest level in [the program] among the high school students. Students ask questions related to the specific experiments or general questions about our program or about UOG during the entire event.

The reflective piece generated by the student about the experience is noted as an integral component to creating a high impact practice. Of the 26 programs, 19 programs (73%) reported service learning as part of the curriculum, but only seven programs (27%) clearly stated a formal reflective element requirement. Reflective pieces varied depending on the program. The reflective component was reported as a variety of products. Reflective pieces were operationalized as essays by the students at the midpoint or completion of the service-learning activity. Other programs reported the reflection is continuous and captured through daily or weekly journals. At times, the reflection element is in the form of an oral presentation given by the student in class or as a small group oral reflection. With faculty member input, the reflection provided an opportunity for the student to think deeply about the experience and share perceptions.

Most programs (23 out of 26) that have formal service learning or other types of community engagement activities, like internships and practicums, anchor these opportunities in the final two years of the degree programs. A small number of programs (four) introduced opportunities early in the curriculum, prior to junior year status. One of the strengths identified in all programs at UOG was the close interaction with both government (public) and non-governmental associations (private, non-profit, member, philanthropic, etc.) on Guam and throughout the region. These associations provide many opportunities for outreach in terms of service, research, and teaching opportunities for students and faculty. More than three-quarters (87%) of programs reported established relationships with organizations in the region. Thus, immediate access to these associations, agencies, and organizations ultimately help to define opportunities and focus of the service-learning activities within each program.

Two examples of programs that provided these opportunities to students as internships or practicums include the following exemplars in engineering and psychology.

Internships: Engineering Program

Student service learning comes from their engagement with community and engineering professionals via student organizations like chapter of Society of American Military Engineers (SAME) and UOG Green Army. They connect with local high school students and give presentations during annual "Engineering Week" activities on Island. SAME students connect with locals via community service including activities such as beach cleaning, renovating bus stops, cemeteries for war veterans, creating awareness on recycling of waste though community-based meetings etc. SAME student members oversee "Annual Bridge Competition" on Island of Guam held at UOG. They test their technical knowledge and management skills while conducting this event. They conduct training workshops and transfer engineering skills to participating high schools. Faculty and Dean meet the local

professional agencies from time to time to discuss on research opportunities and collaborating for summer internships for our students. Students get hired for paid summer internships. They receive hands-on experience and training under direct supervision of professional and experienced engineers. This experience helps them identify critical demands of engineering skills needed on Island. Students get involved with research conducted by faculties and they get hands-on experience on current engineering issues… through paid research assistantships.

Practicum: Psychology Program

The Clinical and Community Psychology Practicum places students in a mental health or social service setting under the supervision of an approved practicum supervisor. Through their practicum placement, students will have the opportunity to become familiar with the breadth of psychological and social service programs available in Guam, to apply knowledge and skills gained in course work to professional work with mental health and social service clients, and to learn about the issues and concerns faced by professionals providing mental health and social services in a multicultural Pacific Island community. Students will also attend a weekly seminar where they will learn applied clinical skills and discuss professional issues that arise out of their practicum work. The practicum is valuable both for students wishing to gain employable skills and for those desiring experience in psychological practice prior to attending graduate school.

- Students are required to spend approximately eight hours per week in a practicum setting which has been approved by the practicum coordinator/course instructor. A minimum of 100 practicum hours should be completed by the end of the semester.
- Students should maintain a practicum journal based on their experiences in their setting and submit entries to the coordinator/course instructor at midterm and again at the end of the semester.
- Students are required to attend a three-hour seminar each week. In the seminar, students will discuss assigned readings on clinical practice and professional issues, participate in a variety of clinical skills training exercises, and receive group supervision on their practicum work.

Future Actions and Engagement

As higher education institutions continue to evolve their missions to facilitate learning, faculty and administrators must also evolve engagement with the communities they serve. The following are a few key actions that would assist in strengthening the efforts around service-learning initiatives and its role in pedagogic approaches across the disciplines.

- Continued dialogue with faculty to optimize student service learning at all enrollment levels is necessary on an annual schedule, not just when an accreditation visit is scheduled.
- Quantifying the student experience, from each discipline perspective, is the next metric for implementation. Defining impact to the student experience will require long term or extended cumulative evaluation, such as operationalizing measures of satisfaction, learning, and application. For these long-term studies, a baseline for students and faculty at UOG must be established. Further evaluation would include perspectives of students who have engaged in their profession at different stages (three, five, and ten years post-graduation).
- In addition, measures of civic engagement at all levels (micro-, meso-, and macro- levels) need to be developed to extend across, yet include, all disciplines.
- The University should explore a formal policy about service learning to provide programs a framework. This particular research and facilitation effort demonstrated a wide degree of ‘understanding’ and practice on campus regarding service learning; thus, framework and policy to guide programs would bring the varied efforts into one unified whole.
- Finally, it would be helpful to have ongoing training for all programs and faculty about service learning to assist faculty through development and quantify efforts for respective programs and disciplines.

Limitations

There are limitations to the application of these findings to other universities and colleges. While the assessment and incorporation of student service learning activities into departments at UOG went relatively quickly, it was the result of a long term, multi-stage strategic process initiated several years prior to the assessment process. Another limitation to use of student service learning experiences is criteria from various professional and academic credentialing bodies. University departments and colleges have a variety of accrediting bodies to ensure quality educational experiences, thus immediate changes or re-direction is not always possible within the accreditation criteria.

Conclusion

Student service learning, in all forms and iterations, is essential for the student experience. Through structured activities, students enhance their understanding of course content, develop a sense of civic responsibility, self-awareness and commitment to the community at the same time, it is also a means for the community to engage with the university in mutually beneficial activity. Bridging the classroom curriculum to the application in the community is essential for any discipline to stay current and relevant. The "bridge" has many positive effects on student learning. Students engaged in service learning have higher grade point average, greater retention, greater likelihood of completion, more interaction with faculty and high level of satisfaction with learning experiences (Brail 2016; Kuh 2008). Student service learning is engagement with the profession that provides a personal perspective of learning that transcends an engaged professional.

As universities continually evolve in the 21st century as engaged institutions, the learning environment that engages the student, faculty, and community will led to the success of the institution. An environment that allows the student to learn through connection to the community in a constructive, reflective means will ensure success for all parts of the higher education institution. Service-learning in the community, with the community, and through the community will contribute to University of Guam's engaged graduates.

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FIRST YEAR STUDENT ENGAGEMENT AS A PREDICTOR OF STUDENT SUCCESS: A PREDICTIVE MODEL

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The purpose of this study was to examine student engagement indicators from the National Survey of Student Engagement (NSSE) to predict student retention, for first time, first-year students at the University of Guam. Prior studies have shown the importance of student engagement in both student retention and student development. This study builds on existing literature by exploring the impact of student engagement on student success at the University of Guam. Additionally, this study focuses on a population of at-risk students, many of whom are first-generation college, Pell eligible, and racial or ethnic minorities.

Data used for analysis were collected from the NSSE survey administered during the 2018 Spring semester. The dataset was filtered to select first-time, first-year students. The most basic finding was that one of the ten engagement indicators, Supportive Environment, is a predictor of a student's consideration of leaving the University.

According to the results from this study, students were 3.4 % less likely to consider leaving the University for every one-point increase in the Supportive Environment engagement indicator scale. Based on these findings, it is recommended that the University apportion resources, provide training, and endorse the development of initiatives which aim to foster a supportive environment for first-year students.

Keywords: student engagement, first year students, supportive environment

Introduction

Over the past two decades, college completion has gained attention in the public and private sectors as a key determinant of institutional success. As the emphasis on completion in higher education from the public and private sectors increase, institutions continue to face challenges associated with student success, most notably retention and graduation. Since the 1980's, the amount of time required to complete a college degree has increased steadily (Bound, Lovenheim, & Turner, 2007). Additionally, institutions struggle to retain students, with 19% of students at 4-year, public, post-secondary institutions not returning for their second year in academic year 2018 (NCES, 2019). These challenges are even more significant for institutions enrolling high levels of low-income, first-generation college, and underprepared students.

The institution studied is the University of Guam (UOG), which is a public, 4-year, land-grant institution located on Guam. UOG is the largest land-grant institution in the Western Pacific region. UOG has a diverse population, with the largest ethnic population being Asian (54%). The second-largest ethnic population is Pacific Islander (41%). White, non-Hispanic students make up 2% of the entire population. The UOG population also includes a large percentage of first-generation college students and a large proportion of low-income students, with 47% of the population receiving Pell grant financial aid (IPEDS, 2019).

Pell eligibility, first-generation college status, and ethnicity are all factors that may contribute to additional challenges in attending and succeeding in post-secondary education. These background characteristics also increase the difficulty students face when transitioning from high school to UOG. One of the longstanding goals of UOG is to ensure that first-year students complete their first year and persist to sophomore-level classification. For the 2018 Fall cohort, the first-year retention rate was 76.8%. Since 2000, this retention rate is the second-best since the 2014 record year, in which the retention rate was 77%. Although the 2018 retention rate of 77% ranks high on UOG's record cohort retention rates, this figure falls below the national average of 81% for 4-year, public, post-secondary institutions (NCES, 2019). The long-term goal for UOG is to achieve first-year retention rates at the same level or higher as other 4-year public institutions.

Since UOG is an open-enrollment institution, the university is committed to admitting students from a wide range of backgrounds and with varying levels of preparation. For this reason, retention efforts must focus on factors within the control of the institution.

The purpose of this study is to examine the ability to predict a student's decision to consider leaving using the National Survey of Student Engagement (NSSE) engagement indicators at University of Guam. For this study, ten engagement indicators from the survey were used as independent variables to measure student engagement. In this study, the degree to which each engagement indicator correlated to the student's consideration of departure was tested. Furthermore, the study examined the possibility of using engagement indicators as predictors of student departure.

Literature Review

The purpose of this literature review is to thematically introduce the importance of student engagement and its relation to student retention. Student retention has captured the attention of many researchers and remains to serve as an indicator of student and institutional success. Traditionally, it was believed that pre-college factors such as demographics or college-preparedness were the leading factors to student retention. Over time, research findings have shown the importance of student engagement and the role of institutions in determining student retention. While research has proven the existence of a relationship between student engagement and student retention, further study to determine the predictive effects of student engagement may assist institutions in their role of improving student retention.

College Value

One of the key motivators driving students to attend college is the income level associated with the attainment of a college degree. According to the US Census Bureau, the average income for individuals over 25 years of age with a bachelor's degree was $65,482 (US Census, 2017). The median salary for adults with a high school diploma was $35,615 (US Census, 2017). The economic benefit of obtaining a bachelor's degree is nearly double when compared to only having a high school education. With increasing benefits resulting from earning a college degree, the desire to pursue higher education has followed suit. In 2017, over 33% of adults had a bachelor's degree or higher. In comparison, in the 1940s, this figure was less than 5% (US Census, 2017).

Retention Indicators

Retention rates are used by universities as a performance indicator which serves as a measure of student persistence and, conversely, attrition. This indicator examines the number of first-time, full-time, degree-seeking undergraduate students who return the following fall semester. Institutions receiving federal funding must report this measure annually to the National Center for Education Statistics (NCES) through the annual Integrated Post-secondary Education Data System (IPEDS) survey. According to NCES, the percentage of first-time, full-time, freshmen who started during the fall 2016 semester and returned for their second year of college at public institutions was 81% (NCES, 2019).

Another measure of student attrition is the 6-year graduation rate. This indicator measures the percentage of students who complete their degree programs within 150% of the typical time for completion (NCES, 2019). For bachelor's degrees, the preferred time for completion is four years, resulting in six years as the 150% standard for the graduation rate calculation. The average graduation rate at public institutions for degree completion of bachelor's degree-seeking students starting the fall 2011 semester was 60% (NCES, 2019).

Student Engagement

For decades, many studies have been conducted to investigate factors contributing to student attrition prior to graduating. While high school GPA or placement test scores have correlations with student departure, retention

studies have shown that non-cognitive factors also play a significant role in the decision for students to leave college before completing their degree (Pascarella & Terenzini, 2005; Tinto, 2005).

Vincent Tinto's *Theory of Student Departure* (1975), serves as a basis for many retention programs and initiatives. In this work, Tinto (1975) described that while a student's background (high-school experience, social status, etc.) was important, other factors such as expectations, motivation, and commitment to the institution also play a crucial role in attrition. Based on this theory, academic and social integration work in tandem to promote goals and institutional commitment. Tinto believed that goals and institutional commitment determined whether students stayed or decided to leave the institution and challenged the idea that student attrition was solely caused by students and their individual circumstances. Later, Tinto found that it was not only the individual, but the institution also played a crucial role in the voluntary departure of students (Tinto, 1986).

Building on prior research, Astin (1984) introduced the theory of involvement, which serves as a foundation for the importance of student engagement on student success. Astin's theory explains that the level of academic effort and student gains are related to the amount of student involvement, which may be academic, social, or cocurricular. Astin's theory of involvement shifted focused on the emphasis of traditional pedagogical approaches of teaching and subject matter towards student behavior and motivation.

More recent research has supported the idea that student engagement has a significant effect on academic outcomes. Kuh et al. (2008) found that while a student's pre-college background influenced first-year grades and persistence to the second year, the effect was weakened substantially when considering levels of student engagement. Additionally, the study found that when controlling for pre-college characteristics, student engagement significantly influenced first-year grades and persistence to the second year.

One commonly used instrument to measure student engagement was the College Student Experience Questionnaire. Developed by Robert Pace, the CSEQ measured "quality of effort" to detect activities that advanced student learning and personal development (Pace, 1990). Findings from this study indicated that as students spent more time and exerted more energy, significant academic gains, and improved college experiences resulted (Pace, 1990).

Methodology

Data used for analysis was obtained from the 2018 UOG NSSE survey, which was administered during the Spring 2018 semester. The NSSE survey is a web-based survey that measures participation in the classroom and activities outside the classroom that lead to student success. The questionnaire consists of 40 base questions, a demographic section, and a First-Year Experiences and Senior Transitions topical module with additional questions. The survey requires approximately 15 minutes to complete. Scores from the base questions are grouped into the following scales: higher-order learning, reflective and integrative learning, learning strategies, quantitative reasoning, collaborative learning, discussions with diverse others, student-faculty interactions, effective teaching practices, quality of interactions, and supportive environment. Each engagement indicator is scored on a 60-point scale.

All first-year and senior full-time students at UOG were invited to participate. The survey was disseminated to 1,268 first year and 701 senior students. Five hundred fifty-nine first year (44%) and 333 (48%) senior students completed the survey. As the focus of this study is first-year retention, only first-year responses were collected for analysis.

Study Design

This study is categorized as an ex-post-facto study due to the data collection having occurred prior to the design of the study. Also, the study is considered non-experimental since the subjects were not placed into separate treatment and control groups. Since this study involves observation of variables rather than manipulation found in

experimental designs, the design falls into the classification of cross-sectional research design (Field, 2018). Due to the use of quantifiable survey data, the research method can be classified as quantitative. One benefit of this quantitative research design is that it involves a structured survey instrument (NSSE) and is easily replicable.

A question on the NSSE First-Year Experiences and Senior Transitions topical module asking whether students have considered leaving the institution was used as the dependent variable. The following ten engagement indicator scale scores were used as the independent, or predictor variables in the study:

- *Higher-order learning* measures the level of which coursework requires complex skills beyond the memorization of facts.
- *Reflective and Integrative Learning* measures the level at which students connect with their coursework.
- *Learning Strategies* measures how well students enhance their learning by actively engaging in their coursework.
- *Quantitative Reasoning* measures the amount of opportunities students experience to develop the ability to reason quantitatively.
- *Collaborative Learning* measures the level of peer collaboration to solve problems or understand difficult course material.
- *Discussion with Diverse Others* measures the amount of opportunities students interact with and learn from others with different backgrounds.
- *Student-Faculty Interaction* measures the level of faculty engagement both inside and outside the classroom.
- *Effective Teaching Practices* measures the level in which teaching practices encourage student comprehension and learning.
- *Quality of Interactions* measures the level of interpersonal relationships with the campus community, which leads to increased student learning and success.
- *Supportive Environment* measures the level of services and activities institutions offer, which supports learning and development.

NSSE responses from the 2018 UOG survey administration were imported into IBM Statistics for Social Sciences (SPSS) Release 26 for analysis. For this study, descriptive statistics, as well as inferential statistics, were used for analysis. Descriptive statistics involve the organization and summarizing of data in a meaningful way to allow for simpler interpretation (Singleton & Straits, 2010). Frequencies, percentages, and means were calculated as descriptive statistics. Although descriptive statistics allow for the emergence of patterns, they describe the data and do not allow for any conclusions involving hypotheses to be made. To answer our research question, inferential statistics will be used to test our hypothesis. Inferential statistics are considered to be a more robust tool in analyzing data and allow for conclusions to be made based on available data (Field, 2018).

To determine which variables predict the outcome variable of consideration of leaving, binary logistic regression was chosen as the inferential statistical technique. Binary logistic regression was selected as the primary method for analysis for several reasons. First, the dependent variable in this study is binary, coded dichotomously as yes or no. For this reason, simple linear regression is not suitable for analysis. A crucial assumption of the linear model is that the outcome variable has a linear relationship with the predictor variables (Field, 2018). The outcome variable, consideration of leaving, is categorical and therefore violates the linear assumption. Second, binary logistic regression allows for the inclusion of two or more independent variables. In this study, a total of 10 independent variables or predictors were tested. Binary logistic regression was used to determine the impact of the predictor variables to predict the incidence in either of the outcome variables (considered leaving in the past year or did not consider leaving in the past year. A total of 193 students (valid cases) were included in the binary logistic regression model.

One consideration when applying logistic regression models is multicollinearity, which occurs when two or more predictor variables are highly correlated (Field, 2018). The presence of multicollinearity in regression models leads to large standard errors and unreliable inferences between predictor and outcome variables. To test for

multicollinearity between predictor variables in this study, the variance inflation factor (VIF) will be calculated for assessment. Generally, a VIF above 10 is an indication that multicollinearity may exist and is a cause for concern when applied in a logistic regression model (Bowerman & O'Connell, 1990; Myers, 1990).

Once the tests for multicollinearity were conducted, each of the ten predictor variables was tested individually using binary logistic regression to determine the effect that each indicator had on the odds of consideration of leaving the institution independently. Any predictor variables found to be statistically significant were then selected to be entered in the final binary logistic regression model that would involve the inclusion of multiple variables to be run together in the predictive model. Introducing multiple variables in the predictive model will more accurately estimate the effects on the outcome variable by controlling for the various predictor variables in the model. By excluding any variables not found to be statistically significant, the accuracy of the final predictive model would be improved.

Findings

In this section, the results of the study, which was to determine the relationship between NSSE student engagement indicators and the consideration of leaving, as well as the potential for using the engagement indicators as a predictor of a student's consideration of leaving, will be discussed. First, descriptive statistics will be presented. Second, the results from multicollinearity tests will be presented to ensure the accuracy and confidence of the data prior to logistic regression. Third, the results from the independent binary logistic regression will be presented to show the relationship between the individual student engagement indicators and the consideration of leaving. Lastly, the results of the predictive model will be presented.

First-year, Full-time, Respondent Attributes

Descriptive statistics for the study sample are provided below in Table 1. Respondents were predominately female (69%). The largest age group for survey respondents was 19 or younger (85%). Lastly, the largest ethnic group was Asian (58%), with the second-highest group being Native Hawaiian or Other Pacific Islander (35%). These figures reflect the overall University demographic profile.

Table 1. Frequency Distribution for First-Year, Full-Time, Respondent Demographics

	N	%
Gender		
Female	144	68.57
Male	66	31.43
Age		
19 or younger	178	84.76
20-23	10	4.76
24-29	4	1.90
30-39	1	0.48
Unknown	17	8.10
Ethnicity		
Asian	122	58.10
Black or African American	2	0.95
Native Hawaiian or Other Pacific Islander	74	35.24
White	4	1.90
Foreign or Nonresident alien	1	0.48
Unknown	7	3.33

Consideration of Leaving

The sample size of the study amounted to 210 respondents (See Table 2). However, of the 210 responses, 17 cases had missing data, resulting in a total of 193 valid cases. Missing cases were not included in the subsequent analyses. Based on valid data obtained in the survey, 64.8% did not consider leaving the institution in the past year, while 29.5% did consider leaving.

The percentage of students who considered leaving (29.5%) was slightly higher than the corresponding 2018 fall-cohort, stop-out rate of 23.2%. This higher figure was to be expected since more students may consider leaving without committing to leave.

Table 2. Frequency Distribution for Consideration of Leaving

		Frequency	%	Valid %	Cumulative %
Valid	Did not consider leaving	136	64.8	70.5	70.5
	Considered leaving	57	27.1	29.5	100.0
	Total	193	91.9	100.0	
Missing	System	17	8.1		
Total		210	100.0		

Table 3 reports the average scores of the NSSE student engagement indicators used as predictor variables in this study. For all engagement indicators, mean scores for students who considered leaving were lower than those who did not consider leaving. The lower mean scores of students who considered leaving indicate lower levels of student engagement when compared to scores of those who did not consider leaving. The lower mean scores were to be expected since prior research has shown that academic and social integration affect student departure (Tinto, 1975, 1993).

The most substantial difference in mean scores was for the Supportive Environment indicator. The difference in the Supportive Environment mean scores between those who considered leaving (M = 25.76) and those who did not consider leaving (M = 35.35) was 9.59 scale points. The large difference in scale points indicate that students who have considered leaving felt that UOG did not provide a supportive environment during their 2018 academic year.

The second-largest difference in mean scores was for the Quality of Interactions indicator. The difference in the Quality of Interactions indicator mean scores between those who considered leaving (M = 31.13) and those who did not consider leaving (M = 39.32) was 8.19 scale points. The variation in mean scores for the Quality of Interactions suggest that students who considered leaving rated their quality of interaction with staff and faculty at lower levels when compared to students who did not consider leaving.

The third-largest difference in mean scores was for Effective Teaching Practices. The difference in the Effective Teaching Practices indicator mean scores between those who considered leaving (M = 38.93) and those who did not consider leaving (M = 44.29) was 5.37 scale points. The variance in mean scores for Effective Teaching Practices indicate that teaching practices were less effective for students who considered leaving. Based on the 60-point scale used by NSSE, the lower mean scores of those who considered leaving indicate that in general, participated less or had lower perceptions of student engagement related activities than those who did not consider leaving UOG.

Table 3. Engagement Indicators and Consideration of Leaving Cross-tabulation

	Considered Leaving		Did Not Consider		Total		
	M	*SD*	*M*	*SD*	*M*	*SD*	*n*
Higher-Order Learning	37.72	14.18	41.19	13.30	40.16	13.62	192
Reflective and Integrative Learning	37.41	12.03	39.52	11.33	38.89	11.55	191
Learning Strategies	36.79	15.67	38.22	13.16	37.80	13.92	191
Quantitative Reasoning	23.57	16.38	26.52	14.37	25.65	15.01	191
Collaborative Learning	33.68	13.28	38.46	12.70	37.05	13.02	193
Discussions with Diverse Others	36.40	15.08	38.92	15.05	38.17	15.06	191
Student-Faculty Interaction	15.36	12.32	18.62	13.47	17.66	13.19	190
Effective Teaching Practices	38.93	16.08	44.29	11.25	42.73	13.03	192
Quality of Interactions	31.13	15.57	39.32	13.16	37.00	14.33	184
Supportive Environment	25.76	14.76	35.35	13.50	32.55	14.51	192

Note. Engagement indicators are based on a 60-point scale, with 60 being the highest level.

Prior to running the regression models, a test for multi-collinearity was conducted to assess the level of collinearity between the predictor variables. As mentioned earlier, VIF values less than ten should not be a cause for concern, whereas VIF values larger than ten may indicate issues leading to unreliable regression results (Bowerman & O'Connell, 1990; Myers, 1990). Additionally, tolerance levels of less than 0.10 may also indicate potential issues (Tabachnick & Fidell, 2001). Based on these guidelines, the results from collinearity tests consist of VIF values less than ten, as well as tolerance values above 0.10 (See Table 4). These results indicate that multicollinearity is not an issue and that the predictor variables would be acceptable for entering a regression model.

Table 4. Collinearity Statistics

	Collinearity Statistics	
	Tolerance	VIF
Higher-Order Learning	0.689	1.450
Reflective and Integrative Learning	0.415	2.408
Learning Strategies	0.583	1.714
Quantitative Reasoning	0.715	1.399
Collaborative Learning	0.624	1.602
Discussions with Diverse Others	0.687	1.455
Student-Faculty Interaction	0.617	1.621
Effective Teaching Practices	0.697	1.434
Quality of Interactions	0.773	1.293
Supportive Environment	0.643	1.554

To evaluate if the NSSE engagement indicators have a statistically significant relationship with a student's consideration of leaving in the first year, binary logistic regression was conducted on each indicator independently with the outcome variable. The logistic regression odds ratio, Exp(B) in Table 5, was utilized to define the effect that the predictor variable had on the outcome variable. For this relationship to be significant, the p-value, Sig. on Table 5., must be .05 or less. Through this analysis, Collaborative Learning, Effective Teaching Practices, Quality of Interactions, and Supportive Environment exhibited significant relationships with consideration of leaving. The logistic regression odds ratio (Exp(B) for all the significant predictor variables were less than 1.0. This is an indication of a negative association between the predictor and outcome variables, which infer that, as the scores on the engagement indicators for a student increase, the likelihood of a student to consider leaving decreases.

Table 5. Individual Binary Logistic Regression Results

	B	S.E.	Wald	Df	Sig.	Exp(B)
Higher-Order Learning	-0.019	0.012	3	1.000	0.109	0.982
Reflective and Integrative Learning	-0.016	0.014	1	1.000	0.248	0.984
Learning Strategies	-0.007	0.011	0	1.000	0.515	0.993
Quantitative Reasoning	-0.013	0.011	2	1.000	0.217	0.987
Collaborative Learning	-0.029	0.013	5	1.000	0.021	0.971
Discussions with Diverse Others	-0.011	0.011	1	1.000	0.291	0.989
Student-Faculty Interaction	-0.020	0.013	2	1.000	0.122	0.980
Effective Teaching Practices	-0.031	0.012	7	1.000	0.011	0.969
Quality of Interactions	-0.041	0.012	11	1.000	0.001	0.960
Supportive Environment	-0.050	0.013	16	1.000	0.000	0.951

Note. Binary logistic regression was conducted for each predictor variable separately.

To predict consideration of leaving the university (a binary variable), all ten engagement indicators were entered into a single binary logistic regression model. Higher-Order Learning, Reflective and Integrative Learning, Learning Strategies, Quantitative Reasoning, Discussions with Diverse Others, Student-Faculty Interaction, and Effective Teaching Practices were not statistically significant after controlling for the covariates (See Table 6).

Table 6. Initial Binary Logistic Regression Prediction Model Output

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Higher-Order Learning	-0.013	0.016	0.656	1	0.418	0.987
	Reflective and Integrative Learning	0.046	0.025	3.218	1	0.073	1.047
	Learning Strategies	0.021	0.018	1.350	1	0.245	1.021
	Quantitative Reasoning	0.001	0.015	0.008	1	0.927	1.001
	Collaborative Learning	-0.045	0.018	6.079	1	0.014	0.956
	Discussions with Diverse Others	0.001	0.015	0.006	1	0.940	1.001
	Student-Faculty Interaction	0.010	0.019	0.277	1	0.599	1.010
	Effective Teaching Practices	-0.018	0.016	1.321	1	0.250	0.982
	Quality of Interactions	-0.038	0.015	6.407	1	0.011	0.963
	Supportive Environment	-0.042	0.016	6.677	1	0.010	0.959
	Constant	1.870	0.902	4.299	1	0.038	6.491

Notes. a. Variable(s) entered on step 1: Higher-Order Learning, Reflective and Integrative Learning, Learning Strategies, Quantitative Reasoning, Collaborative Learning, Discussions with Diverse Others, Student-Faculty Interaction, Effective Teaching Practices, Quality of Interactions, Supportive Environment.

A final logistic regression model was executed, excluding the non-significant covariates. The results of this model are shown in Table 7. The sample size for this model was 183, after excluding a total of 27 cases with missing data. Overall, the model predicted 138 cases out of 183, or 75.4%. Both the Hosmer and Lemeshow Test ($p = .602$) as well as the Omnibus Tests of Model Coefficients ($p = .000$) indicate that the model is a good fit for the data. The results, including the logistic regression coefficient (β), standard error of β (SE), degrees of freedom (*df*), significance level (Sig.), logistic odds ratio (Exp(β)), and the confidence intervals for the predictor variables are shown in Table 7.

Table 7. Binary Logistic Regression Prediction Full Model Output

	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I.for EXP(B) Exp(B)	Exp(B)
Collaborative Learning	-0.019	0.014	2	1.000	0.188	0.981	0.954	1.009
Effective Teaching Practices	-0.007	0.014	0	1.000	0.639	0.993	0.966	1.022
Quality of Interactions	-0.026	0.013	4	1.000	0.054	0.974	0.949	1.000
Supportive Environment	-0.035	0.015	6	1.000	0.017	0.966	0.938	0.994
Constant	2.016	0.796	6	1.000	0.011	7.509		

Note. All predictor variables (covariates) were included in the binary logistic regression model.

Collaborative Learning, Effective Teaching Practices, Quality of Interactions, and Supportive Environment were included in a single binary logistic regression model to measure the contribution of each predictor variable to the prediction of whether a student will consider leaving the institution. All four predictor variables exhibit a negative relationship with the consideration of leaving. Collaborative Learning, Effective Teaching Practices, and Quality of Interactions were not significant predictors in this model. Supportive Environment is the only significant predictor at the $p < .05$ level, Ex (β) = 0.966, $p = .017$ (See Table 7).

The logistic odds ratio, Ex (β), indicates that for every scale point increase on the Supportive Environment indicator scale, a student is 3.4% (1-.966 = 0.034) less likely to consider stopping out.

Discussion

While student background characteristics such as academic preparedness, financial status, and the education level of parents influence student retention, this study focuses on another approach to improving student retention - student engagement. The findings from this study confirm that a relationship exists between levels of student engagement and the consideration of leaving. Furthermore, the findings reveal that the NSSE engagement indicator Supportive Environment is a significant predictor of a student's consideration of leaving. This study suggests that students who strongly believe that their institution maintains a supportive environment were more likely to continue their studies past the first year. To this end, this study revealed the opportunity for practice in improving retention through student engagement, specifically for first-year students.

Implications

The findings from this study suggest that institutions play a large role in the academic success of first-year students. Prior research (Pascarella & Terenzini, 2005) has shown that institutions have a considerable influence on learning behaviors, perceptions, and environments. According to Tinto (1999), institutions should move away from focusing solely on individual support services and towards the development of practices that promote the success of all students, not just select students.

By developing programs and initiatives to address the individual items which construct the Supportive Environment scale, institutions could improve overall indicator scores, and thus, improve the retention of first-year students. The following eight items comprise the Supportive Environment indicator and can provide direction for improvement.

- Providing support to help students succeed academically
- Using learning support services (tutoring services, writing center, etc.)
- Encouraging contact among students from different backgrounds (social, racial/ethnic, religious, etc.)
- Providing opportunities to be involved socially
- Providing support for students' overall well-being (recreation, health care, counseling, etc.)

- Helping students manage their non-academic responsibilities (work, family, etc.)
- Encouraging students to attend campus activities and events (performing arts, athletic events, etc.)
- Encouraging students to attend events that address important social, economic, or political issues

One common program employed by many institutions is the first-year seminar. The first-year seminar is a course for first-year students, and often required. Results from the 2006 National Survey of First-Year Seminars indicated that participation in first-year seminars was attributable to a 43.4% increase in the likelihood to continue to the sophomore year (Tabolowsky et al., 2008). UOG currently requires a first-year seminar course, FY101, which has the potential to improve supportive environment indicator scores. By incorporating more content relating to the types of services and activities offered into the curriculum, first-year students will be more knowledgeable and successful at participating in opportunities available on-campus.

The Supportive Environment indicator may offer insight on opportunities beyond the first-year seminar. Providing opportunities for social involvement and events which promote diversity and inclusion will also support student learning and development. Additionally, offering support such as counseling services that address non-academic responsibilities is beneficial to the overall student success.

Interventions to address the supportive environment of an institution can be implemented immediately and offered to all first-year students regardless of demographics. The scores from the NSSE Supportive Environment engagement indicator can serve as a baseline and also as a measure of success for any interventions implemented in the future.

Limitations

Although this study successfully identified one predictor affecting a student's consideration of leaving prior to degree completion, the study is not without limitations. One of the most important limitations to consider is the fact that this study was conducted at a public institution. For this reason, the application of results should be limited to other public institutions.

Second, although it is possible to extract individual first-year persistence data from student records, it is not possible to differentiate between stop out and transfer reasons. UOG is currently in the process of procuring the National Clearinghouse Student Tracker module, which would allow the university to identify whether students have transferred to another institution. For example, UOG offered a pre-engineering program for several years prior to implementing a complete degree program. Currently, the university has no ability to identify whether students enrolled in the pre-engineering program have stopped-out or transferred to another institution to complete their degree. For this reason, self-reported, consideration of leaving was used as a proxy measure of retention.

A third limitation of this study was that one year of data was used. By limiting the analysis to data reflecting one freshman cohort, several weaknesses result. First, the total number of full-time, first-year, students in the study was relatively low. By increasing the sample size, the number of cases predicted in the logistic regression model could be improved. Second, by using one year of NSSE data, student engagement indicator scores may be skewed due to policy implementation, which may affect the scores reflected on the surveys. For example, budgetary cuts coupled with tuition rate increases may largely affect student perceptions of the institution. By incorporating several years of NSSE data, these effects may be minimized. Additionally, increasing the number of cases in the analysis will strengthen the external validity of the research.

Conclusion

The importance of student retention is undeniably critical to academic success in college. Furthermore, first-year student retention is even more vital in the path towards degree completion. Results from this study indicate that the NSSE benchmark indicator, Supportive Environment, is a significant predictor of a student's decision to leave

the institution. Implications from these findings are that programs and initiatives that promote a supportive student environment could improve first-year retention.

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PROTECTIVE FACTORS FOR ACADEMIC MOTIVATION AMONG COLLEGE STUDENTS

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This study examined the associations between social-interpersonal, school, and cultural factors and academic motivation (intrinsic and extrinsic) among Asian/Pacific Islander students in Guam. A total of 248 undergraduate college students (71% female; ethnically diverse) from the University of Guam participated in this study. The results showed that social- interpersonal (support from parents, peers, and partners), school (acceptance by faculty and peers, belongingness), and cultural (multiculturalism, enculturation – maintenance of heritage culture) factors were positively correlated with both intrinsic and extrinsic motivation. More specifically, the results of regression analyses revealed that multiculturalism, support from partners, acceptance by faculty, and subjective well-being predicted greater levels of intrinsic motivation, after age, gender, and ethnicity were controlled for. Likewise, enculturation, support from partners, and acceptance by faculty were associated with higher levels of extrinsic motivation. The mean levels of both types of motivation did not differ across ethnic groups, although males displayed higher levels of extrinsic motivation than females. These findings can be used to develop a culturally sensitive curriculum and policy and design intervention and prevention programs for students in Guam.

Keywords: social-interpersonal, academic motivation, Asian/Pacific islander, enculturation

Introduction

Education is often recognized as a human right in society as it can provide people who come from underserved or disadvantaged backgrounds with the mechanisms to enhance their social and financial situations, as well as promote healthy development across the lifespan. Although the importance of education is apparent, it still remains unclear how ethnic minorities - notably, Pacific Islanders - progress in America's education system, especially in the college environment (Tran et al., 2010). One significant aspect of higher education to consider is the achievement gap among different ethnic groups. The achievement of ethnic minority students has been often reported to lag somewhat behind that of other groups, and this gap may be typically reflected in the differences in standardized test scores, grade point average (GPA), dropout rates, and college enrollment and graduation rates. Similar to other universities, the achievement gap has been reported for students at the University of Guam (UOG), and some of them face these academic challenges (University of Guam Office of Institutional Effectiveness, 2017, 2018).

Using Bronfenbrenner's ecological systems theory (1979), this study examined several factors that promote academic success among UOG students, particularly Chamorro and Micronesian students. Human development occurs in multiple environments, including among families, peers, and schools (Bronfenbrenner, 1979), suggesting that these contextual factors need to be considered when conducting institutional research on student academic success. In this study, we explored whether the environmental factors, including social and interpersonal factors (family, peer, and partner support), school factors (school belongingness/ connectedness, teacher-student relationships, classroom climate and instruction), and cultural factors (multiculturalism, acculturation, enculturation – maintenance of heritage culture) influence students' academic motivation at UOG.

Social and Interpersonal Factors

Cohen and Will's (1985) buffering hypothesis proposed that social support serves as a protective factor against stressful events. Numerous studies support this hypothesis, demonstrating that high levels of perceived and actual social support provide a buffer, which counteracts stressors, thus decreasing negative psychological outcomes, such as aggression, anxiety, and depressive symptoms (e.g., Chao, 2012; Hefner & Eisenberg, 2009; Lepore, 1992; Reid, Holt, Bowman, Espelage, & Green, 2016). For example, Crockett, Iturbide, Stone, McGinley, Raffaelli, and Carlo (2007) found that in a sample of 148 Mexican American college students from three state universities in the

United States, parental support reduced the effects of acculturative stress on anxiety and depressive symptoms, while peer support changed the relationship between acculturative stress and anxiety symptoms. As for academic domains, Juyeon, Mimi, Kyehyoung, and Sung-il (2015) found that parental support, particularly emotional support, predicted strong academic goals, low test anxiety, and high academic achievement. These findings suggest that support from family members is a protective factor, which reduces the risk of developing psychological problems and increases the chance of academic success. Other studies showed that parental expectation, similar to parental support, served as a positive, preventive factor for academic achievement (Kim & Park, 2006; Murayama, Pekrun, Masayuki, Marsh, & Lichtenfeld, 2016).

Peer groups, friendships, and relationships with significant others are also considered positive relational factors that support learning. According to Bandura's social learning theory (1977), an individual's learning process occurs via observations of others' behaviors. For example, students who have friends who focus on classes and academics may be more likely to be interested in academic matters and, thus, show more motivation for learning and participate in classes and university events. Additionally, friends, peers, and partners can provide emotional and instrumental support, as well as mentoring and guidance, for students who may struggle with academics. In line with these views, research demonstrated that friendships, in particular cross-ethnic friendships in diverse classrooms, are associated with positive developmental and educational outcomes, such as academic attitude, motivation, and participation (Cardinali, Migliorini, Andrighetto, Rania, & Visintin, 2016; Kawabata & Crick, 2011, 2015).

Given that Guam's culture is primarily collectivistic (Nakamura & Kawabata, 2018), relationships with family, peers, and romantic partners may be developmentally salient and strongly influence students' daily life. That is, positive interpersonal experiences in the context of close relationships (i.e., emotional and instrumental support) may lead to better social and school adjustment (e.g., academic success) among students, particularly in close-knit, collectivistic cultures. In contrast, negative interpersonal relationships, such as conflict, argument, and fighting, may be detrimental to students' cognitive and emotional processes. This study explored whether social support from three different sources (family, peers, and partners) predict academic motivation.

Factors in the University Environment

In the competitive college environment, retention of students through social involvement has become increasingly important. Findings from Glass and Westmont's study (2014) provided significant evidence supporting the relationships among belongingness, cross-cultural interactions, and academic success. The study found that belongingness mediated the inverse relationship between racial discrimination and academic success, wherein the direct association between racial discrimination and academic success became indirect when belongingness was added to the model. In other words, higher reports of racial discrimination were associated with decreased sense of belonging, which in turn predicted lower academic success. Graham and Gisi (2000) also demonstrated that student satisfaction with instructional and teaching climate and quality of student services predicted high overall college rating and learning outcomes. These findings suggest that warm, inclusive school and classroom environments may lead to positive attitudes toward academics, greater levels of belongingness, and higher levels of motivation for learning.

Likewise, research conducted by Creasey, Jarvis, and Knapcik (2009) showed that connected, supportive affiliations between students and instructors are associated with positive achievement orientations. These students also reported less anxiety, compared to those who felt less connected to their instructors, suggesting that positive student-instructor interactions may create a more comfortable and less intimidating environment for studying. These are in line with the findings of another study, which showed that college students' perceptions of their interactions with faculty (i.e., being respected by instructors, availability and friendliness of instructors, and off-campus contact) predicted greater levels of academic self-concept and motivation (Komarraju, Musulkin, & Bhattacharya, 2010). Given that students in Guam may put more emphasis on interpersonal relationships due to their collectivistic orientations (Nakamura & Kawabata, 2018), student-faculty interactions and peer relationships formed at school may be particularly important for academic engagement. The present study examined whether

school connectedness, assessed by acceptance by faculty and peers as well as a sense of belonging, plays a crucial role in academic motivation and learning among UOG students.

Cultural Factors

According to Chavez (2007), an education that is multicultural encourages an empowering learning process because of the "varying life experiences, cultural influences, learning styles, types of ability, age, ethnicity, sexual orientation, gender, nationality, spiritual philosophy, values, and priorities," that allow students, especially those who belong in the ethnic minority, to experience their individual cultural rhythms (pp. 274-275). Using semi-structured interviews among four university instructors who were recognized as multiculturally empowering by minority and international students in their university, along with five students from each instructor's class, Chavez (2007) explored the different facets of building an empowering multicultural learning community. Qualitative themes generated from the study suggested that creating a multicultural climate, such as feelings of safety, and mutual, reciprocal cross-cultural/ ethnic interactions, provide an opportunity for students from ethnically diverse backgrounds to learn new ways of thinking and working together (Chavez, 2008). These findings support the importance of multiculturalism on motivation among students at UOG.

Another important cultural factor is enculturation, which refers to the maintenance of one's heritage culture. Several studies have suggested that enculturation, which is typically associated with strong ethnic identity, acts as a protective factor for ethnic minority individuals' development (Gonzales, Knight, Birman, & Sirolli, 2004). Ethnic minority individuals with strong cultural identification generally demonstrate greater levels of self-esteem and self-worth, leading to resilience that counteracts against the effects of negative, stressful events (Gonzales et al., 2004). Moreover, Marks, Ejesi, and Coll (2014) found that enculturation may promote academic success, particularly when the individual's family and heritage culture places greater emphasis on the value of education and strong work ethic. This view has been supported by an empirical study conducted with fifth- to eighth-grade Native American students (Whitbeck, Hoyt, Stubben, & LaFramboise, 2001). Whitbeck et al., (2001) indicated that enculturation was associated with greater school success and more participation in school sports and clubs. The present study examined whether main cultural factors - multiculturalism and enculturation, predict academic motivation among Pacific Islander students in Guam, who are significantly underrepresented in social science research.

Types of Academic Motivation

In this study, two types of motivation, known as intrinsic motivation and extrinsic motivation were used as outcome variables of the protective factors mentioned above. Deci and Ryan (2008) conducted research on the effects of both intrinsic and extrinsic motivation on persistence in education along with close relationships (i.e. significant others). Intrinsic motivation refers to doing a behavior "because the activity itself is interesting and spontaneously satisfying" (Deci & Ryan, 2008, p. 15). Thus, people who are intrinsically motivated perform activities due to positive feelings that result from the activities themselves. On the other hand, extrinsic motivation refers to "engaging in an activity because it leads to some separate consequence" (Deci & Ryan, 2008, p. 15). Behaviors that are extrinsically motivated are performed in order to be rewarded in return or to avoid being punished. The researchers identified how motivation performance feedback that is positive has been found at times to enhance intrinsic motivation and does not leave people amotivated (Deci & Ryan, 2008). Furthermore, people in close relationships tend to rely on or depend on others, due to finding the reliance and engagement as comforting as well as satisfying (e.g., sense of mutuality). In schools, the classroom as an interpersonal climate can be more autonomous and controlling, yet it depends on the position of the teacher. Students who have autonomy-supportive teachers had a higher self-esteem and felt more competent in their schoolwork, and were able to internalize their motivation (Deci & Ryan, 2008; Vansteenkiste, Lens, & Deci, 2006). Given that types of academic motivation may have different processes and outcomes, both intrinsic and extrinsic motivation were considered in this study.

Methodology

The present study explored the associations between social-interpersonal, school, and cultural protective factors and students' academic motivation. The environmental factors included social and interpersonal factors (family, peer, and partner support), school factors (school belongingness/ connectedness, teacher-student relationships, classroom climate and instruction), and cultural factors (multiculturalism and enculturation - maintenance of heritage culture). Based on the literature review, it was hypothesized that greater levels of social- interpersonal, school, and cultural factors would be associated with higher levels of academic motivation (both intrinsic and extrinsic) among UOG students.

Participants

A total of 248 undergraduate students from the University of Guam participated in this study. Participants' mean age was 22.40, ranging from 18 to 67 years old. One hundred seventy six out of 248 (71%) were females, while 71 (28.6%) were males; one (.4%) participant did not identify sex. The participants consisted of the following ethnicities: African American (.8%), Chinese (1.6%), Filipino (39.1%), Indian (1.2%), Japanese (.4%), Korean (1.6%), European American (2.0%), Chamorro (19%), Chuukese (1.6%) Marshallese (.8%), Yapese (.8%), Native American (.4%), and Mixed (25.0%). Participation in this study was on a voluntary basis; students were able to access the survey through a link on an invitation sent via mass student email distribution, in-class recruitment, friendship networks, and social networking sites.

Measures

Demographic Information Form. Participants were asked to provide basic information about themselves, such as age, sex, ethnicity, and length of stay in Guam, number of friends with the same or cross-ethnic backgrounds, highest level of education attained by parents, number of siblings, educational level, major/minor, current GPA range, student organization involvement, and access to school/academic resources.

Multiculturalism. The participants' experiences and attitudes with different cultures were assessed through the Multicultural Experiences Questionnaire (MEQ; Narvaez, Endicott, & Hill, 2009). MEQ is a 15-item (reduced to 10-items due to not being relevant to target population) questionnaire that measures four subscales: multicultural experience, multicultural desire, discrimination perceptions, and social group perceptions. Three of the items were presented categorically, while the rest of the items were rated using a 5-point Likert scale ranging from 1 (*not true at all*; *never*) to 5 (*very true; always*). This measure had a Cronbach's alpha pf .569. Narvaez and Hill (2009) found a high internal consistency reliability for this scale with a Cronbach's alpha of .75 and .80.

Well-Being. Participants' satisfaction with life and subjective well-being was rated in a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) using the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1995). This scale was found to have a Cronbach's alpha of .878, indicating good internal consistency reliability. Diener (2009) has also proved the scale's reliability and validity.

Academic Motivation. The participants' level of academic motivation was assessed through the Academic Motivation Scale – College Version (AMS-C; Vallerand, Pelletier, Blais, Briere, Senecal, and Vallieres, 1992-1993). AMS-C is a 28-item questionnaire consisting of six subscales: intrinsic motivation to know, intrinsic motivation toward accomplishment, intrinsic motivation to experience stimulation, extrinsic motivation – identified, extrinsic motivation – introjected, extrinsic motivation – external regulation, and amotivation. These subscales were combined to create two distinct subscales: intrinsic motivation and extrinsic motivation. Responses were rated on a 7-point Likert scale from 1 (does not correspond at all) to 7 (corresponds exactly). The Cronbach's alpha for this scale was .940, indicating high internal consistency reliability as reported by Stover, De La Iglesia, Boubeta, & Liporace, 2012).

Enculturation. The level of enculturation (maintenance of old/heritage culture) among participants was measured through a 20-item questionnaire (reduced to 10-items for enculturation subscale) called the Vancouver Index of Acculturation Scale (VIA; Ryder, Alden. & Paulhus, 2000). Participants were asked to rate their responses from 1 (*disagree*) to 9 (*agree*). The Cronbach's alpha for this scale is .915, consistent with reports from previous studies (Huynh, Howell, & Benet-Martínez, 2009; Le & Raposa, 2019; Ryder, Alden, Paulhus, & Dere, 2013).

Perceived Social Support. The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988) is a 12-item questionnaire that measured the participants' perceived support from their significant other, family, and friends. Participants were asked to rate their response from 1 (*very strongly disagree*) to 7 (*very strongly agree*). This measure was found to have a Cronbach's alpha of .920. Other studies also demonstrated the reliability and validity of this measure (Pushkarev, Zimet, Kuznetsov, & Yaroslavskaya, 2018; Wongpakaran, Wongpakaran, & Ruktrakul, 2011).

School Connectedness and Belongingness. The Psychological Sense of School Membership Scale is an 18-item questionnaire that was utilized to measure the participants' sense of belongingness at the University of Guam. It measured three concepts: belonging, rejection, and acceptance. Responses were rated from a 5-point Likert scale from 1 (*totally disagree*) to 5 (*totally agree*). This scale had good internal consistency reliability with a Cronbach's alpha of .886, as supported by other researchers (Gaete, Montero-Marin, Rojas- Barahona, Olivares, & Araya, 2016).

Procedures

With the help of University of Guam's registrar, the survey link and instructions on how to access it were distributed to the UOG students' university email and a notification was sent through the university's official mobile app. The prospective participants were informed that one out of six participants will have a chance to win a $20 National Office Supply gift certificate. Interested participants were instructed to create anonymous email addresses before taking the online survey to protect their privacy. In-class recruitment was also conducted; some instructors announced the research project and encouraged students to check their university email for the survey link and instructions. In addition to the chance of winning the $20 gift certificate, some students were also able to receive extra credit with instructor approval. The survey link consisted of a cover letter, informed consent, aforementioned measures, and a debriefing statement. The cover letter and consent form were presented prior to the demographic information form and the measurement scales, stating that their participation was completely voluntary and they may withdraw at any time without any repercussions. In addition, the cover letter, consent form, and debriefing statement (presented at the end of the survey, which contained a brief summary of the research project) included student psychological services' and the researchers' contact information should the survey trigger any emotional or mental distress to the participants, although the researchers expected little to no risk resulting from participation in the research project.

Findings

Correlations

Correlations (Table 1) between cultural factors, social support, school belongingness, life satisfaction, and academic motivation were found in the study. Cultural factors such as multiculturalism and enculturation were positively correlated with both intrinsic (r = .423, $p< .01$; r = .285, $p < .01$, respectively) and extrinsic (r = .282, $p < .01$, r = .344, $p < .01$, respectively) motivation. Social support factors such as significant other's support, family's support, and friend's support were also positively correlated with intrinsic (r = .285, $p < .01$; r= .216, $p < .01$; and r = .127, $p = .05$) and extrinsic (r = .260, $p < .01$; r = .207, $p < .01$, and r= .144, $p < .05$) motivation. Similarly, factors involving school connectedness such as acceptance by faculty, school belongingness, and acceptance by peers were positively correlated with both intrinsic (r = .305, $p < .01$; r = .330, $p < .01$, r = .197, $p < .01$, respectively) and extrinsic (r = .187, $p < .01$; r = .193, $p < .01$; r = .129, $p < .05$, respectively) motivation. Life satisfaction was also found to be positively correlated with intrinsic (r = .309, $p < .01$) and extrinsic (r = .156, $p < .05$) motivation.

Table 1. Correlations, Means, and Standard Deviations of Variable

Variables	1	2	3	4	5	6	7	8	9	10	11	*M*	*SD*
1 Multiculturalism	-	-	-	-	-	-	-	-	-	-	-	3.57	0.47
2 Enculturation	.309**	-	-	-	-	-	-	-	-	-	-	6.82	1.67
3 Significant Other's Support	.166**	.232**	-	-	-	-	-	-	-	-	-	5.35	1.82
4 Family's Support	.160*	.306**	.469**	-	-	-	-	-	-	-	-	4.90	1.72
5 Friend/s' Support	0.052	.332**	.428**	.475**	-	-	-	-	-	-	-	5.14	1.57
6 Acceptance by Faculty	.142*	.234**	.195**	.333**	.393**	-	-	-	-	-	-	3.39	0.71
7 Belongingness	.169**	.364**	.228**	.359**	.316**	.659**	-	-	-	-	-	3.25	0.88
8 Acceptance by Peers	0.112	.325**	.207**	.396**	.448**	.785**	.633**	-	-	-	-	3.65	0.74
9 Life Satisfaction	0.101	.356**	.395**	.585**	.431**	.368**	.417**	.427**	-	-	-	4.19	1.42
10 Intrinsic Motivation	.423**	.285**	.285**	.216**	.127*	.305**	.330**	.197**	.309**	-	-	4.93	1.37
11 Extrinsic Motivation	.282**	.344**	.260**	.207**	.144*	.187**	.193**	.129*	.156*	.586**	-	5.67	1.16

Note. *$p < .05$. **$p < .01$. ***$p < .001$.

Regression Analysis

Multiple regression analysis was utilized to test whether cultural factors, social support, and school belongingness significantly predicted participants' intrinsic and extrinsic academic motivation. The results indicated that multiculturalism, significant other's support, acceptance by faculty, acceptance by peers, and life satisfaction significantly predicted intrinsic motivation (ß= .302, $p < .001$; ß = .162, $p < .05$; ß = .319, $p < .001$; ß = -.219, $p < .05$; ß = .200, $p < .01$, respectively). In addition, extrinsic motivation was significantly predicted by enculturation, significant other's support, and acceptance by faculty (ß = .252, $p < .001$; ß = .158, $p < .05$; ß = .271, $p < .01$, respectively). Multiculturalism and acceptance by peers marginally predicted extrinsic motivation (ß = .117, ß = -.172, $p < .1$, respectively). Age, sex, and ethnicity (Chamorro, Filipino-American, and other Pacific Islanders) were used as covariates in the analysis.

Table 2. Hierarchical Multiple Regression Analyses Social Support, School Connectedness, and Life Satisfaction Predicting Intrinsic and Extrinsic Motivation in UOG Students

Predictor	Intrinsic	Extrinsic
Intercept	0.983	4.579***
Age	-0.012	-0.086
Sex	-0.029	-0.139*
Chamorro	0.016	0.019†
Filipino-American	-0.051	-0.112
Other Pacific Islanders	-0.122†	-0.114
Multiculturalism	0.302***	0.117†
Enculturation	0.074	0.252***
Significant Other's Support	0.162*	0.158*
Family's Support	-0.063	0.084
Friend/s' Support	-0.109	-0.066
Acceptance by Faculty	0.319***	0.271**
Belongingness	0.102	-0.003
Acceptance by Peers	-0.219*	-0.172†
Life Satisfaction	0.200**	-0.055

Note. † $p < .1$. *$p < .05$. **$p < .01$. ***$p < .001$.

Discussion

Social and Interpersonal Factors

The study found that family support was positively correlated with intrinsic and extrinsic motivation for learning. Specifically, the more parental support students had, the more they were likely to be academically motivated. This finding is in line with previous studies demonstrating the beneficial roles of family support on academic motivation (Abdulghani, Al-Drees, Khalil, Ahmad, Ponnamperuma, & Amin, 2014; Barbatis, 2010; Cheng, Ickes, & Verhofstadt, 2011; Juyeon et al., 2015). One possible explanation for this finding is that parental support may provide a warm, comfortable environment in which students can develop a lifelong habit of learning and keep high motivation for studying. Alternatively, parental support may reflect their expectation toward education, and this view may be culturally salient for families of Asian descent. Indeed, the literature suggests that the significance of parental expectations may differ depending on the ethnicity, as seen in a study by Yamamoto and Holloway (2010), in which parental expectations were higher for Asian American families when compared to other ethnicities. Findings by Furry and Sy (2015) showed that Asian American students perceived greater parental expectations to succeed in college and complete graduate or doctoral education. Overall, parental support, which may be a reflection of parental expectation, may be an important indicator for academic success among UOG students.

Peer support was also positively correlated with academic motivation among UOG students. This finding corresponds to multiple studies which showed that students with peers who are academically successful are more likely to be academically successful in college, and remain so (McCabe, 2016). One possible explanation for this finding is that students who spend a lot of time with their peers focusing on academics may be more likely to be engaging in similar activities (i.e., studying, developing careers and goals) and learning reciprocally. In the comprehensive review, Syed, Azmitia, and Cooper (2011) discussed that social support, including mentors and role models (e.g., academically motivated friends, peer mentors, club leaders) could guide students in developing their academic self-concept and motivation. These views confirmed the findings of the present study, suggesting the significance of family and peer support in academic motivation.

Worthy of note is that among different sources of support, support from significant others (e.g., partners) seem to be the most crucial part of academic motivation. That is, support from significant others (other than parents and peers) uniquely predicted greater levels of intrinsic and extrinsic motivation, above and beyond the contributions of parent and peer support. Notably, the statistical significance of parent and peer support was removed once support from significant others was considered in the model. One possibility is that college students who are in emerging adulthood may spend more time with their partners and seek or receive help from each other in close relationships, as they become more independent from their parents. Developmentally, it is reasonable to assume that emerging adults may respond more to their partner both physically and emotionally. Research conducted by Deci and Ryan (2008) signified that students who are committed in a close relationship generally experience a sense of mutuality and obtain rewards that have a positive effect on academic success. More studies that examine the role of support from multiple sources are needed to clarify how and why different types of support are predictive of academic motivations among UOG students.

Factors in the University Environment

This study found that school connectedness, including acceptance by faculty, belongingness, and acceptance by peers, were positively correlated with intrinsic and extrinsic motivation. As discussed previously, peer support can be a protective factor for academic motivation. Peer acceptance can be a foundation of peer support; that is, students who are accepted by peers may be more likely to receive peer support, as compared to those who are not accepted or isolated by peers. Kiefer, Alley, and Ellerbrock (2015) demonstrated that peer academic and emotional support was associated with higher levels of motivation, engagement, and belonging. In this study, both students and faculty reported seeking peer assistance for homework, studying promoted classroom engagement and participation, and that positive, active interactions and discussions with classmates and instructors made students feel “secure and happy,” which further increased their sense of belonging.

These findings aligned with prior research that establish teacher and peer support as critical elements of a positive learning environment and promoters of student adjustment. This study revealed that acceptance by faculty members uniquely predicted both extrinsic and intrinsic motivation, above and beyond the contributions of acceptance by peers and belongingness. This aligns with the study by Juyeon et al., (2015), which found that perceived academic support from teachers predicted strong mastery goals in academic motivation. Findings from a study conducted by Kiefer et al., (2015) also suggested that students are more likely to be academically successful in the class with teachers who endorse students' motivation, engagement, and belonging to the class through positive interactions, respect, and expectation. Overall, acceptance by faculty, which typically co-varies with quality of student-faculty interactions and belongingness to the class, seems to be a crucial factor for promoting academic success among UOG students.

Cultural Factors

Multiculturalism

The findings of the present study suggest that multiculturalism plays an important role in the development of intrinsic motivation among UOG students. This finding is in line with the view that school diversity is beneficial in terms of positive development and academic processes. A growing number of studies have found that ethnic diversity predicted positive social development (i.e., high levels of social, communicative skills, leadership) and cognitive development (i.e., academic success, critical, complex thinking: Kawabata & Crick, 2011; 2015). One mechanism is that students who develop high levels of multiculturalism may have an ability to think from multiple perspectives and to behave in a way that is adaptive to different situations and contexts. Through these culturally diverse experiences, students can have numerous opportunities to learn something they have never thought about, felt, and experienced before. Consequently, these students may become more motivated to learn in new and different ways, which may spark their interest in studying. Indeed, Kawabata and Crick (2015) showed that relative to other peers, adolescents who formed ethnically diverse friendships (i.e., cross-ethnic friendships) were more liked by peers, felt less depressed, and displayed higher levels of academic motivation, engagement, and participation.

Enculturation

As hypothesized, enculturation was positively correlated with both intrinsic and extrinsic motivation. This may be due to the fact that the presence of strong ethnic identity acts as a protective factor for ethnic minority individuals (Gonzales et al., 2004). It is possible that ethnic minority individuals with strong cultural identification demonstrate greater resilience with academic success. This view can be supported by the study conducted by Marks et al. (2014), which showed that minority students displayed high levels of academic motivation, especially when their family and heritage culture place greater emphasis on the value of education and strong work ethic. Taken together, students who are highly enculturated to their own culture may maintain the value of education, which in turn may lead to positive academic attitude and high motivation.

Limitations and Implications

Although the findings of the present study are promising, there are several limitations to consider, including: (1) representativeness of the population and generalizability of the findings, (2) the need for further analyses of ethnic and gender differences in development that may foreshadow cultural implications (e.g. such as comparing how students were raised and how it affects their academic success), and (3) the nature of the correlational study. Provided that this study took a correlational approach, the causality and directionality of the associations between protective factors and academic motivation remain unexamined. For example, acceptance by faculty and students' academic motivation may be bi-directional. That is, students who feel accepted by faculty may increase their motivation for studying, and those students who display high motivation may be more accepted by faculty because these students fit well in the class and meet faculty's expectation. A future longitudinal study would be helpful to determine the direction of the protective factors-academic motivation link among UOG students. Possible ethnic

and gender differences should be also examined in a future study that conceptualizes a theory and generates specific hypotheses. Finally, the findings about the protective factors for academic success are helpful to design culturally-sensitive intervention and prevention programs for academically at-risk students in UOG.

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BUILDING A STUDENT SUCCESS PROFILE AT A MINORITY SERVING INSTITUTION

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University of Guam (UOG) is an open enrollment minority serving institution (51% Pacific Island, 34% Asian-American) with approximately 15% of students placing into both college-ready mathematics and English. Six-year completion rates improved by 8% from the 2009 to the 2011 cohorts, from 25% to 33%. The purpose of the study was to develop a student profile, to determine the retention variables that predicted students' second year retention, to identify students at-risk for dropout, and to guide interventions designed to improve students' success. We examined demographic, academic and financial aid data from first-time, full-time entering freshmen in cohorts 2009 – 2013. Binary logistic regression was performed on several variables, such as ethnicity, gender, first-generation status, high school GPA, percent of courses completed the first year, declared major, and developmental course placement. This paper will present the significant findings as well as intervention and support programs in place.

Keywords: retention, Pacific Islander, student success, developmental, student profile, Guam

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Introduction

The University of Guam (UOG) has identified student success, defined as retention and persistence to graduation, as one of the highest priorities of the institution. For 10 consecutive years, the university met the fall-to-fall retention goal of 75% and has committed to maintaining this high standard. The institution established a goal for a 6-year completion rate of 50%, to be met by 2025. There has been notable improvement on these metrics. The 6-year graduation rate increased by eight percentage points in two years. For the cohort that began in 2011, 33% completed in six years, compared to only 25% of the students who began in 2009. To accomplish this, the institution took an introspective look to identify barriers and develop solutions to improve the student experience, particularly in the areas of retention and persistence to graduation.

The purpose of the study was to develop a student profile to determine the retention variables that predicted students' second year retention, to identify students at-risk for dropout, and to guide interventions designed to improve students' success. We examined demographic, academic, and financial aid data from first-time, full-time entering freshmen in cohorts 2009 – 2013. Binary logistic regression was performed on several variables, such as ethnicity, gender, Pell eligibility, high school GPA, first term GPA, percent of courses completed the first year, declared major, and developmental course placement. This paper will present the significant findings as well as intervention and support programs in place.

Many of the programs within this student success initiative have been implemented and proven effective at other institutions. UOG adopt a "seed & feed" approach to piloting programs (seeding) and tinkering with them with new ideas, resources, and incrementally larger groups of students (feeding) has been highly effective. Often, the senior administration paid the seeding costs, while the feeding costs were contributed by deans. The shared costs have encouraged shared development and governance for each initiative, with a minimal number of administrators guiding faculty through local interpretations of national initiatives. Nearly every project was piloted within a semester of being identified, implemented on a small scale with a department for an academic year, and taken to full scale in the second year.

University of Guam

An unincorporated territory of the United States, Guam is an island of 212 square miles located in the Western Pacific, approximately 6,000 miles from the West Coast of the United States. Its geographic location and US affiliation positions Guam as a regional economic and communications hub and bridge between the continental US and the Asia Pacific region. Tourism and the US military are the two strongest industries that shape the island's economic condition. Guam has a population of 159,358, where the Chamorros (indigenous people of the Mariana archipelago) account for 37.3% of the population; 26.3% are Filipinos, 7.1% Caucasian, 7% Chuukese, and the remaining are primarily other Asian and Pacific Islanders (U.S. Census, 2012).

UOG is a public, open admissions, four-year land-grant institution that offers 26 bachelor's and 11 master's degree programs to nearly 4,000 students, primarily from Guam and the Micronesian region. Building on its land grant status, UOG's mission "*Ina, Deskubre, Setbe* – To Enlighten, to Discover, to Serve," describes its role to prepare students to work and serve the communities of Guam, Micronesia and the neighboring Western Pacific.

In 2016, UOG was recognized by the U.S. Department of Education as an Asian-American and Native American Pacific Islander (AANAPISI) serving institution. In Asian ethnicities, Filipino (40.1%) is reported separately while Chinese, Japanese, Korean, Vietnamese, and Other Asians are aggregated (5.9%). In Pacific Islander ethnicities, Chamorro is reported separately (35.8%) while Chuukese, Kosrasean, Marshallese, Palauan, Ponapean, and other Pacific Islanders are aggregated (9.3%). All other ethnicities are aggregated (8.9%), including White, Hispanic, Black Non-Hispanic, American Indian/Alaskan, and Others (UOG Fact Book, 2017).

Academically, UOG is organized into two academic colleges and four professional schools. Once students declare their majors, they progress through the College of Liberal Arts & Social Sciences (CLASS), the College of Natural & Applied Sciences (CNAS), the School of Business & Public Administration (SBPA), the School of Education (SOE), the School of Engineering (SENG), or the School of Nursing & Health Sciences (SNHS) towards their degrees. Before students declare their majors, they are advised and tracked by the Enrollment Management & Student Success (EMSS) advising center. On average, half of all first-year students have not declared a major. EMSS is also responsible for teaching the College Success Seminar course, ID180, required of all first-year students.

Most colleges and schools in U.S. territories accreditation from regional accrediting agencies. UOG is accredited by the Western Association of Schools & Colleges Senior College and University Commission (WSCUC). Professional programs in business, education, business, nursing, and social work also have specialized accreditation. The Guam Department of Education has five accredited high schools sending students to UOG. The Archdiocese of Guam also has several high schools that matriculate students to UOG. There are also five colleges in the Western Pacific with articulation agreements with UOG: Guam Community College, Northern Marianas College, Palau Community College, College of the Marshall Islands, and the College of Micronesia.

As an open admissions institution, the only requirement for admission is a valid high school diploma or GED. Because of the varied cultural and language influences, as well as the disparate educational systems feeding into UOG, all entering students take placement exams in English and mathematics. In a 2015 report, only 15% of entering students place into both college-level English and math.

Student Success Literature

The theoretical foundation that frames UOG's goal of increasing graduation rates is grounded in retention theories of minority students, particularly as it relates to creating a sense of belonging. Tinto (1987) developed the theory of student departure to explain that students of different cultural background have varying skills and expectations, so need different types of interventions. His work was largely validated by the work of Pascarella and Terenzini (1991, 2005), who conducted empirical studies examining student change in college, the extent changes could be attributed to college experiences versus life experiences, the relationship of the change to student experience at an institution, differences in student characteristics, and how long the changes last. In *Sense of Belonging,*

Strayhorn (2012) drew upon the work of Maslow (1943, 1954), articulating that students needed to feel like they belonged, in addition to having their basic life needs met, in order to cultivate and sustain the persistence needed to finish their degrees.

The Role of Gender

There is extensive literature on influences on student success, and gender is a key indicator in persistence rates. The National Bureau of Economic Research found that although more women were entering college, the decline in completion rates has been concentrated among men. The gender disparity remains evident in current statistics. Another contributing factor to persistence rates is ethnicity. While White and Asian students still complete degrees at rates equal to global competitors, it is well documented that African-American, Latino, and Native American students are far less likely to graduate in six years. This is especially true amongst Pacific Islanders, and other historically underserved populations, including first generation college students and underprepared students (Brownell & Swaner, 2010; Finley & McNair, 2013; Kuh, 2008).

High Impact Practices

Ten intentional, high-impact educational practices (HIPs) have been endorsed by the American Association of Colleges & Universities as that contribute to improving student retention and graduation (Kuh, 2008). Many of these HIPs have been proven effective at improving student experiences in studies (Brownell & Swaner, 2010; Finley, 2013; Kuh, Kinzie, Schuh, & Whitt, 2010). Improving the quality of contact and frequency of interactions between faculty and students in the first year is among the most effective strategies in improving student experiences and completion (Kuh et al, 2010; Strayhorn, 2012; Upcraft, Gardner & Barefoot, 2005). Brownell and Swaner (2010) described four types of first year seminars, including "academic seminars with uniform content across sections" (p. 6), which is the model used to design of UOG's seminar, ID180. Barnet et al (2012) found that developmental summer bridge programs evaluated in their studies had positive short- term impacts and they suggested providing continual support and transitional experiences to help underprepared students sustain and reach their goals. Furthermore, these researchers asserted that, "…because educational attainment is the result of a long process influenced by many factors, providing supports to students that span their years in high school and college may help them to develop the skills and knowledge required for postsecondary success" (p. 5).

Data Collection and Sampling

The participants in this study include 2,435 full time, first-time freshman UOG students from fall semester cohorts 2009-2013. The total sample consisted of 41.8% males and 58.2% females, with an average age of around 18 at the start of the fall terms. The two largest ethnic groups are Filipino (40.3%) and Chamorro (38.6%), followed by Micronesian (8.1%). In this study, "Micronesian" was defined as individuals belonging to the indigenous peoples of Micronesia who were not Chamorro. We could not examine smaller race/ethnic categories (White, African-American) separately because the sample sizes were too small for statistical analysis. Nearly 64% of the students came from public high schools, and 36.2% from private high schools, with an average high school grade point average (GPA) of 84 points on a scale of 100, or a B average. Students from private high schools had lower GPA's than students from public schools, but the difference was not significant. Table 1 shows demographic and academic characteristics by enrollment year. There were no statistically significant differences in the distribution of gender, ethnicity, and high school type. However, there were significant differences in major choices, as well as math and English placement. Data was collected on first semester college GPAs, but proved so significant as to influence other variables. This variable was omitted in final analysis, to better analyze how the other variables of interest are associated with retention.

Table 1. Demographic characteristics by year of enrollment (%)

Characteristic		FA09	FA10	FA11	FA12	FA13	Total	p- value
Age (mean ± SD)		18.6 ± 1.9	18.5 ± 1.9	18.6 ± 2.3	18.7 ± 2.5	18.7 ± 2.5	18.6 ± 2.2	0.81
Gender	Male Female	41.2	44.7	41.8	43.5	38.1	41.8	0.28
		58.8	55.3	58.2	56.5	61.9	58.2	
Ethnicity	Micronesian	7.6	5.9	8.4	8.0	10.7	8.1	0.06
	Chamorro	40.4	41.2	40.4	36.6	34.2	38.6	
	Filipino	39.8	40.6	37.8	39.6	43.3	40.3	
	Asian	5.0	3.9	5.3	8.0	6.4	5.7	
	Other	7.2	8.4	8.1	7.8	5.3	7.4	
HS GPA (mean, SD)		84 ± 11	82 ± 14	84 ± 14	84 ± 14	85 ± 13	84 ± 13	0.16
High School	Public	66.1	66.2	62.8	60.0	63.9	63.8	0.23
Type	Private	33.9	33.8	37.2	40.0	36.1	36.2	
Pell Recipient	Yes	51.3	67.8	64.6	57.9	58.0	59.8	0.00
Major	CLASS	6.0	4.9	3.7	8.2	6.6	5.9	0.00
	CNAS	7.4	9.2	11.4	12.3	13.3	10.7	
	EMSS	52.6	57.6	50.5	51.3	46.1	51.7	
	SBPA	15.0	8.6	14.7	12.9	13.1	12.9	
	SNHS	9.3	9.6	9.5	9.4	11.9	9.7	
	SOE	10.7	10.2	10.1	5.7	9.0	9.2	
English	EN085	26.6	17.1	25.1	20.5	24.4	22.8	0.00
Placement	EN100	45.4	49.2	43.7	54.0	48.2	48.1	
	College-ready	28.0	33.7	31.2	25.5	27.5	29.1	
Math Placement	Developmental	68.7	62.0	58.7	59.8	66.8	63.3	0.00
	College-ready	31.3	38.0	41.3	40.2	33.2	36.7	
ID180	Enrolled	87.0	87.1	89.2	84.4	85.5	86.6	0.24

Methodology

The goal of the present analysis was to examine how a variety of factors impacted first-year retention for first-time, full-time freshmen at UOG. A binary logistic model was employed to test the major variables associated with first-year retention including demographic, high school performance, college performance the first term and other. The first-year retention (Yes/No) served as the outcome variable in the binary regression model. Two analysis steps were followed.

Step 1

This step served as a preliminary diagnosis of individual variables. Each individual variable was tested against the outcome variable using chi-square tests, t-tests and simple logistics regressions. The purpose was to see whether an individual variable was a significant predictor for first-year retention. If a variable was tested significantly, then this variable would be included in the binary logistic model.

Step 2

Significant variables were applied to run a multivariable binary logistic regression model. The odds ratio (OR) and 95% confidence interval (CI) for second year retention from the logistic regression models were the primary measures of association. Fifty-one cases (2.1% of the total sample) with some missing data were removed from final analysis. SPSS version 24 was used for all analyses.

Findings

Bivariate analysis of predictor variables associated with second year retention were conducted by the year of enrollment and also for the total sample. Chi-square test of independence indicated that gender, ethnicity, Math and English placement, ID180 (College Success Seminar Course) enrollment, as well as completion of Developmental Math, English and ID180 were all significantly associated with second year retention.

As Table 2 shows, women are more likely to be retained in the second year than men. In most cohorts, Micronesians and Chamorros have lower retention rates than Filipinos and Asians. There are highly significant differences in retention rates between students who passed Developmental English and those who did not. For all cohorts, the retention rates for students who passed Developmental English were about twice as high when compared to students who did not pass Developmental English. A similar effect holds for the ID180 completion variable, and students who passed Developmental Math were also significantly more likely to enroll in their second year.

Table 2. Bivariate analysis of predictors associated with second year retention by year of enrollment (%)

Predictor		FA09	FA10	FA11	FA12	FA13	TOTAL
Gender	Male Female	58.5***	63**	71.6	72.2	73.7	67.5***
		71.9	74.2	76.2	67.3	77.2	73.4
Ethnicity	Micronesian	76.9***	41.4***	57.9***	46.2***	53.8***	55.8***
	Chamorro	59.1	62.9	69.6	65.2	79.0	66.7
	Filipino	71.7	81.2	86.0	79.3	77.8	78.8
	Asian	80.8	57.9	79.2	64.1	90.3	75.6
Type of school	Public School	66.7	69.7	78.2	72.2	75.8	71.4
	Private School	65.9	69.1	72.6	66.0	76.6	70.6
Pell Recipient	No	68.1	67.1	76.4	68.8	80.0	71.9
	Yes	64.8	70.2	73.1	69.9	72.8	70.2
Major	CLASS	70.9	70.8	77.5*	65.0	65.6	70.1
	CNAS	78.9	68.9	88.2	81.7	70.8	76.5
	EMSS	64.9	69.5	82.7	68.4	76.4	70.1
	SBPA	62.3	54.8	72.6	68.3	79.7	65.8
	SNHS	67.4	76.6	61.2	56.5	81.0	73.8
	SOE	67.2	72.0	86.0	82.1	75.0	73.5
Math Placement	Dev Math	61***	65.5*	56.8*	63.2***	73.6	66.5***
	College-ready Math	78.3	75.3	70.0	78.6	80.2	78.5
English Placement	EN085	64.2	54.8**	80.3**	63.0*	66.4*	62.6***
	EN100	63.7	68.9	62.3	67.3	77.4	70.8
	College-Ready English	72.9	77.0	78.4	79.0	81.3	77.6

Math Completion	Passed	82.1***	84.4***	93.5***	86.4***	91.9***	88***
	Did not Pass	58.4	64.4	60.4	58.5	54.4	59.4
	Did not Take	54.5	46.5	65.9	55.2	84.0	64.2
English Completion	Passed	75.1***	76.2***	81.6***	78.8***	82.3***	78.8***
	Did not Pass	30.7	37.1	33.3	31.9	40.0	34.4
ID180	Enrolled	67.4	69.6	76.1	70.1	76.7	71.8*
	Not Enrolled	59.7	66.4	75.6	65.8	65.3	65.3
ID180 Completion	Passed	74.9***	77.0***	80.6***	75.7***	82.5***	78.1***
	Did not Pass	21.7	24.6	20.6	13.5	20.5	20.8
Total		66.4	69.2	33.3	69.4	75.8	70.9

Note. Significance levels *** P< 0.001, ** P < 0.01, * P < 0.

In the preliminary analysis, there were 11 significant variables (Table 3). However, some variables were highly associated and therefore were not included in the multivariable logistic regression model. For example, the 'Math Placement' variable that indicates whether a student was placed in developmental or college-level mathematics is highly associated with the 'Dev Math Completion' variable that indicates whether a student passed developmental math, did not pass, did not take it, or was placed in college-level math. Similarly, the pairs of variables, English Placement and Dev English Completion, as well as ID180 Enrollment and ID180 Completion were highly associated.

Table 3. Variables considered in predictive modeling

Type of Predictor	Listing of Variables	Significant
Demographic characteristics	Age	no, not included
	Marital Status	no, not included
	Gender	yes, included
	Ethnicity	yes, included
	Pell Status	no, not included
	First Generation Status	not included, self-report, missing data
First Term Metrics	UOG First-term Credits Attempted	yes, not included
	UOG First-term % units completed	yes, included
Academic Background	Math Placement	yes, not included
	English Placement	yes, not included
	Major declaration	no, not included
	High school GPA	yes, not included
	Type of high school	no, not included
College Course Taking	Dev Math Completion	yes, included
	Dev English Completion	yes, included
	D180 Enrollment	yes, not included
	ID180 Completion	yes, included

The final model includes six variables that significantly predicted student retention (Table 4). For comparison, the results from simple logistic models in this table are also included. A test of the full model with all six predictors against a constant-only model was statistically significant (P < 0.001).

Gender significantly predicted student retention; females were more likely to be retained than males (OR= 1.38, 95% CI 1.08 – 1.75)). Students who passed ID180 were almost 3 times as likely (OR = 2.85, 95% CI 1.82, 4.45) to be retained compared to students who did not pass. Percentage of units completed during the first semester significantly predicted retention, and as the percentage of courses completed in the first year increased, the likelihood of being retained increased (OR = 11.39).

Table 4. Logistic Regression Model

		Second Year Retention			
		Univariate		Multivariate	
	Variable	OR (95% CI)	P value	OR (95% CI)	P value
Gender	Male	1	0.002	1.00	0.009
	Female	1.32 (1.11, 1.58)		1.38 (1.08, 1.75)	
Ethnicity	Micronesian	1.00	0.000	1.00	0.007
	Chamorro	1.58 (1.16, 2.16)		0.83 (0.55, 1.25)	
	Filipino	2.98 (2.16, 4.10)		1.27 (0.84, 1.92)	
	Asian	2.35 (1.46, 3.78)		1.49 (0.81, 2.75)	
Math	Did not Pass	1.00	0.000	1.00	0.000
	Passed	4.99 (3.48, 7.15)		2.38 (1.56, 3.65)	
	Did not Take	1.22 (0.95, 1.58)		0.81 (0.56, 1.19)	
	Placed to College Math	2.61 (2.11, 3.22)		1.08 (0.78, 1.50)	
English	Did not Pass	1.00	0.000	1.00	0.000
	Passed	7.09 (5.46, 9.49)		2.28 (1.64, 3.17)	
	Placed to College English	7.20 (5.46, 9.49)		2.63 (1.73, 4.2)	
ID180	Did not Pass	1.00	0.00	1.00	0.000
	Passed	13.63 (9.74, 19.08)		2.85 (1.82, 4.45)	
Percent Completed		38.79 (26.98, 55.76)	0.000	11.39 (5.96, 21.74)	0.000

Developmental math (MA085) completion was significant in predicting retention (P for trend < 0.001). Students who successfully passed developmental math course were over two times (OR = 2.38, 95% CI 1.56, 365) more likely to be retained than students who did not pass. Even though the difference is not significant, students who were placed in developmental mathematics but did not take it, were less likely to be retained (OR = 0.81, 95% CI 0.56 – 1.19) than students who took it and failed. It is also worth noticing that students who were placed in developmental mathematics and passed it, were doing better than students who were placed in college level math when compared to the students who did not pass dev math (OR = 2.38 and OR = 1.08 respectively when compared to students who did not pass developmental mathematics).

Also, Developmental English Completion was highly significant in predicting retention (P for trend < 0.001). Students who pass dev English were over 2 times more likely to be retained than non-passing students (OR = 2.28, 95% CI 1.64 – 3.17). The percentage of units completed during the first semester significantly predicted retention, and as the percentage of courses completed in the first year increased, the likelihood of being retained increased (OR = 11.39).

Ethnicity also significantly predicted student retention in multivariable model (P for trend = 0.007); however, the multi-regression coefficient for Chamorro had the opposite direction of the bivariate coefficient Chi-square test and simple logistics regression with only ethnicity as a predictor show that Chamorro, Filipino and Asian are more

likely to be retained when compared to Micronesians. The simple regression odds ratios are 1.58, 2.98, and 2.35, 2.4 respectively, all significant with $P < 0.01$. However, our final multivariable model shows that Chamorro are less likely to be retained than Micronesians (OR = 0.83, 95% CI 0.55 – 1.25) when controlling for percent of units completed.

High school GPA significantly predicted student retention, but generally associated with gender. This study tested models that included both variables: gender and high school GPA, only gender and only high school GPA. The model with only gender included was slightly better, and therefore high school GPA was omitted from the final model.

Application of Findings

Several initiatives have been enacted at UOG to improve retention and graduation rates. Many of them were developed by the Student Success Innovation Team (SSIT), which based many of its recommendations on a preliminary data analysis of students in the 2009 cohort as well as focus group data on student perspectives and concerns.

Related to the findings that students in ID180 were more likely to graduate, this course was not removed from the curriculum, as had been recommended by a program prioritization committee. Further, this course was redesigned to include an academic planning exercise, requiring students to map a 4-year academic plan, which improved student understanding of the need to take more credits and which in itself is another predictor of retention. The course was renamed the First Year Seminar.

UOG has also made several improvements related to the finding that completion of developmental math was a significant predictor. The self-paced version of the course was discontinued, and number of sections of the redesigned course sequence was increased as fast as capacity would allow. A math tutoring center has been established, and more math tutors have been added. There have been experiments with offering a higher-contact-hour course to allow students to finish within one semester. There are planned experiments to offer accelerated, half-semester versions of the courses to pair with a college-level general education math requirement, again, so that students can complete more credits.

Another finding indicated that completing developmental English was a significant predictor. As a result, the two levels of developmental English have been combined into one course, with the option of some students earning college credit for demonstrated content and competency in college-level writing. The services of the writing center have been expanded, and all developmental courses include embedded (peer) tutors.

Interventions have been slower to materialize for the findings that Asians and Filipinos are more likely to persist to the second year than Chamorros and Micronesians, and that females are more likely to persist. These have been more comprehensive in nature, grounded in the approach of improving adopting HIPs to improve student sense of belonging. Below are HIPs initiatives the SSIT recommended because they built on existing frameworks in UOG's curriculum.

The First Year Seminar re-envisions the ID180 College Success Seminar by centering on two common intellectual experiences: shared readings of the *7 Habits of Highly Effective College Students* and *Nihi ta Hasso: Let Us Remember,* a historical narrative of struggle and resiliency during World War II. In tandem, these two reading experiences provided students not only with tools and personal leadership skills to approach life and complete college, but also positive role models, strong Chamorros and Micronesians who persisted through a war-time occupation.

The Triton Summer Bridge is a pre-college experience allowing students with a developmental placement to complete their first year seminar and one developmental course early, so that their first full semester has more credit-bearing, general education courses. Initial offerings of this program have demonstrated excellent

completion rates in the developmental courses as well as outstanding matriculation to full-time enrollment. Triton Transition is a learning community, taking the form of a 12-credit hour semester designed specifically for first-year students who placed into both developmental English and math. This full semester enrollment provides a peer cohort that will serve as a support system as students develop needed skills to succeed in college level courses and an awareness of the rigor and commitment it takes to progress at the college level.

The Triton Engagement Experience is for students in their second year. Through the completion of the Learning Community Project packet, additional intended outcomes for students include awareness of possible majors, awareness of environmental and social issues, awareness of benefits of networking and collaborating with other students, and an awareness of civic duty.

Limitations

The primary limitation of this study is that the study did not capture first generation college student data. There is ample literature referring to the difficulties facing first generation college students, and we have reason to believe many of our students fit this descriptor. However, UOG does not collect data on first generation college students beyond self-reporting on applications for admission.

Conclusion

A student success profile has been established at the UOG, demonstrating predictive relationships between retention and gender, ethnicity, developmental course completion, enrollment in a college success seminar, and taking more courses. Based on findings, the university introduced several theoretical frameworks for improving success rates by establishing improved sense of belonging and HIPs. The gains of eight percentage points on the graduation rate is the largest increase in UOG history, demonstrating that UOG is taking intentional steps to improve student success, through a thorough understanding of our student profile.

Acknowledgements

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PREDICTING AND ENHANCING FIRST YEAR TO SOPHOMORE STUDENT RETENTION AT THE UNIVERSITY OF GUAM

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This report presents results from 21 statistical analyses of data on first year students enrolled at the University of Guam between Fall 2006 and Spring 2008 who left the University without advancing to sophomore status (stop-outs); were placed on academic probation or suspension or dismissed; and/or who withdrew from individual courses; in comparison with more representative samples of UOG first year students.

These analyses provide reliable evidence that self-identified male Guam-based Chamorro first year students, and first year students from the Federated States of Micronesia (FSM) and Palau, were at unusually high risk for stopping out and/or losing academic good standing.[1] Men from the FSM and Palau, and female Guam-based Chamorros, were unusually likely to withdraw from individual courses. The report also presents evidence that female first year students of Filipino ethnicity were unusually likely to advance to sophomore status, to retain academic good standing, and to remain enrolled in individual courses. UOG first year students having prior experience with college-level coursework were also especially likely to advance to sophomore status and to retain academic good standing.

This report also identifies courses of study accompanied by greater or lesser than average risk of stopping out, loss of academic good standing, and/or withdrawals from individual courses. Risk factors included failing to declare a major; coursework in particular subjects (e.g., mathematics; chemistry); and programs enrolling greater numbers of full time equivalent (FTE) students per FTE faculty member. The report concludes with recommendations for increasing retention at the University of Guam, and with a brief proposal for a follow-up intervention study.

Summary tables present findings from 21 Statistical Analysis of Student- and Course of Study-based Factors in First Year Stop-Outs, Losses of Academic Good Standing, and Course Withdrawals.

Keywords: retention, predictive characteristics, Micronesian, first year students

Summary Tables

The Summary Tables below provide an overview of effects detected in the 21 statistical analyses: twenty based on comparisons of actual values within categories of students and programs with null hypothesis-based expected values, using the chi-square statistic; and an analysis using multiple linear regression to test quantitative features of programs and classes as predictors of course withdrawals by first year students. Subsequent sections of the report provide the details of each analysis.

Summary Table 1. Results sorted by Student Demographic Factors

Student Factor	Stop Outs	Probation/Suspension/ Dismissal	Withdrawals
Sex	Men were reliably more likely to stop out.	Men were more likely to be placed on probation, suspended or dismissed.	Men and women were equally likely to withdraw from courses. Men were more likely to withdraw because of work schedule conflicts and lack of interest in course. Women more often cited personal matters.

Ethnicity	Guam-based Chamorro first year students and first year students from the FSM and Palau were overrepresented among stop-outs; Filipino first year students were unusually likely to advance to sophomore status (See Sex x Ethnicity breakdown, below.)	First year students of Guam Chamorro ethnicity were disproportionately likely to lose academic good standing. first year students of Filipino ethnicity were disproportionately likely to retain academic good standing (See Sex x Ethnicity breakdown, below.)	There was no evidence that any ethnic group was reliably overrepresented among course withdrawals
Sex X Ethnicity	Men accounted for the disproportionate tendency of Chamorro first year students to stop out; women largely accounted for the disproportionate tendency of Filipino first year students to advance to sophomore status,	Men primarily accounted for the disproportionate tendency of Chamorro first year students to lose academic good standing; women accounted for the disproportionate tendency of Filipino first year students to retain academic good standing.	In contrast with data on stop outs, male Guam Chamorros were not more likely than average to withdraw from courses. Men from the FSM and Palau were more likely to withdraw. Female Guam Chamorros were more likely than average to withdraw. Female Filipino and female East Asian first year students made reliably fewer withdrawals than average.
Previous School	Students with prior university or community college experience were reliably less likely to stop out.	First year students with prior university or community college experience less often lost academic good standing.	UOG first year students with a General Equivalency Diploma (GED) were reliably more likely than others to withdraw from classes, and graduates of private high schools were less likely to withdraw. First year students with prior college experience were no more or less likely than others to withdraw from courses.
Comparison with Sophomores	N / A	N / A	First year students were reliably more likely than sophomores to attribute withdrawals to the course being too difficult; and less likely than sophomores to decline to explain withdrawals.

Summary Table 2. Results Sorted by Student Academic Factors

Factor in Course of Study	Stop Outs	Probation/Suspension/ Dismissal	Withdrawals
Declared vs. Undeclared	First year students who had not declared a major were reliably more likely to stop out.	Undeclared first year students were more likely to be placed on probation, suspended or dismissed.	Undeclared students were no more likely than declared majors to withdraw from courses.
College / School / Major	No UOG school or college was reliably overrepresented in percentages of first year stop-outs.	No UOG school or college was reliably overrepresented in percentages of first year students on probation, suspended or dismissed.	First year students having different majors also differed reliably in terms of frequencies of requests for course withdrawals.
Courses	N / A	N / A	First year students were disproportionately likely to withdraw from courses in Mathematics, Chemistry, Geography, Philosophy, Anthropology, and Biology. First year students were reliably less likely than expected to withdraw from courses in Communications, English, Fine Arts, and Physical Education, and from ID180 College Success Seminar.
FTES:FTEF ratio	N / A	N / A	Programs enrolling larger numbers of FTE students per FTE faculty member experienced more first year withdrawals.
Program-wide SLOs and Assessment Plans?	N / A	N / A	Courses in programs with program-wide student learning outcomes and assessment plans as of Fall 2006 were not reliably less likely to experience first year withdrawals.
Instructor's years at UOG	N / A	N / A	Instructors with more years of experience, and instructors with less experience, produced comparable percentages of first year withdrawals.

Statement of Purpose and Overview

This report identifies predictors of first year student to sophomore retention at the University of Guam; predictors of academic good standing; and predictors of UOG first year students completing courses, a closely related measure of success: among students enrolled from 2006 to 2008. The report describes analyses of, and conclusions drawn from, data on first year student enrollments at UOG, as they address the following questions:

1. Which groups of UOG first year students were at particular risk for:
   (a) failing to achieve sophomore status ("stopping out');
   (b) academic probation, suspension, or dismissal; and/or
   (c) withdrawing from courses?

   For example, can UOG do more to address the needs of first year students whose high school educations were completed in particular regions, or in particular types of institutions (e.g., in public rather than private high schools)?

2. What courses of study placed UOG first year students at particular advantage or disadvantage in terms of non-retention, probation / suspension / dismissal, and/or course withdrawals?

Following a summary of analyses and of effects detected, the report makes several recommendations for increasing first year student to sophomore retention—and retention within first year courses—at UOG, and proposals for follow-up research.

Data contributing to analyses were supplied by the University's Institutional Researcher, with additional information on instructors, enrollments and caps by first year course supplied by the Registrar's Office. Data on individual academic programs (e.g., FTES:FTEF ratios; use or absence of program-wide student learning outcomes in course syllabi) were drawn from reports from the Senior Vice-President's Office and from qualitative reviews submitted by the programs to the Senior Vice-President in October 2007.

Background

Many factors contribute to student retention and non-retention. Analyses at other universities have typically found reliable predictors of retention among the following: courses taken in high school and other prior institutions; available sources of financial support; hours devoted to employment; standardized test scores, and other measures of the student's skills; on-campus residence vs. commuter status; the family's history of higher education; the student's satisfaction with the institution's academic resources and facilities; the developmental coherence of major curricula; the quality of advising; the existence of "road-block" courses (having content too difficult for many students) and "bottleneck" courses of limited availability; availability of small courses that afford one-on-one contact with faculty; instructors' levels of experience; and the student's ethnicity. sex and socioeconomic background (e.g., Aitken, 1982; Bean, 1982; Cabrera, Nora, & Castaneda, 1993; McCubbin, 2003; National Education Writers Association, 2007; Tinto, 1982, 1997; University of Louisiana Presidents' Task Force, 2007; Western Michigan University (n.d.)). The analyses reported here test for reliable links between an available subset of these factors, and retention among first year students at the University of Guam.[2]

The University of Guam attracts students from a variety of cultures and ethnicities, requiring analyses of UOG-specific data to identify the factors that have best predicted retention at UOG. Once at-risk groups are identified, the University's Administration, staff and faculty can design and implement interventions to increase retention among these groups. The analyses reported here will help to identify UOG's at-risk groups among first year students. The data considered here, deriving from students in an earlier decade, supply hypotheses—rather than conclusions —about risk factors among contemporary students.

Statistical Analyses

Each of the following sections is based on one of three types of outcome measures, as described above: *failing to achieve sophomore status; academic probation, suspension, or dismissal; or non-retention in courses (withdrawals).* Each of these outcome measures contributes unique information. For example, the data indicate that many UOG first year students who failed to achieve sophomore status remained in good academic standing until their decision not to return, and first year students who were placed on academic probation may or may not have withdrawn from particular courses during the prior semester(s).

Groups of UOG First Year Students at Particular Risk

Groups of UOG first year students at risk for non-retention as sophomores. Analyses in this section are based on data from a representative sample of 223 students drawn from the entire population of 484 UOG students who were listed as first year during Fall Semester 2006, did not advance to sophomore status, and did not register for classes after Summer 2007. A control sample, used as comparators in these and subsequent analyses, was randomly selected from all first year students enrolling for the period of Fall 2006 through Spring 2008.

Sex of student. Analysis 1 compared proportionate representations of male and female UOG first year students in "stop-outs"—first year students who discontinued their enrollments at the University of Guam without advancing to sophomore status—with their proportions in a representative sample of UOG first year students. During the period under study, males accounted for 35% of UOG first year students, but for a disproportionate 44% of stop-outs.[3] Put another way, though women accounted for 65% of UOG first year students, they accounted for only 56% of stop-outs, during the same period. Analysis using the chi-square statistic confirmed that this difference is reliable, with *p* (the probability of a difference of this magnitude or greater appearing due to sampling error) at less than .005: x^2 (1) = 7.89. (The number in parentheses indicates the number of degrees of freedom for the analysis.) Table 1 provides a summary of all observed and expected values.

Table 1. Sex of Student as a Predictor of First Year to Sophomore Non-Retention

Sex	Observed in a sample of stop-outs	Expected from a representative sample
Females	125	145
Males	98	78
Totals	223	223

Note. Men were reliably more likely to stop out, $x^2(1) = 7.89$, $p < .005$.

Ethnicity. Analysis 2 compared UOG first year students reporting different ethnicities for evidence of disproportionate representations among stop-outs. Analysis using the chi-square statistic confirmed that stop-outs differed reliably by ethnicity, x^2 (6) = 38.09, $p < .001$.

UOG first year students from Guam who identified themselves as Chamorro[4] (as distinct from first year students from the Commonwealth of the Northern Mariana Islands who identified themselves as Chamorro) were overrepresented among stop-outs, as were UOG first year students from the Federated States and the Republic of Palau. Given that Guam Chamorro students made up 34% of the UOG first year student population, the null hypothesis predicts approximately 76 Guam Chamorro stop-outs, rather than the 109 observed. Similarly, although students from the FSM and Palau accounted for less than 7% of the population of UOG first year students, leading to a null hypothesis-based prediction of approximately 15 stop-outs, 22 appeared. In contrast, Filipino students were particularly likely to remain enrolled. Given that Filipino students made up 42% of UOG first year students, the null hypothesis predicts approximately 93 Filipino stop-outs in the sample; however, only 54 appeared. These differences largely accounted for the magnitude of the chi-square statistic; other ethnicities appeared in the subset of stop-outs at proportionate levels.[5] Table 2 provides a summary of all observed and expected values.

Table 2. Ethnicity as a Predictor of First Year to Sophomore Non-Retention

Ethnicity	Observed in a sample of stop-outs	Expected
Filipino	54	93
East Asian	13	15
Chamorro (CNMI)	7	7
Chamorro (Guam)	109	76
FSM and Palau	22	15
White Non-Hispanic	6	9
Other	12	7
Totals	223	223

Note. Guam Chamorro first year students and first year students from the FSM and Palau were overrepresented among stop-outs; Filipino first year students were unusually likely to advance to sophomore status, $x^2(6) = 38.09$, $p < .001$. (CNMI: Commonwealth of the Northern Mariana Islands.)

Sex by ethnicity. Analysis 3 addressed the hypothesis that members of particular ethnic groups accounted for the disproportionate representation of men in "stop-outs." A chi-square analysis supported this hypothesis: x^2 (8) = 40.13, $p < .001$

As Table 3 indicates, the overrepresentation of males in first year student stop-outs was primarily accounted for by self-identified Guam Chamorro men, who accounted for 14% of students in the sample, but for 24% of all stop-outs.[6] In contrast, female Guam Chamorro stop-outs, at 25%, were more proportional to this group's representation in the control sample, at 20%. In contrast to Guam male Chamorros, fewer than expected male Filipino first year students stopped out (24 stop-outs; 32 would have been proportional.) Put another way, though Guam Chamorro and Filipino men were equally represented in the control sample of first year students, Guam Chamorro men were more than twice as likely as Filipino men to stop out.

Female Filipino first year students largely accounted for the fact that women overall were less likely to stop out. Fewer than half of the 61 stop-outs to be expected in this group (based on their representation in the control sample) actually stopped out.

Table 3. Sex and Ethnicity as Joint Predictors of First Year to Sophomore Non-Retention

Sex and Ethnicity	Observed in a sample of stop-outs	Expected
Female Filipino	30	61
Female East Asian	7	11
Female Chamorro (Guam)	56	45
Female FSM and Palau	15	13
Female Other	17	15
Male Filipino	24	32
Male East Asian	6	4
Male Chamorro (Guam)	53	32
Male Other	15	11
Totals	223	223

Note. Men largely accounted for the disproportionate tendency of Chamorro first year students to stop out; women largely accounted for the disproportionate tendency of Filipino first year students to advance to sophomore status, x^2 (8) = 40.13, $p < .001$.

Previous school. Analysis 4 addressed the hypothesis that first year students who enrolled at UOG from particular types of prior schools—public high school, private high school, the Department of Defense's (DODEA) high school

on Guam[7], or community college or university—departed reliably from their expected representations in stop-outs. A chi-square analysis supported this hypothesis, x^2 (4) = 30.83, $p < .001$. First year students having prior experience with community college- or university-level coursework enjoyed a reliable advantage in advancing to sophomore status at UOG.[8] Table 4 summarizes observed and expected values.

Table 4. Prior School Type as a Predictor of First Year to Sophomore Non-Retention

Prior School Type	Observed in a sample of stop-outs	Expected
DODEA and GED	12	6
Private	53	52
Public	140	130
University or Community College	7	30
Unknown / U.S. mainland	11	6
Totals	223	223

Note. Students with prior university or community college experience were reliably less likely to stop out, x^2 (4) = 30.83, $p < .001$. (The column of "Expected" frequencies sums to 224 due to rounding.)

Groups of UOG First Year Students at Risk for Academic Probation, Suspension or Dismissal

Sex of student. Analysis 5 compared proportionate representations of male and female UOG first year students in a random sample of first year students placed on academic probation, suspended or dismissed (P/S/D), with their proportions in a sample representative of all UOG first year students.

As Table 5 indicates, during the period under study, male first year students were more likely than females to be placed on academic probation, suspended, or dismissed, x^2 (1) = 13.22, $p < .001$. Although the majority of first year students self-identified as female, men accounted for the majority of first year students to lose academic good standing.

Table 5. Sex as a Predictor of Loss of Academic Good Standing among First Year Students

Sex	Observed in a sample of first year students on probation, suspended or dismissed	Expected
Female	59	78
Male	61	42
Totals	120	120

Note. Men were overrepresented among UOG first year students on academic probation, suspended, or dismissed, x^2 (1) = 13.22, $p < .001$.

Ethnicity. Analysis 6 compared UOG first year students reporting different ethnicities for evidence of disproportionate representations among students who were on academic probation, suspended, or dismissed. Analysis using the chi-square statistic confirmed that cases of P/S/D differ reliably by ethnicity, x^2 (3) = 16.86, $p < .001$. UOG first year students from Guam who self-identified as Chamorro were overrepresented among cases of P/S/D. In contrast with results on stop-outs, however, UOG first year students from the Federated States of Micronesia and the Republic of Palau were no more likely than average to lose good academic standing. Filipino first year students appeared less likely than average to be placed on probation, suspended or dismissed. Table 6 summarizes observed and expected values.

Table 6. Ethnicity as a Predictor of Loss of Academic Good Standing among First Year Students

Ethnicity	Observed in a sample of first year students on probation, suspended or dismissed	Expected
Filipino	37	51
Chamorro (Guam)	63	42
FSM and Palau	7	8
Other	13	19
Totals	120	120

Note. First year students of Guam Chamorro ethnicity were disproportionately likely to lose academic good standing. First year students of Filipino ethnicity were disproportionately likely to retain academic good standing, x^2 (3) = 16.86, $p < .001$.

Sex by ethnicity. Analysis 7 addressed the hypothesis that members of particular ethnic groups accounted for the disproportionate representation of men in cases of academic probation, suspension or dismissal (P/S/D). A chi-square analysis supported this hypothesis: x^2 (5) = 30.31, $p < .001$.

As Table 7 indicates, the overrepresentation of males in first year student cases of P/S/D was primarily accounted for by Guam Chamorro men, who accounted for 14% of students in the control sample, but for 27% of all first year students placed on probation, suspended, or dismissed. Female Chamorro first year students were also overrepresented in P/S/D cases, but not to the same degree. Female Filipino first year students were less likely than average to be placed on probation, suspended or dismissed, and this accounted entirely for the positive trend among Filipinos.

Table 7. Sex and Ethnicity as Joint Predictors of Loss of Academic Good Standing among First Year Students

Sex and Ethnicity	Observed in a sample of first year students on probation, suspended or dismissed	Expected
Female Filipino	18	33
Female Chamorro (Guam)	31	24
Female Other	9	21
Male Filipino	19	17
Male Chamorro (Guam)	32	17
Male Other	11	8
Totals	120	120

Note. Men primarily accounted for the disproportionate tendency of Chamorro first year students to lose academic good standing; women accounted for the disproportionate tendency of Filipino first year students to retain academic good standing, x^2 (5) = 30.31, $p < .001$.

Previous school. Analysis 8 supported the hypothesis that first year students who enrolled at UOG from particular types of prior schools departed reliably from their expected frequencies in cases of probation, suspension or dismissal, x^2 (3) = 10.41, $p < .05$. As Table 8 indicates, the data are consistent with results for stop-outs (cf. Table 4): first year students having prior experience with community college- or university-level coursework enjoyed an advantage in retaining good academic standing at UOG.

Table 8. Prior School Type as a Predictor of Loss of Academic Good Standing among First Year Students

Prior School Type	Observed in a sample of first year students on probation, suspended or dismissed	Expected
Private	34	28
Public	72	70
University or College	5	16
Other	9	6
Totals	120	120

Note. First year students with prior university or community college experience less often lost academic good standing, x^2 (3) = 10.41, $p < .05$.

Groups of Students at Unusual Risk of Withdrawing from Courses

Sex. Analysis 9 compared the total numbers of withdrawals from courses by male and female first year students at UOG during the semesters of Fall 2006 through Spring 2008, including Intersession and Summer sessions. As Table 9 indicates, male first year students, accounting for comparable percentages of enrollments (39.5%) and withdrawals (38.5%), were proportionately no more likely to withdraw from courses than females, x^2 (1) < 1, *ns.*

Table 9. Sex of Student as a Predictor of Withdrawing from Courses

Sex	Course withdrawals	Expected Withdrawals
Females	1013	997.04
Males	635	650.96
Totals	1648	1648

Note. There was no evidence that men and women reliably differed in propensities to withdraw from courses, $x^2(1) < 1$, ns.

However, justifications listed on withdrawal requests suggested that men and women withdrew from classes for somewhat different reasons. Males were more likely than females to identify a *work schedule conflict* as their reason for withdrawing (19.8% vs. 13.1%, respectively), and males were *less* likely than females to indicate that a *personal matter* had led them to withdraw (38.8% vs. 45.7%, respectively), x^2 (10) = 23.24, $p < .01$.

Ethnicity. Analysis 10 compared the numbers of withdrawals from courses by UOG first year students of different ethnicities during the semesters of Fall 2006 through Spring 2008, including Intersession and Summer sessions. As Table 10 indicates, no ethnic group was reliably overrepresented in first year students withdrawing from courses, x^2 (6) = 8.58, *ns.* However, a subsequent analysis revealed interactions of sex with ethnicity in predicting withdrawals.

Table 10. Ethnicity as a Predictor of Withdrawing from Courses

Ethnicity	Course withdrawals	Expected withdrawals
Filipino	609	623
Chamorro (CNMI)	50	55
Chamorro (Guam)	669	656
FSM and Palau	113	101
East Asian	69	88
White (non-Hispanic)	50	51
Other	88	75
Totals	1648	1648

Note. There was no evidence that any ethnic group was reliably overrepresented among course withdrawals, x^2 (6) = 8.58, *ns*. Ethnicities are grouped to preserve degrees of freedom. (Expected withdrawals sum to 1649 due to rounding.)

Sex by ethnicity. Analysis 11 compared withdrawals from courses by UOG first year students in groups categorized by sex and ethnicity. As Table 11 indicates, some groups were unusually likely to withdraw, and others unusually unlikely to withdraw, x^2 (12) = 142.06, $p < .001$. Female Chamorro first year students from Guam were reliably more likely than expected to withdraw from courses, but male Chamorro first year students were not. In contrast, female Filipino and female East Asian first year students were *less* likely than UOG first year students as a whole to withdraw from classes; their male counterparts showed no unusual tendencies either way. Male first year students from the FSM and Palau were unusually likely to withdraw; their female counterparts were not.

Table 11. Sex and Ethnicity as Joint Predictors of Course Withdrawals by First Year Students

Sex and Ethnicity	Course withdrawals	Expected withdrawals
Female East Asian	41	82
Female Filipino	348	453
Female Chamorro (CNMI)	38	27
Female Chamorro (Guam)	421	330
Female FSM and Palau	74	96
Female Other	91	82
Male East Asian	27	27
Male Filipino	261	233
Male Chamorro (CNMI)	12	27
Male Chamorro (Guam)	248	233
Male FSM and Palau	39	14
Male White (Non-Hispanic)	19	14
Male Other	29	27
Totals	1648	1648

Note. Male first year students from the Federated States of Micronesia and Palau; and female Chamorro first year students from Guam, made unusually large numbers of course withdrawals; female Filipino and female East Asian first year students made reliably fewer withdrawals than average, x^2 (12) = 142.06, $p < .001$.

Previous school. Analysis 12 indicated that UOG first year students with a General Equivalency Diploma (GED) were reliably more likely than others to withdraw from classes, and graduates of private high schools were less likely to withdraw, x^2 (5) = 11.19, $p < .05$. Interestingly, although earlier analyses demonstrated that first year students with prior college level coursework were less likely to stop out or lose academic good standing, the present analysis indicates that they were no less likely than average to withdraw from courses. It seems likely, then, that first year students with prior college experience made relatively judicious decisions about whether to withdraw from courses.

Table 12. Prior School Type as a Predictor of Withdrawing from Courses

Prior School Type	Course withdrawals	Expected withdrawals
DODEA	18	14
GCC – GED	39	28
Private	352	385
Public	222	220
University or Comm College	967	962
Unknown / U.S. mainland	52	41
Totals	1650	1650

Note. UOG first year students with a General Equivalency Diploma (GED) were reliably more likely than others to withdraw from classes, and graduates of private high schools were less likely to withdraw, x^2 (5) = 11.19, $p < .05$.

Comparing UOG First Year Students' and UOG Sophomores' Reasons for Withdrawing

Analysis 13 compared the reasons that first year students gave for withdrawing from classes with the reasons given by sophomores. As Table 13 indicates, first year students were more likely to cite the difficulty involved in a course as their reason for withdrawing, and sophomores were more likely to decline to explain a withdrawal (21.7% of sophomores' petitions to withdraw were submitted without a specified reason for withdrawal, as compared with 14.9% for first year students), x^2 (7) = 90.25, $p < .001$.

Table 13. Reasons for Withdrawals Given by First Year Students in Comparison with Reasons Given by Sophomores

Reason for Course Withdrawal	% First year requests based on this reason	% Sophomores' requests based on this reason	First year students' withdrawals by reason	Expected if first year withdrawal % = sophomore %
Changed mind	3.03	4.03	50	66
Difficult course	16.13	12.09	266	199
Financial	1.03	2.16	17	36
Lack Interest in Course	3.40	2.30	56	38
Other[†]	14.91	21.72	246	358
Personal Matter	43.00	41.44	709	683
Transportation	2.79	1.87	46	31
Work Schedule Conflict	15.71	14.39	259	237
Totals	100	100	1649	1649

Note. First year students were reliably more likely than sophomores to attribute withdrawals to the course being too difficult; and less likely than sophomores to decline to explain withdrawals, x^2 (7) = 90.25, $p < .001$. [†](The "Other" category includes small percentages of petitions based on lacking prerequisites, medical problems, military orders, and non-transition courses.)

Courses of Study Associated with Particular Risk for First Year Students

Courses of study associated with higher risk of non-retention as sophomores. Analyses in this section are based on further comparisons of data from the same representative sample of 223 first year students who did not advance to sophomore status, with data from the same control sample, as employed in Analyses 1 through 4 above.

Declared majors vs. undeclared students. First year students who had not declared a major were reliably more likely to stop out. Analysis 14 compared proportionate representations of declared first year majors and undeclared students in "stop-outs," with their proportions in the representative sample of UOG first year students, yielding a x^2 (2) = 10.15, $p < .01$. As Table 14 indicates, both undeclared first year students, and undeclared first year students who indicated that they planned to major in education, were overrepresented in stop-outs. Declared majors were reliably more likely to advance to sophomore status.

Table 14. Comparing Rates of First Year to Sophomore Non-Retention with Expected Values for Declared Majors and Undeclared Students

	Observed in a representative sample of stop-outs	Expected
Declared Majors	81	104
Undeclared	123	105
Undeclared Education	19	14
Totals	223	223

Note. Undeclared first year students were reliably overrepresented in stop-outs; declared majors were reliably more likely to advance to sophomore status, x^2 (2) = 10.15, $p < .01$.

Schools and colleges. Analysis 15 compared proportionate representations of particular declared first year majors (aggregated by college, to provide for cell frequencies consistent with the assumptions of the chi-square statistic) in the representative sample of stop-outs, with their proportions in the control sample of first year students, yielding a x^2 (4) = 4.63, a nonsignificant value. As Table 15 indicates, there was no evidence of reliable overrepresentation or underrepresentation of particular colleges or schools, among stop-outs.

Table 15. Comparing Numbers of Stop-outs by College or School of Declared Major

College or School	Observed in representative sample of stop-outs	Expected
School of Business & Public Administration (SBPA)	27	24
School of Nursing & Health Sciences (SNHS)	28	26
School of Education (SOE)	9	8
College of Natural & Applied Sciences (CNAS)	9	17
College of Liberal Arts & Social Sciences (CLASS)	8	6
Totals	81	81

Note. This analysis revealed no reliable overrepresentation or underrepresentation of particular colleges or schools, x^2 (4) = 4.63, *ns*.

Courses of Study Associated with Higher Risk of Academic Probation, Suspension or Dismissal

Declared majors vs. undeclared students. First year students who had not declared a major were reliably more likely to be placed on academic probation, suspended, or dismissed. Analysis 16 compared proportionate representations of declared first year majors and undeclared students in a sample of students who had lost academic good standing with their proportions in a representative sample of UOG first year students, yielding x^2 (2) = 8.64, $p < .05$. As Table 16 indicates, both undeclared first year students, and undeclared first year students who indicated that they planned to major in education, were overrepresented in cases of probation, suspension and dismissal. Declared majors were underrepresented.

Table 16. Comparing Rates of First Year Students Losing Academic Good Standing with Expected Values for Declared Majors and Undeclared Students

	Observed in a representative sample of cases of probation / suspension	Expected
Declared Majors	47	63
Undeclared	62	49
Undeclared Education	11	8
Totals	120	120

Note. Undeclared first year students were more likely to be placed on academic probation, suspended or dismissed, x^2 (2) = 8.64, $p < .05$

Schools and colleges. Analysis 17 compared proportionate representations of declared first year majors by college or school (aggregated by college, to provide for cell frequencies consistent with the assumptions of the chi-square statistic) in cases of academic probation, suspension or dismissal, with their proportions in the representative sample of first year students. Given the small numbers of majors in either sample from the College of Liberal Arts and Social Sciences or the School of Education, this analysis of necessity compared the remaining schools and college. As Table 17 indicates, there were no reliable overrepresentation or underrepresentation of by CNAS or by the Schools of Business and Public Administration and Nursing and Health Sciences, x^2 (2) = 1.79, *ns.*

Table 17. Cases of Loss of Academic Good Standing by College or School of Declared Major

College or School	Observed in a representative sample of cases of probation / suspension	Expected
SBPA	14	12
SNHS	13	12
CNAS	5	8
Totals	32	32

Note. This analysis revealed no reliable overrepresentation or underrepresentation of particular colleges or schools, x^2 (2) = 1.79, *ns.*

Courses of Study Associated with Higher Rates of Withdrawal

Declared majors vs. undeclared students. Analysis 18 revealed that first year students who had not declared a major, or who were undeclared in business or education, were no more likely to withdraw from courses than were declared majors, x^2 (2) < 1. Undeclared students constituted 47.1% of the UOG first year student population and accounted for 47.4% of withdrawals. Undeclared students in education and business were likewise represented proportionally among students who withdrew from courses. Table 18 provides a summary.

Table 18. Comparing Frequencies of Declared and Nondeclared First Year Students Withdrawing from Course(s) with Expected Frequencies

	Observed	Expected
Declared Majors	772	772
Undeclared	781	777
Undeclared Education	96	100
Totals	1649	1649

Note. First year students with declared majors, and undeclared first year students, were proportionately represented among students who dropped one or more courses, x^2 (2) < 1, *ns*.

Specific majors*.* Of declared first year majors who dropped courses, which majors dropped more (or less) than their share? Analysis 19 addressed this question, comparing the frequencies of withdrawals by those majors having sufficiently large numbers to be represented in the analysis, with frequencies expected based on their proportions in the representative sample of first year students. As Table 19 indicates, first year students majoring in Early Childhood Education or in Criminal Justice were unusually likely to withdraw from courses, x^2 (15) = 131.06, p < .001. First year students majoring in Accounting were unusually *un*likely to withdraw from courses.

Table 19. Frequencies of Requests for Course Withdrawals by First Year Majors

Major	Observed Withdrawals	Expected Withdrawals
Accounting	16	47
Biology	53	70
Business Administration	155	151
Chemistry	7	12
Computer Science	30	35
Criminal Justice	45	23
Early Childhood Education	41	12
Elementary Education	24	23
Fine Arts – Music	12	12
Health, Physical Education, Recreation & Dance	18	23
Political Science	16	12
Pre-Engineering	7	12
Pre-Nursing	225	210
Psychology	14	23
Secondary Education	26	23
Social Work	10	12
Totals	699	699

Note. First year students having different majors differed reliably in terms of frequencies of requests for course withdrawals, x^2 (15) = 131.06, p < .001.

Subjects. Analysis 20 compared the numbers of students enrolling in courses in particular subjects with the numbers of students withdrawing. Table 20 compares expected with actual numbers of first year student withdrawals for each subject for which both cell values exceeded four. As Table 20 indicates, some academic subjects were reliably overrepresented in course withdrawals, and others were underrepresented, x^2 (29) = 276.67, $p < .001$.

Table 20. First Year Withdrawals by Subject, Compared with Expected Withdrawals

Subject	Withdrawals by Subject	Expected Withdrawals
Anthropology	**39**	**20**
Fine Arts – Art	*27*	*60*
Business Administration	14	19
Biology	**108**	**75**
Consumer Family Sciences	19	15
Chemistry	**47**	**24**
Chamorro	5	18
Communication	*32*	*66*
Computer Science	7	10
Economics	43	26
Education	42	36
English	*265*	*343*
Geography	**51**	**28**
History	64	72
Interdisciplinary	*55*	*121*
Japanese Studies	28	24
Mathematics	**325**	**242**
Military Science	16	19
Fine Arts – Music	26	25
Natural Science	7	6
Nursing	16	8
Physical Education	*15*	*34*
Philosophy	**68**	**40**
Political Science	42	38
Psychology	111	95
Sociology	51	45
Social Work	12	16
Tagalog	5	17
Theater	15	21
Women and Gender Studies	29	18
Totals	1584	1584

Note. Some academic subjects (shown in **bold**) were reliably **overrepresented** in course withdrawals, and others (shown in *italics*) were *underrepresented,* $x^2(29) = 276.67$, $p < .001$.

First year students were disproportionately likely to withdraw from courses in Mathematics, Chemistry, Geography, Philosophy, Anthropology, and Biology (listed here according to the order in which they contributed to the chi-square statistic.) Courses in Math, for example, saw 325 course withdrawals by first year students (out of a total of 1584), 83 more withdrawals than would be expected given the proportion of total first year student enrollments accounted for by Math courses. Courses in Biology saw 108 withdrawals by first year students, 33 more than expected given the proportion of first year student enrollments accounted for by Biology courses. In each case, the most frequent reason given for withdrawal (other than "Personal Matter," the modal response) was

"Difficult Course." First year students were reliably *less* likely than expected, given the number of enrollments, to withdraw from courses in Communications, English, Fine Arts, and Physical Education, and from ID180 College Success Seminar.

Characteristics of Courses and Programs Predicting Freshman Withdrawals

Analysis 21 employed data on programs and individual instructors as predictors of the percentages of enrolled first year students who withdrew from each of 156 Fall 2006 courses. Variables entered in linear regression equations as predictors included the following: the program's ratio of full time equivalent students to full time equivalent faculty; the instructor's number of years of experience at the University of Guam; the presence or absence of Program-wide student learning outcomes in the course outline (coded as 1 and 0, respectively) as of Fall 2006; and the presence or absence of a program-wide assessment plan as of Fall 2006.

Separate (univariate) and combined (multiple) linear regression analyses confirmed that courses in programs responsible for larger numbers of students per FTE faculty member lost larger percentages of first year enrollees. No other variables tested reliably accounted for first year student withdrawals during the period under review. For example, first year student courses taught by instructors having more years of experience with UOG's students were no less likely to lose first year enrollees than were courses taught by less experienced instructors. Table 21 summarizes results of the regression analyses.

Table 21. Predictors of First Year Students' Withdrawals from Fall 2006 Courses

Predictor	*R*	*R* Square	*F* Ratio	*p*
FTES: FTEF Ratio	0.206	0.035	6.03	0.015
Assessment Plans, SLOs (combined)	0.105	0.011	< 1	ns
Instructor's Years of Experience at UOG	0.037	0.001	< 1	ns
All predictors combined	0.329	0.108	2.14	0.106

Note. The data indicate that courses in programs responsible for larger numbers of students per FTE faculty member lost larger percentages of first year enrollees.

Findings

This section summarizes key conclusions emerging from the analyses, and makes recommendations for increasing first year to sophomore retention at UOG, including a brief proposal for a follow-up intervention study. This section returns to the questions posed at the outset of this report, and summarizes the answers provided by the analyses.

1. Which groups among UOG's first year students were at particular risk for:
    (a) failing to achieve sophomore status ("stopping out');
    (b) academic probation, suspension, or dismissal; and/or
    (c) withdrawing from courses?

The analyses summarized in this report identified the following as groups of first year students at particular risk, during the period under study. Male Guam-based Chamorro first year students, and first year students from the Federated States of Micronesia (FSM) and Palau, were at unusually high risk for stopping out and/or losing academic good standing. Men from the FSM and Palau, and female Guam-based Chamorros, were unusually likely to withdraw from individual courses.

The analyses also provided evidence that female first year students of Filipino ethnicity were unusually likely to advance to sophomore status, to retain academic good standing, and to remain enrolled in individual courses. UOG first year students having prior experience with college-level coursework were also especially likely to advance to sophomore status and to retain academic good standing.

2. What courses of study placed UOG first year students at particular advantage or disadvantage in terms of non-retention, probation / suspension / dismissal, and/or course withdrawals, during the period under study?

Risk factors in courses of study included failing to declare a major, coursework in particular subjects (e.g., mathematics; chemistry), and programs enrolling greater numbers of full time equivalent (FTE) students per FTE faculty member.

Although these findings offer hypotheses as to predictors of non-retention among current UOG students, it is important to emphasize that the data were collected from 2006 to 2008, and that predictors of non-retention among contemporary students may differ.

Recommendations

The literature reviewed for this report, together with specific insights from Analyses 1 through 21, suggest the following additional recommendations:

- All faculty members who teach 100-level courses (and especially, courses and subjects herein identified as producing large numbers of withdrawals) could be asked to practice *proactive intervention:* identifying and contacting students who are struggling in these courses, by mid-semester; and also, to identify these students to advising staff.
- The University may benefit from remaining in contact for one to two semesters with first year students who leave the University, especially with those in groups that have been overrepresented in stop-outs, probationary cases and withdrawals. This will help the University to learn more about reasons for stopping out, and possible solutions for individuals in affected groups.
- Because first year students with prior community college- or university-level coursework were especially likely to advance to sophomore status at UOG, the University should continue to explore ways of enriching orientation for first-time enrollees, concerning the demands of university-level coursework, and enriching academic skill-building programs.

Limitations

When planning interventions, it is important to keep in mind that correlations do not establish causation: thus, knowing that a particular group of students is at risk for stopping out does not necessarily tell us *why* that group is at risk. For example, even though first year students who had declared majors were more likely to advance to sophomore status, it is possible that these first year students differed from undeclared students in other important ways, too: i.e., that other characteristics of these students may have accounted for their success, in addition to or rather than declaring the major per se. On the average, first year students who declare majors may have better developed academic skills and greater awareness of the particular skills they have, or be more ambitious and disciplined than first year students who do not declare majors. If so, and if these differences account for the greater success of declared first year students, interventions that press unskilled, unambitious or undisciplined first year students to declare majors will not correct the underlying problems.
Identifying predictors of retention and non-retention is an important first step. Interventions to assist and support first year students at risk of non-retention should be accompanied by additional studies to learn more about the other relevant ways in which first year students who attain sophomore status, retain academic good standing, and stay with the courses they begin, differ from those who do not.

Future Intervention and Research

Informed by these results, the University's administration may choose to intervene for those first year students who may face the greatest risk of non-retention, in the courses arguably most likely to impede them. Supplemental Instruction (SI) is a system for improving grades and student retention: a system that employs student leaders to plan and facilitate weekly study sessions for students in courses known to fail or drive away

many students. With training and supervision, these student leaders focus on helping students to develop effective course-specific study strategies and to review their work with others in the course, rather than simply re-teaching the material or providing prepackaged answers to students' questions. Supplemental Instruction is available to all students enrolled in the course, from the first week of the semester, as a natural extension of their work in the course (i.e., it is not 'remedial.') The Supplemental Instruction system has been employed successfully by hundreds of colleges and universities in the United States and in other countries (Stone & Jacobs, 2006; Thibodeau, 2007).

For UOG first year students, a Supplemental Instruction-based intervention could take the following form:

1. Offering Supplemental Instruction in courses and subjects at UOG identified here as "road blocks" for first year students, during the period under study: including Mathematics, Chemistry, Geography, Philosophy, Anthropology, and Biology;
2. Beginning with a pilot program, yielding data on the program's effectiveness to be made available to all faculty;
3. Given the results summarized in Analyses 4 and 8, students having experience both at UOG and at other universities, in addition to demonstrated proficiency in the subjects in question. may be especially likely to serve well as SI student leaders.

A Supplemental Instruction-based intervention along these lines will boost first year students' sense of community and involvement with the University, in addition to raising academic skills. Each of these will contribute to student retention (cf. Aitken, 1982; Tinto, 1997; University of Louisiana Presidents' Task Force, 2007).

Using Data on Retention to Inform Focus Groups

The results of the present analyses can inform focus group-based studies of retention, which in turn can inform UOG-specific elements of the design of any Supplemental Instruction-based intervention. For example, focus groups may follow up on the fact that male first year students were reliably more likely than women to identify work schedule conflicts as the reason for withdrawing from courses: discussing with participants (and men in particular) the strategies they employ to balance work with school. Focus groups may also seek to identify the particular issues in remaining at UOG, or in remaining in individual courses once enrolled, for other at-risk groups (e.g., Guam-based Chamorro men, and first year students from the FSM and Palau; Guam-based Chamorro women; respectively), in comparison with the issues for groups at lesser risk. The answers to judiciously selected questions in focus groups will help UOG to hone other interventions.

Comparisons of Financial Issues for At-risk and Lesser-risk First Year Students

The Senior Vice-President may also wish to commission a study of differences in financial status between four groups of first year students: first year stop outs; first year students who lose academic good standing; first year students who withdraw from unusually large numbers of courses; and first year students in none of the preceding categories. Key issues include the prevalence of part- or full-time employment among at-risk first year students (cf. Hezel, 2008); and gaps between available financial aid and the student's needs.

Endnotes

1. This article reports data from "females," "males," "men" and "women" due to the fact that the University's forms and records at the time the data were collected offered only binary options for students self-identifying sex.
2. Data on some potential predictors of retention, as identified at other universities, were not yet available to institutional researchers at the University of Guam, at the time of this study. For example, data on the student's financial resources, data on employment, data on the student's number of dependents, and data from surveys of student satisfaction, were either unavailable or not linkable to data on individual students' enrollments (D. Leon Guerrero, personal communication, June, 2008). The analyses reported here make use

of available data on likely predictors of failure to attain sophomore status, loss of good academic standing, and/or withdrawals from courses.

3. Note that the percentages of first year students accounted for by males and females differed from the percentages of enrollments accounted for the males and females. For Fall 2006 through Spring 2008, males accounted for 39.5% of all course enrollments, and females accounted for 60.5%. Though women outnumbered men, men typically enrolled in a slightly larger number of courses than did women.
4. At the time, UOG forms listed "Chamorro" as the option designating self-identification with the indigenous people of Guam, rather than the term "CHamoru," which is currently favored by some students who self-identify as such.
5. The chi-square statistic is not recommended for use with cell frequencies of less than five. For this reason, frequencies for categories containing four persons or fewer are summed here and in other chi-square-based analyses.
6. Men from the FSM and Palau were also disproportionately represented in stop-outs, accounting for 1% of the control sample but for 3% of stop-outs. However, the chi-square statistic cannot evaluate this difference, due to low absolute frequencies.
7. Frequencies for DODEA (5) were combined with the GED program (7) to avoid frequencies in the "Expected" column of < 5.
8. Although first year students who were graduated from the DODEA high school may be less likely to stay at UOG long enough to advance to sophomore status at UOG, this is to be expected given the highly mobile nature of military families.

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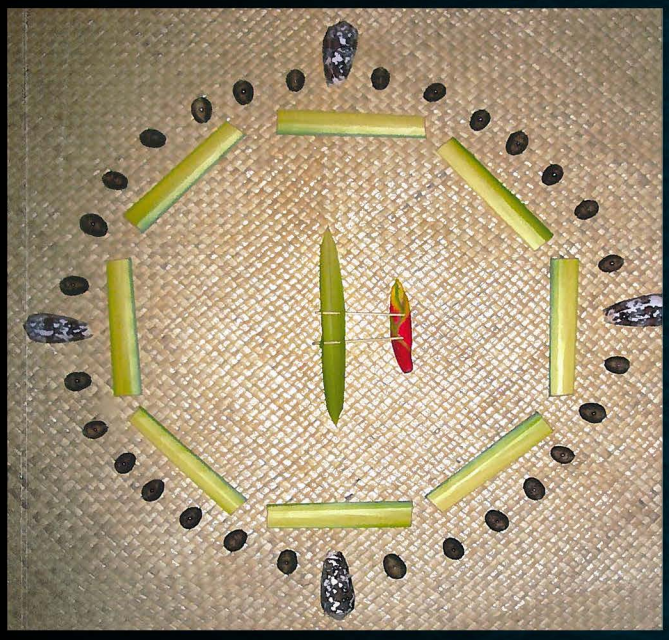

Heiwa: Heiwa is the pushing of the canoe on the unfolded mat to demonstrate how a canoe will actually sail in the ocean from the departure island to the destination island. The navigator uses one or more stars or constellations and uses the faunan etak (primary reference island) and possibly a fauan yatil (secondary reference island) in tracking the course. Heiwa is also used to explain the feeling of the canoe's movement caused by the waves and swells hitting the canoe.

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