

INTERNATIONAL FRESHMAN PERFORMANCE

International students accounted for 10 percent of the University of Oregon's freshman class in fall 2012. To learn more about them, the current study compared them to Oregon resident and domestic nonresident students on the basis of characteristics before they enrolled; how they performed academically; and what proportion graduated.



GPA,
RETENTION,
GRADUATION

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THE NUMBER OF INTERNATIONAL STUDENTS

enrolling at U.S. higher education institutions has increased dramatically in the last 20 years. U.S. institutions welcome these students as they affirm their academic reputation and their claims to provide a global experience for domestic students. But is this student group being served effectively? The increase in international enrollments begged exploration of this question from an institutional perspective. Specifically, how does the academic success of new international freshmen at the University of Oregon (UO) compare to that of their domestic peers? Are international freshmen at an academic disadvantage?

To answer the research questions, ten years of retention, coursework performance, and graduation rate data for international undergraduate students at UO were analyzed. Three groups of new first-time freshmen between 2002 and 2012 were compared: international students, students who were residents of Oregon, and students who were from other U.S. states (*i.e.*, nonresident domestic freshmen).

LITERATURE REVIEW

Researchers who focus on international students' success at U.S. colleges target a few specific areas of interest. Some consider why U.S. institutions admit students from other countries. The answer appears to be twofold: International students frequently pay higher tuition (like nonresident

domestic students at public, state-supported institutions), a clear fiscal incentive for institutions; second, institutions assume that enrolling international students provides a global learning experience that enhances U.S. students' learning (Breuning 2007).

A second area of interest is why international students seek U.S. bachelor's degrees. Even 30 years ago, as international students sought to enroll at U.S. higher education institutions, Altbach, Kelly, and Lulat (1985) presented two primary explanations: the first, *push factors*, posits that poor-quality education facilities, competition, and discrimination *push* students out of their home countries; the second, *pull factors*, posits that the U.S. colleges and universities offer good educational quality, positive learning environments, and favorable life experiences (Roberts 2009).

The third area of interest is second-language (*i.e.*, English) acquisition, a correlate of international students' academic success in U.S. undergraduate degree programs. Johnson (1988) found that lower scores on the *Test of English as a Foreign Language* (TOEFL) are negatively correlated with international undergraduate students' academic success. But Johnson (1988) also cautioned that at a certain point, TOEFL scores are *not* correlated with increased academic success. Some of these issues are included in the design of the current study, which considers the academic

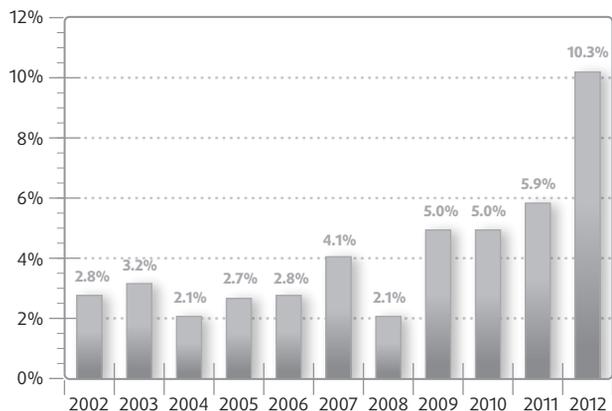


FIGURE 1. *International Students as a Proportion of New First-Time, Full-Time Freshmen (Fall Terms 2002 through 2012)*

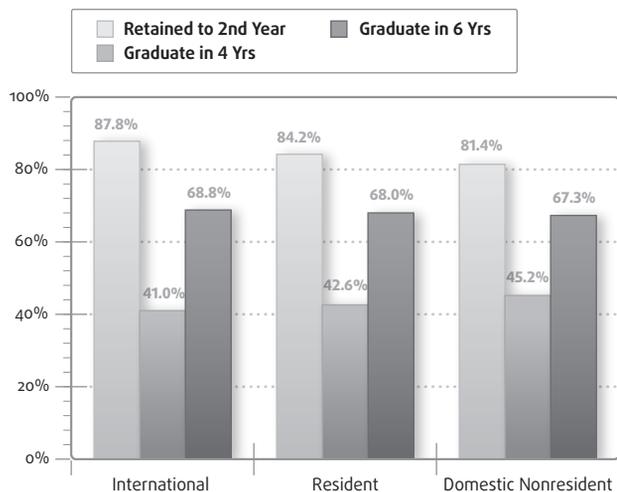


FIGURE 2. *Retention and Graduation Rates for Fall Entrants, 2002 through 2006, by Residency*

success of international undergraduate students at the University of Oregon as compared to that of their peers from the U.S.

Fass-Holmes and Vaughn (2014) assessed whether international undergraduate students struggled academically at greater rates than their domestic peers. They found quite the opposite: Although the number of international students had increased dramatically in the three years of data

used for the analysis (2009–11), Fass-Holmes and Vaughn (2014) found low percentages of students struggling academically, especially in the fields of mathematics, computer science, economics, and engineering (fields in which knowledge of English is less critical to students’ learning).

METHODOLOGY

Using 11 years of data related to first-time, full-time freshmen who entered the University of Oregon in the fall term, variables were identified from the literature that may influence the academic success and retention of international students enrolled in undergraduate degree programs at U.S. higher education institutions. Among them are their TOEFL scores, course-taking choices, earned course grades, high school GPA, university GPA, SAT/ACT test scores, annual retention rates, and four-, five-, and six-year graduation rates. Data for each variable were compared to those for domestic non-residents and Oregon residents enrolled at this Association of American Universities (AAU) member institution. For this exploratory study, analyses were conducted using frequencies, correlations, and crosstabs with chi-square tests of significance.

International students come to the University of Oregon from a variety of countries. From 2002 to 2012, a few countries—Taiwan, Japan, and South Korea—annually sent consistent but modest numbers of new freshmen (between 14 and 18). Others, like China, sent widely varying number of students. For example, between 2002 and 2006, fewer than seven students from China enrolled each year, but the number has increased steadily in recent years—to 329 in 2012 (the majority of the entire international cohort at UO that year). Most countries send only one or two first-time, full-time freshmen each fall. The total number of international students enrolling each fall at UO ranged from 65 (2.1 percent of the incoming freshman cohort) to 398 (10.3 percent of the incoming freshman cohort) between 2002 and 2012.

GUIDING RESEARCH QUESTIONS

- How does the academic success of new international freshmen at the University of Oregon compare to that of their domestic peers?
- Are international freshmen at an academic disadvantage?

FINDINGS

Retention and Graduation: Best Measures of Success

A clear pattern is evident in the graduation rates of incoming first-time full-time freshman international students between 2002 and 2006: They were less likely than their resident or nonresident peers to graduate in four years, but they were more likely than their peers to graduate in six years. This cohort of international students was also more likely than its resident and nonresident domestic peers to be retained to the spring of its first year and to return to UO for its second year.

How do the high school GPAs of UO international freshmen compare with those of domestic freshmen? Are they equally predictive of success in college?

High school GPAs have been shown to be predictive of college students' academic success, degree completion, and labor market earnings.¹ Thus, the question was considered in two ways: First, is there a significant difference in the high school GPAs of new international freshmen as compared to those of new domestic freshmen, and second, does that difference result in international students' being at an advantage or disadvantage in terms of their academic preparation for college? Table 1 shows significant differences in the high school GPAs of the three types of entering freshmen from 2002 to 2012, with international students having the lowest GPAs and resident Oregon students having the highest.

Does a lower average high school GPA mean that international students are at a disadvantage when they enroll in college? High school GPA is not standardized, so it is im-

Table 1.
Average High School GPA of New Entering Freshmen, by Residency, 2002–12

	International	Resident	Nonresident
Average High School GPA ¹	3.37	3.56	3.47

¹ All comparisons with international students were significant at p=0.001

Table 2.
Correlations for New Entering Freshmen, by Residency, of Average High School GPA, Test of English as a Foreign Language (TOEFL) Score, and First-Year GPA (Cohorts 2002 through 2012)

Correlation with First Year GPA	International ^{1,2}	Resident	Nonresident
High School GPA	0.197	0.494	0.467
TOEFL Score	0.175	NA	NA

¹ Significant at p=0.001

² Excludes students from the American English Institute who transition as new freshmen after intensive English instruction. Students who place into this program take non-credit intensive English language courses prior to enrolling in regular coursework as freshmen.

portant to also ask whether it is as good a predictor of college success for international students as it is for domestic students. Table 2 shows that high school GPA and first-year UO GPA show a significant correlation for both domestic student groups as well as for all international students, although the correlation for domestic students is greater than that for international students. The correlation describes the extent to which high school GPA predicts students' academic performance during their first year at UO.

So what does this mean? While significant in both cases, it is more difficult to use high school GPA as an effective predictor of college success for international students. Anecdotaly, there are at least two explanations for this: First, the translation of grades from international secondary schools to the American 4.0 scale is imperfect. Transcripts from international secondary schools are not calibrated to schools in U.S. Furthermore grade distributions among U.S.

¹ According to French, Homer, and Robins (2010), "In quantitative terms, we estimate that a one-unit increase in [high school] GPA leads to nearly a full category jump in educational attainment for boys and girls. Similarly, an equivalent increase in high school GPA raises annual earnings in adulthood by an estimated 12.2 percent for males and 14.1 percent for females."

Table 3.

First-Year GPA and Retention to Second Year for Students Entering in Fall 2011 and 2012, by Residency*

	International	Resident	Nonresident
Freshmen GPA ¹	2.99	3.09	3.06
Class Retained to 2nd Year (%)	89.30	85.40	85.10

¹ The sum of all GPA points divided by the sum of all GPA hours for courses taken in the first fall, winter, spring, and summer terms for first-time, full-time fall freshmen.

Table 4.

Students Who Enrolled for Their First Terms, by Residency (Fall 2002 through 2006)

	International	Resident	Nonresident
Freshmen GPA	3.05	2.97	2.98
Percent Retained to...			
Spring 1st Year	95.9	94.4	94.0
Fall 2nd Year	87.8	84.2	81.4
Fall 3rd Year	74.6	75.7	70.1
Fall 4th Year	66.4	71.8	68.6
Percent Graduated in...			
4 Years	41.0	42.6	45.2
5 Years	63.8	63.6	63.8
6 Years	68.8	68.0	67.3
Total in Cohort (n)	417	10,534	4,290

¹ International Students significantly different than Resident students for Retained to Spring, 2nd Year and 4th Year = 0.01
² International Students significantly different than Nonresident students for Retained to Spring, 2nd Year and 3rd Year and Graduated in 4 Years = 0.001

secondary schools are not calibrated to each other. Second, international student success at U.S. colleges is based not only on students' academic preparation, but also on their ability to understand English and American culture. An international student's English language proficiency is not represented by her high school GPA; rather, the best measure of English language proficiency is a student's TOEFL score, which is significantly correlated with the first-year UO GPA—a correlation not quite as strong as high school GPA at predicting performance (see Table 2, on page 5).

Do scores on the Test of English as a Foreign Language (TOEFL) and International English Language Testing Service (IELTS) predict college success?

The University of Oregon utilizes students' TOEFL scores as the primary means of assessing English language proficiency. Of the 1,648 international freshmen who enrolled at UO between 2002 and 2012, 1,341 (81.4%) submitted TOEFL scores, and 135 (8.2%) submitted IELTS scores. (International students from English-speaking countries are not required to demonstrate English language proficiency.)

TOEFL scores have a significant positive correlation with first-year international students' GPA (0.175). IELTS scores are not significantly correlated with UO GPA, but this may be attributable to the small sample size.

The TOEFL includes four subscores, for speaking, writing, listening, and reading. Recent analysis

suggests that the higher TOEFL subscores of enrolled UO students in speaking and writing are highly correlated with the students' grades during their first year at UO.² That is, English proficiency in speaking and writing is more closely correlated with international students' academic success than their proficiency in listening or reading.

² Jacobs, J. 14 February 2013. Draft analysis of entering international freshmen to support policy work of the University of Oregon Admissions Office, Office of Enrollment Management Research.

Some are concerned that international students may cheat on the English proficiency test. Testing services have anti-fraud processes in place to confirm identity, and audits occur if there is any suspicion that a student's score is not legitimate. University of Oregon staff work closely with the testing service and international students whenever such an audit is needed.

How should these results be interpreted? The correlation of international freshman students' high school GPAs and TOEFL scores with their academic success during their first year in college means that the Office of Admission's consideration of these factors is appropriate. Yet neither has the strong predictive value of high school GPA for domestic students' academic success. Nevertheless, these seem to be the best quantitative measures available for helping discern the academic preparedness of international students for UO.

Do international freshmen succeed in their first year at rates comparable to those of their domestic peers?

To answer this question, data from only the most recent UO cohorts—fall 2011 and fall 2012—were analyzed. (The demographics of international freshmen have changed dramatically over the last ten years, so it seemed advisable to focus on UO's most recently admitted students.)

The average first-year university GPA for international freshmen is lower than those for the resident and nonresident populations, yet international freshmen return for a second year at UO at higher proportions. Analysis of at-risk students typically follows the pattern that students with a lower first-year university GPA are less likely to be retained. But when International freshmen are considered separately from domestic freshmen, it is evident that international freshmen do not follow this pattern.

What is the distribution of first-year GPAs of international students? How does this compare to the GPA distributions of first-year resident and domestic nonresident students?

When analyzed by first-year GPA quintile (see Figure 3), a larger proportion of international students is less successful than their domestic peers. The proportion of international students in the three quintiles with the highest GPAs was lesser in every case than those of their resident and domestic nonresident peers. For students who performed in the "2.0 and below" range and who therefore were subject

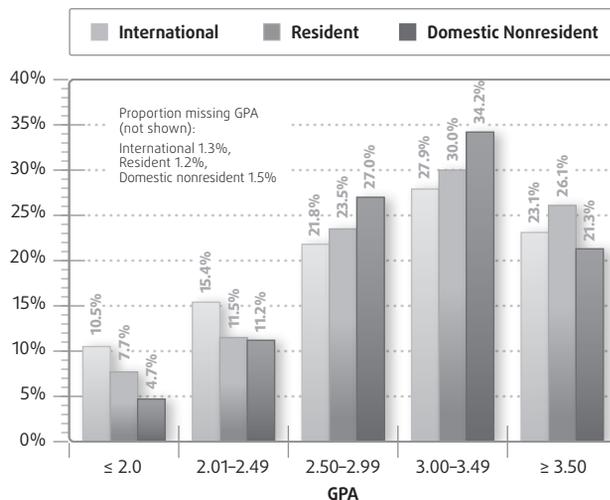


FIGURE 3. First-Year University GPA Distribution, by Residency (Fall 2011 and Fall 2012 Cohorts)

to academic probation, international students represented the largest proportion—10.5 percent of first-time full-time freshmen—compared to 7.7 percent of resident and 4.7 percent of domestic nonresident first-year students. International students also were more likely to have a first-year GPA between 2.01 and 2.49, just above the 2.0 that triggers academic probation. This suggests that as a population, international students may have greater academic difficulty, at least in their first year at UO. Nevertheless, they are persistent and retain at rates greater than those of their domestic peers (see Table 3, on page 6).

Does the academic performance of international and domestic freshmen in specific commonly taken courses differ?

Final GPAs in typical freshman courses were compared by residency—i.e., international, resident, and nonresident domestic. Course grades were included if 30 or more international students (fall 2011 and fall 2012 cohorts combined) took the course for a grade. (Despite having recorded final grades for only 28 international students, Journalism 201 was included because of the course's unique grade distribution.) Analysis was limited to the entering fall 2011 and fall 2012 cohorts (the most recent for which data were available) and to courses taken in students' first year of college. (Findings for all 26 courses are available upon request.)

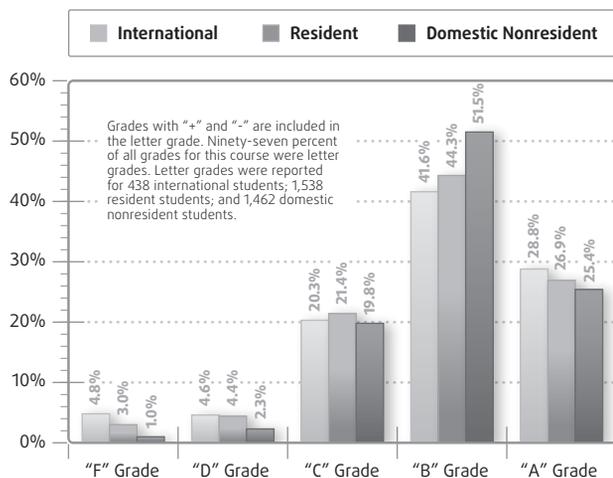


FIGURE 4. BA 101 Distribution of Letter Grades in First-Year Coursework, by Residency (2011 and 2012 Cohorts)

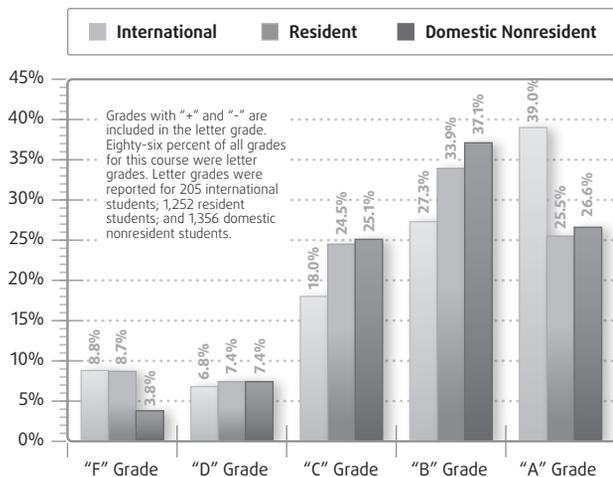


FIGURE 5. Math 111 Distribution of Letter Grades, by Residency (2011 and 2012 Cohorts)

In 13 of the 26 courses analyzed (50%), international students earned an average grade of A at the same or at a greater rate than either group of domestic peers. In fact, many international students perform at the highest levels in courses taken during their first term freshman year in which the “language” includes symbols, formulas, and/or numbers, as in music, mathematics, chemistry, and physics. International students perform less well, on average, than their domestic resident and nonresident peers in business administration, economics, education studies,

journalism, Japanese, linguistics, psychology, and writing courses, as well as two of the six mathematics courses included in the analysis.

Interesting trends among grade distributions are evident in the three most common courses in which first-year international students enroll: Business Administration 101, Math 111, and Writing 121. International first-year students enrolled in these courses were more likely than either group of their classmates, resident or nonresident, to receive a grade of A or F.

Business Administration 101 (BA101) was the course most commonly taken by international freshmen in these cohorts. Of international freshmen who took BA101 for a grade (*i.e.*, not pass/fail), 28.8 percent earned an A, compared to 26.9 percent of domestic resident and 25.4 percent of nonresident first-year students. But international students also were more likely to earn a grade of D or F than their domestic resident and nonresident peers.

In Math 111, international students did comparatively well, with 84.3 percent receiving a grade of C or better, compared to 83.9 percent of their resident classmates and 88.8 percent of their domestic nonresident classmates. International students achieved academic success just greater than that of their Oregon resident counterparts. The most notable pattern in the Math 111 grades of the different populations was the greater proportion of international freshmen who received a grade of A—39.0 percent—more than 10 percentage points higher than their domestic peers.

Fewer international students enrolled in Writing 121, the customary freshman writing course. Those who did performed well, with 95.6 percent earning a grade of C or better, compared to 96.4 percent of resident students and 97.6 percent of domestic nonresident students.

What are the four-, five-, and six-year graduation rates of international students? How do these compare to the graduation rates of Oregon resident and nonresident domestic students who also attend UO?

In reviewing six-year graduation rates, the cohorts were isolated so as to include only students who had been at UO a sufficient number of terms to graduate in the respective number of years presented in Table 4, on page 6. In other words, a student had to have been a first-term freshman in a fall term between 2002 and 2006. (The average retention rates and first-year college GPAs for each group are also presented.)

International students are retained at higher rates than their domestic counterparts through the spring of their freshman year. This is not unexpected because many likely committed to staying in the U.S. (at UO) for the entirety of the nine-month academic year. Consistent with results presented above, international freshmen are retained to the fall of their sophomore year at rates greater than those for either Oregon resident or domestic nonresident freshmen.

It is possible that international students might graduate later if, on average, they take fewer credits per term than resident or nonresident domestic students. In fact, international students enrolled in more credits, on average, in their first year—68 percent enrolled in more than 45 credits in their first year (including summer terms)—compared to only 54 percent of resident and 61 percent of domestic nonresident students. This suggests that international students have larger course loads and take more summer courses during their freshman year than their domestic peers.

Could the differences be attributed to international students transferring fewer credits from courses taken elsewhere—for example, while they attended high school (or their country’s equivalent)? Whereas 18 percent of international freshmen had transfer credit, 46 percent of nonresidents and 53 percent of residents had transfer credit. Domestic students transferred in significantly more credit; this would have helped them decrease their time to graduation.

While retention is important, graduation rates are more so and are considered one of the best measures of student success.³ International students had the lowest four-year graduation rate. However, their five- and six-year graduation rates did not differ significantly from those of their resident and domestic nonresident counterparts. What is particularly notable is that 66 percent of international students returned for their fourth year of college, yet only 41 percent graduated at the end of that year. Two years later—by the end of six years—nearly 69 percent had graduated, a slightly greater percentage (though not significantly so) than those for their resident and nonresident classmates.

This analysis indicates that international students are not at a disadvantage in terms of their ability to gradu-

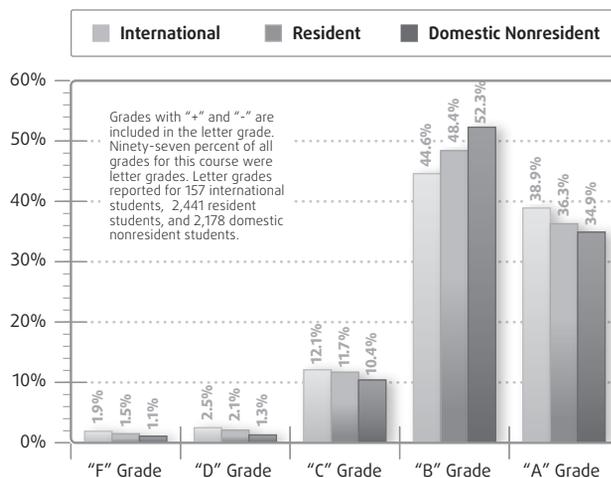


FIGURE 6. *Writing 121 Distribution of Letter Grades by Residency: First-Year Coursework (2011 and 2012 Cohorts)*

ate from UO; the complication is that the population first enrolled as freshmen at least six years prior. Evidence was provided previously for how the demographics of the international student population have changed during the past six years—change that makes it difficult to project these results onto more recent entering international freshmen. Nevertheless, it is still important to note that international students graduated at rates at least equal to those of their domestic peers who first enrolled in the fall terms 2002 through 2006.

FUTURE RESEARCH

Perhaps the most salient finding is that international students did not follow the pattern set by their domestic peers. While their journey was different, the outcomes were similar. International freshman success may be related to characteristics for which no quantitative institutional data exist—characteristics such as motivation, familiarity with U.S. culture and teaching styles, family values in support of education acquisition, English comprehension beyond that measured by the TOEFL, and individual goals, all important variables for future research on international undergraduates enrolled at U.S. higher education institutions.

³ Some suggest GPA is another such measure. We disagree. A college graduate with a 2.2 GPA is still a college graduate. Employers don't require a certain GPA but they do require a degree.

CONCLUSION

The current study asked, “Are international freshmen at an academic disadvantage compared to their resident and domestic nonresident peers?” This question proved difficult to answer. The data indicate that a traditionally at-risk population suffered from lower university GPAs as well as lower retention and lower completion rates. International students did not earn grades comparable to those of their domestic peers (2011 and 2012 cohorts), yet they performed better than their peers in terms of retention (2011 and 2012 cohorts) and six-year graduation rates (2002 through 2006 cohorts). In terms of the ultimate university outcome—graduation—international students were successful and were not at a disadvantage. It will be important to monitor the graduation rates of more recent cohorts to determine whether students continue to succeed (as measured by graduation) at rates slightly greater than those of their domestic peers.

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