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Office of Institutional Research

PREDICTORS OF RETENTION AND PROGRESSION TOWARD GRADUATION

Part 3:

Factors Predicting Second-to-Third-Year Retention and Progression to Junior Status for the 2010 Cohort

EXECUTIVE SUMMARY

The Keene State College Office of Institutional Research is engaged in a multi-part study to understand factors that predict retention and degree completion. Part 1 of the study examined the five freshman classes that entered KSC from 2006 through 2010. That study examined the pattern of first-to-second-year retention and progression to sophomore status by demographic groups. It found clear and consistent trends indicating that women, non-residents, first-generation students, racial/ethnic minority students, and low-income students may be at greater risk of first-to-second-year attrition than their classmates. However, the gaps in retention rates between these students and their classmates only rarely rose to the level of statistical significance during this five-year period. Part 1 found, further, that for retained students in the 2010 cohort, women were significantly more likely than men to attain sophomore status by their second year of enrollment, and white students were significantly more likely than students from racial/ethnic minorities to attain sophomore status by year 2.

Part 2 of the larger analysis looked more deeply at just the 2010 cohort. This cohort was selected both because it was the most recent and also because its overall first-to-second-year retention rate was equal to the mean for all the cohorts from 2006 through 2010. Part 2 considered a larger set of factors beyond the demographic categories examined in Part 1, and it used logistic regression to examine their relative value as predictors of retention and progression to sophomore status in Year 2. The findings from Part 2 were generally consistent with data from the large national *Toolbox Revisited* study (Adelman, 2006).

The present study, Part 3, continues the analysis of the 2010 cohort. It examines the predictors of retention from the second to third year of enrollment and progression to junior status. The methodology for Part 3 mimics the logistic regression analysis of Part 2. It goes back to the first year of enrollment to determine whether demographic factors and significant predictors from that year have lingering effects to Year 3, and it adds both academic and behavioral variables from Year 2 of enrollment. Unlike the Part 2 study, however, Part 3 does not include a course-level analysis. That is, no effort has been made here to identify specific courses taken in Year 2 that are predictive of retention or progression to junior status in Year 3. In the first year of enrollment, all students are required to take ITW and IQL, regardless of their intended major. In the sophomore year students begin to take courses appropriate for their major, and Adelman (2006) found that a key predictor of persistence to graduation is whether students successfully complete the gateway courses for their majors by the end of Year 2. However, at KSC students declare majors late – almost half of undergraduates are undeclared majors – so it is virtually impossible to identify the key courses for these students.

KEY FINDINGS

Second-to-Third-Year Retention

- The present analysis agrees with a key finding from the Part 2 study: that what students do is far more important than who they are in predicting retention. When demographic variables are considered simultaneously with students' behaviors in college, the college variables explain most of the variation in retention.
- Far and away the best predictor of second-to-third-year retention is entering Year 2 in sophomore status. This is consistent with the *Toolbox* findings that academic momentum is key to students' eventual graduation. With all other independent variables held constant, students who achieve sophomore status by the beginning of Year 2 of enrollment have an 87% probability of being retained to Year 3.

Progression of Retained Students to Sophomore Status

- Entering Year 2 in sophomore status is also the best predictor of a retained student progressing to junior status or higher in Year 3. With all other independent variables held constant, students who achieve sophomore status by the beginning of Year 2 and are retained to Year 3 have a 92% probability of entering Year 3 in junior status.

Implications

1. The single best thing that Keene State College can do to increase the probability that second year students will be retained to Year 3 and progress to junior status is to ensure that they earn at least 30 credits by the end of Year 1.
2. The results of this analysis are consistent with both the earlier rounds of this study and with national literature, demonstrating that success in the first year of study is the best predictor of success later in the college career. Given this finding and given the fact that almost all KSC juniors persist to the fourth year of enrollment, there is little to be gained by pursuing this longitudinal analysis for a further year.

DETAILED FINDINGS

FIRST-TO-SECOND-YEAR RETENTION

The following variables were analyzed using logistic regression to determine whether they are significantly associated with second-to-third-year retention¹:

Pre-college variables:

- Gender
- First-generation status
- Residency
- Race/ethnicity
- Low-income status (Pell Grant recipients)
- Undecided major at entry
- High school grade point average
- Expected family contribution

College variables from Year 1:

- Credit earned for ITW in Year 1 (at KSC or by transfer)
- Credit earned for IQL in Year 1 (at KSC or by transfer)
- Reported as “Student of Concern” at any time during Year 1²

College variables from Year 2:

- Undeclared major at beginning of Year 2
- Class level at beginning of Year 2
- Residence hall room change
- Serious conduct violation
- Reported as “Student of Concern” at any time during Year 2
- Number of active credits for fall and spring semesters
- GPA for fall and spring semesters
- Academic probation status

Two variables were found to be statistically significant and positive predictors of second-to-third-year retention at the level of $p < .01$:

- entering Year 2 in sophomore status, and
- not being on the Students of Concern list during Year 2.

Students who enter Year 2 in sophomore status have an 87% probability of being retained to Year 3. Because the number of sophomores on the Students of Concern list is small, staying off that list did not measurably improve the probability of being retained for students who entered Year 2 in sophomore status. However, students who meet neither of these markers – those who do not achieve sophomore status by Year 2 and who are also on the Students of Concern list – have only a 51% probability of being retained to Year 3.

¹ For the purposes of this study, students who were on leave of absence for Study Away were counted as retained.

² Students of concern are those who are referred to the Dean of Students for any serious academic, social, behavioral, or mental health issue that might threaten a student’s ability to continue successfully at the college.

Table 1 below shows the second-to-third-year retention probabilities for both of these significant predictors, with all other independent variables held constant. As this table shows, entering Year 2 of enrollment in sophomore status improves the probability of being retained to Year 3 by 14%, compared to peers who do not earn enough credits in Year 1 to become sophomores. Importantly, the value of achieving sophomore status also improves the probability of retention by 14%-15% for demographic groups that had previously been shown to be at some risk—students of color, first-generation students, low-income students, and students who were Undecided at entry—just as it does for their classmates who are not in these groups.

Table 1
Probability of Retention to Year Three for Students in Significant Predictor Groups

| Variable | Probability of student IN this group being retained | Probability of student NOT in this group being retained | Change in probability of retention associated with being in the group |
|---|---|---|---|
| Entered Year 2 in Sophomore Status | 87% | 73% | 14% |
| NOT on Students of Concern List | 84% | 67% | 17% |
| Entered Year 2 in Sophomore Status AND NOT on Students of Concern List* | 87% | 51% | 36% |

**Note: The comparison group on this line of the table is students who are not at sophomore status or higher by the beginning of Year 2 and also are on the Students of Concern list in Year 2. Students who have only one of these risk factors are not included in the comparison on this line of the table.*

PROGRESSION OF RETAINED STUDENTS TO JUNIOR STATUS

This study next considered whether retained students had earned enough credits in their first two years of study to progress to junior status by the beginning of Year 3. To identify predictors of progression in status, the regression analysis was rerun using all the same predictor variables, this time considering only retained students and predicting whether the student returned to KSC in Year 3 in junior status or higher. Three variables were found to be significantly and positively predictive of progression to junior status at the level of $p < .001$. They were

- entering Year 2 in sophomore status,
- number of credits in fall semester,
- fall semester GPA of at least 2.0,

(Spring semester credits and grades were not considered in order to focus on fall-to-fall retention.)

By far the best predictor is entering Year 2 in sophomore status. With all other independent variables held constant, there is a 92% probability that a retained student will enter Year 3 in junior status or higher, if she or he was a sophomore at the beginning of Year 2. The probability of a retained student “catching up” to junior status by Year 3 if he or she has not attained sophomore status by the beginning of Year 2 is only 43%. While the number of fall credits and fall grade average are also statistically significant predictors, adding them to the equation only improves the predictive ability of the model by 1%, so as a practical matter the status of a student at the beginning of Year 2 is the only useful predictor of class level in Year 3 identified in this study.

REFERENCE

Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school through college*. Washington, D.C.: U.S. Department of Education.