

Eastern Connecticut State University submission for the Promising and Practical Strategies to Increase Postsecondary Success program

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Predictive analytics to target appropriate resources to at-risk students

Analysis of three cohorts of Eastern Connecticut State University's incoming first-time full-time students indicated that while 31% were not retained over a two year period, only 8% dropped out and of this group almost half had a GPA over 2.0. Twenty-two percent, the majority of those not retained, transferred to another college or university and almost 90% of these students had GPAs over 2.0. The remainder "stopped out," returning to Eastern within one year. These findings indicate that poor academic performance was not the primary reason for most students leaving Eastern and that tutoring and academic support services were not likely to be sufficient to improve retention. Using predictive analytics students are now sorted into four Targeted Advising Cohorts (TAC) based on their likelihood and probable reason for leaving Eastern and are provided with differing support services depending on their assigned TAC. The objective is to improve retention and graduation through more targeted use of available resources.

Beginning in 2007, Eastern Connecticut State University made a significant commitment to improving retention. Logistic regression models were used to identify demographic variables that are associated with high levels of attrition. This model was used to place students into risk quintiles with students in the quintiles with highest risk of attrition receiving targeted advisement and tutoring services aimed at bolstering their academic performance. Variables that were most correlated with lower levels of persistence included first generation status, minority status, Pell eligibility, and residing west of the Connecticut River.

The impact of providing targeted academic support services on retention of students identified using these variables were disappointing, although extraordinary economic conditions confound the analysis. As a result, in summer of 2010 a thorough analysis was conducted of students who leave Eastern. The findings indicated that only between five and six percent of first-time full-time students leave Eastern with GPAs below 2.0. Most students who drop out or transfer leave Eastern with acceptable GPAs. Poor academic performance did not explain most of the attrition and, as a result, attempts to retain these students by focusing on their academic performance were not likely to be as successful as hoped.

A new approach to categorizing students based on a combination of risk of leaving Eastern and risk of poor academic performance was developed. Using both dimensions students are now categorized before the Fall semester begins into four TACs. Student at high risk of attrition and high risk of earning a GPA below 2.0 are placed in TAC 1. These students received targeted tutoring, "intrusive" advising, and engagement services. Students at high risk of earning a GPA below 2.0 but without the characteristics that point to high rates of attrition receive intensive tutoring combined with advising services that are

less aggressive than those provided to students in TAC 1. Students who are likely to earn high GPAs but who have characteristics associated with high rates of attrition are in TAC 3. They receive services focusing on engagement. The remainder of students are placed in TAC 4 and while they are monitored, specific support services are not targeted to this group through the Academic Services Center. Most of these students have declared a major upon entry to Eastern and their academic departments are encouraged to take steps to bond with them.

Once the semester begins, new information is used to change students' TAC assignments. For example, all students are expected to complete library orientation. Evidence showed that students who do not complete this program are less likely to be retained (possibly because this behavior reflects their "rules orientation" and not because the information gained was so critical to academic success in the first semester). These students are automatically moved into a new TAC that reflects the greater need for monitoring and advising. First semester grades are used to move students into new TACs for the second semester as is information about students gained through the Academic Performance Notification process that faculty can use to report poor attendance or other concerns about a student.

This new system of categorizing students and providing different services to students depending on their TAC assignment is aimed at ensuring that students receive the services that are most appropriate. It allows for more effective use of limited resources. Students who are likely to leave Eastern, but for purely financial reasons, are no longer targeted with the same services as those who are likely to leave because of poor academic preparation. Instead, their advisor ensures that they meet with staff from Financial Aid, student employment, the office that oversees the scholarship process, and the Bursar. Students who were considering leaving Eastern for non-academic reasons are more likely to receive support that will encourage them to remain, whether that is information about individualized majors, options for residence halls, or an opportunity to work on challenging research projects over the summer with faculty members. Available tutoring services are now directed to those students for whom academic performance is most likely to be a cause for attrition.

This program has been conducted for the first time in 2011-2012 and so there is no data yet that can be used to evaluate its effect on retention and persistence. Using first-semester grades along with TAC assignments the five percent of current first year students most likely to drop out with GPAs below 2.0 have been identified. They are receiving highly intrusive advising, tutoring, study skills, supplemental instruction and other services. Without the new approach to categorizing students, available resources would have been too strained to be used in this way. By optimizing the use of various resources and services Eastern estimates that retention will rise by two percentage points, from 76% to 78% for the Fall 2011 first-time full-time cohort and will continue to improve by 2% annually for up to 5 years as the model is refined. This approach could be easily implemented on other campuses.

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