

UNIVERSITY LEADERSHIP COUNCIL



Using Data to Identify At-risk Students and Develop Retention Strategies

Custom Research Brief

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I. Research Methodology

Project Challenge *Leadership at a member institution approached the Council with the following questions:*

Identifying Areas of Improvement for Retention

- What is the average retention rate at contact institutions? How do other administrators define retention?
- What metrics do administrators use to benchmark retention (e.g., Fall to Fall retention, four-year graduation rate, six-year graduation rate)?
- How do administrators use data to identify at-risk students based on demographic factors (e.g., gender, ethnicity, international students, and financial need)?
- How do administrators use data to identify at-risk students based on their student profile (e.g., tuition-free students, students in specific majors, or student-athletes)?
- What metrics indicate that these students are at risk of withdrawal (e.g., grades, language proficiency)?
- Are there any segments of the student population that administrators exclude from retention data?
- How do administrators determine what factors present impediments to student success (e.g., hold focus groups with at-risk students, analyze NSSE survey data)?
- What are other institutions' retention goals? How did administrators identify those goals?

Centralizing Access to Retention Data

- What offices collect retention data (e.g., academic units, admissions offices)? How do administrators centralize retention data?
- What retention software do administrators use (e.g., Starfish Retention Solutions™ or Student Early Alert Systems)? Was it developed internally or purchased from a third-party vendor?
- How did administrators implement retention software? Did administrators task the IT office with integrating retention data into the software program or did the vendor provide staff who integrated data into the software program?
- How much have administrators invested in retention software? What was the implementation timeframe? Are administrators satisfied with the investment?

Analyzing the Effectiveness of Retention Strategies

- How effectively do data systems help administrators identify at-risk students?
- What strategies have administrators implemented to increase student retention among at-risk populations? What success have institutions achieved by implementing these strategies?
- Have retention rates increased in the last ten years?

Project Sources *The Council consulted the following resources for this report:*

- Education Advisory Board's internal and online (www.educationadvisoryboard.com) research libraries
- National Center for Education Statistics [NCES] (<http://nces.ed.gov/>)



Research Parameters

The Council interviewed institutional effectiveness administrators at the following institutions:

A Guide to Institutions Profiled in this Brief

Institution	Region	Classification	Approximate Total Enrollment	Type
University A	South	Research Universities (high research activity)	14,900	Private
University B	Mid-Atlantic	Research Universities (high research activity)	7,000	Private
College C	Mid-Atlantic	Baccalaureate Colleges--Diverse Fields	1,000	Private
University D	South	Doctoral/Research Universities	9,100	Private

Source: National Center for Education Statistics

A Guide to Organizations Profiled in this Brief

Organization	Region	Description
Consortium Alpha	South	A consortium of two- and four-year higher education institutions that collects and publishes retention benchmarking data. Additionally, the consortium facilitates retention best practice exchange between members.

Source: Consortium Alpha

Definition of Terms

In this report, *student retention team* refers to senior administrators, such as the vice president of institutional effectiveness, registrar, director of academic success centers, and provost, who serve on retention taskforces at all profiled institutions. The term also refers to support staff for these administrators.

In this report, *at-risk students* are those who administrators or faculty identify as more likely than typical students to withdraw from the university before they graduate.

II. Executive Overview

Key Observations Administrators primarily use fall-to-fall retention rates and focus on freshman retention. Retention teams at most institutions seek to increase institutional retention percentages from the mid-eighties to low-nineties. To increase retention percentages beyond the low-nineties requires extensive financial resources and more selective admissions.

Student retention teams use probability models that identify individual students at-risk of withdrawing rather than identify at-risk student subpopulations (e.g., minority or first-generation students). Statistical models identify students who are at risk of withdrawing because of academic, social, or financial difficulties. Most retention efforts focus on assistance for students that may withdraw for academic reasons.

Retention teams at all profiled institutions use predictive models that incorporate admissions data to assess incoming students' likelihood of returning the following year. Most institutions predict incoming freshmen GPA for their first-year; staff at **University A** give incoming freshman a score from one to 100 to assess the likelihood a student will retain. Administrators there categorize students with scores below the institution's retention rate of 88 percent as at-risk.

Retention teams across profiled institutions use student engagement surveys, such as the National Survey of Student Engagement (NSSE), Noel-Levitz surveys, or internally developed surveys, to identify at-risk students. The retention team at **University D** conducted phone interviews with about 40 students who withdrew to understand what factors caused them leave.

Contacts at most institutions use and recommend vendor-provided retention software to centralize and codify retention data across various offices that generate data. Administrators should prioritize the following considerations when evaluating retention tools:

- Is the system easy for faculty to use?
- Does the system integrate seamlessly with learning management tools like Blackboard Learning Systems?
- Does the software incorporate more factors than course grades for faculty and staff to identify at-risk students?

Retention teams typical refer academically at-risk students to academic success centers, which then triage students to appropriate support services as needed. To further address at-risk student needs (e.g., social and financial challenges), administrators can alter housing policies to keep all freshmen together, provide performance-based scholarships to financially at-risk students, and proactively refer first-generation students to financial aid counselors.

III. Retention Rates

Retention Metrics *Administrators Primarily Reference Fall-to-Fall Retention*

Retention teams primarily reference fall-to-fall retention rates and focus on freshman retention to the following year. The retention team at **College C** focuses on student success rates, defined as the percentage of students who maintain a GPA equivalent of a C or higher. To evaluate student success, the retention team references metrics such as:

- Percentage of students in good academic standing (i.e., a GPA of 2.15 or higher)
- Percentage of students who regain good academic standing after administrators place them on probation
- Aggregate campus GPA
- Percentage of students in academic probation

Most profiled institutions maintain retention percentages that range from the low- to mid-eighties. Retention rates for these institutions have remained mostly static over the past ten years. Contacts at **Consortium Alpha** note that mid-sized, selective, private institutions typically maintain retention percentages around the high-seventies.

Goal of Retention Rates Around the Low-nineties

With the exception of **College C**, retention team members seek to increase retention percentages from the mid-eighties to low-nineties. To surpass the low-nineties would require significant financial investments and more selective admissions processes. Administrators at most institutions will not significantly increase funding for retention initiatives unless rates drop substantially or endowment funds increase.

Retention Rates for Mid-sized, Selective, Private Institutions

Average Retention Rate at Profiled Institutions

Institution	Retention Rate	Retention Rate Goal
University A	Between 1987 and 2011, retention rates ranged from 81 percent to 87 percent.	90 percent
University B	Retention rates for the last few years have hovered around 80 percent.	90 percent
College C	Before retention initiatives began three years ago, rates ranged from 45 to 50 percent. Data is not yet available for the overall graduation rate.	Information Unavailable
University D*	Administrators implemented a retention initiative in 2004 that increased retention from 82 percent to 87 percent.	90 percent

* Contacts at **University D** explain that recent increases in retention may be the result of increased selectivity at the institution rather than retention initiatives.



IV. Identification of At-risk Students

Categories of At-risk Students

Student retention teams prioritize statistical models that identify individual at-risk students rather than focus intervention on entire student subpopulations (e.g., minority or first-generation students). Contacts at **College C** advise against maintaining multiple retention strategies for student subpopulations because staff and faculty become confused about where to refer at-risk students and where to report data. No retention teams employ strategies specifically for tuition-free students (i.e., those whose parents are employees) because they represent too small of a subpopulation.

At-risk Students Fall into Three Categories

Retention teams sometimes identify student demographics for which they hope to enhance support services (e.g., veterans or first-generation students). They do not, however, label all students in a demographic category as at-risk. Retention teams group at-risk students into three categories:

- 1) Students who encounter academic challenges
- 2) Students who do not engage socially in the campus community
- 3) Students who encounter financial challenges

Academically At-risk Students

Develop Predictive GPA Models

Administrators at all profiled institutions use predictive models to assess the likelihood that incoming students will return the following year. Most administrators predict students' GPAs on the following schedule:

- **Beginning of Fall Semester:** This prediction includes variables such as high school GPA, SAT scores, and national ranking of the student's high school.
- **After Fall Mid-term Grade Submission:** This prediction prioritizes mid-term grades but also includes above-mentioned admissions data.
- **Beginning of Spring Semester:** This prediction prioritizes fall semester grades but also includes above mentioned admissions data.

Categorize Students with Predicted GPAs of 2.0 to 2.15 as At-risk

Administrators identify students predicted to achieve a GPA ranging from below 2.15 to below 2.0 as at-risk and flag them for interventions. Retention team members at **College C** typically predict with 70 percent accuracy which students will achieve a GPA below 2.15 after freshman year.

Run Models Six Weeks into Fall Term

Academic leaders at **University A** shifted the timeframe for faculty to submit mid-term grades from eight weeks to six weeks. They found that creating predictive models eight weeks into the term did not allow faculty and staff enough time to assist at-risk students before fall semester ended.

Predict Retention Likelihood Rather than GPA

The Retention Action Team at **University A** uses a model that gives incoming students a score between 0 and 100; students who score below the university's average retention rate of 88 are identified as at-risk. The model incorporates admissions variables such as high school GPA, SAT score, first-generation student status, and credit load.

Mandate Faculty Report At-risk Students

With the exception of **University A**, the provost at all profiled institutions mandates that faculty report at-risk students to the retention team or the academic advising center. The provosts at **University B** and **College C** also require that faculty track and report absences in freshman courses. Faculty use the following indicators to determine if a student is at-risk:

- More than three absences
- Symptoms of personal issues (e.g., sleeping in class)
- Failure to submit important assignments
- Low or erratic grades on assignments

Use Academic Leaders to Convince Faculty to Report At-risk Students

If certain faculty members fail to identify at-risk students or report absences, retention team members contact the provost or dean of undergraduate education's office. The provost or dean of undergraduate education sends an email to the department chair of the recalcitrant faculty member; the chair then contacts that faculty member in-person and encourages him or her to report at-risk students. Although the provost at **University A** does not mandate that faculty report at-risk students, the dean of the college of arts and sciences contacts faculty who teach freshman courses and do not report at-risk students.

Use of Surveys

Administrators across profiled institutions use student engagement surveys, such as National Survey of Student Engagement (NSSE) or internally developed surveys, to identify academically at-risk students. Surveys include quantitative ranking questions and qualitative questions, such as open-ended questions about student instructor interaction. Graduate students synthesize the data for senior administrators. The director of institutional research at **College C** found that students who score low on five of the six academic factors outlined in Noel-Levitz student engagement survey are more than 500 percent likelier to withdraw than the average student.

Sample Survey Questions to Identify At-risk Students

- Would you recommend **University D** to a friend from your hometown? Why or why not?
- On a scale of one to ten, how challenging is your current course load?
- Do you feel there are adequate support services if you are having trouble in a course? Why or why not?

Conduct Phone Surveys with Students Who Withdraw After Freshman Year

The student retention taskforce at **University D** conducted a telephone survey in 2005 to understand what academic and social factors distinguish students who return as sophomores from students who withdraw. Staff spoke with about 40 students who withdrew and found that most students did not return because of financial aid problems, housing difficulties, or dissatisfaction with the prevalence of Greek life on campus.

Socially Disengaged Students

Create Models that Assess Predicted Retention Based on Students' Co-curricular Involvement

Undergraduate students withdraw more often for social reasons, such as lack of engagement in co-curricular activities or unsatisfactory housing experiences, than academic reasons. Contacts at **University D** report lack of social engagement in the campus community as the most significant impediment to higher retention rates. Student retention teams at **University B** use Chi-squared Automatic Interaction Detection (CHAID) analysis, a type of decision tree analysis, to determine the likelihood that students will return to campus based on social engagement factors. These factors include participation in co-curricular activities, an honors college, and athletics. Students involved in more of these programs retain at a higher rate. The team also conducts CHAID analysis to evaluate academic and financial factors.

Avoid Club Sports and Organization Rosters as Factor

Student retention teams should not prioritize club sports or organization rosters when they compile social engagement factors. Club or organization rosters often include many students who sign up but rarely or never attend meetings.

Students with Financial Challenges

First-generation students and students with high unmet financial need are most at risk of withdrawing for financial reasons. First-generation students often fail to apply for available federal financial aid because their parents likely do not have experience applying for financial aid. Often, students with high unmet need decide that a bachelors degree is not worth accruing student loan debt. Administrators at **College C** focus on these students in interventions because many perform well academically and socially but simply cannot afford to remain at the institution.

V. Centralization of Retention Data

Retention teams at most institutions use a vendor-provided retention tool such as Starfish™ or MAP-Works. At **University A** and **University D** a full-time staffer coordinates retention data between faculty who report at-risk students and offices that provide student success support (e.g., academic advising or student affairs). Investment in such a tool has enabled administrators to increase retention.

Coordination of Offices that Use Retention Data

Convene Office Directors to Modify Business Processes

After multiple failed retention initiatives, the director of institutional research at **College C** met with directors of offices that use gather and use retention data. At these meetings, directors discussed when they need information about at-risk students, what they do with the information, and what processes they have to assess the effectiveness of interventions with at-risk students. The director of institutional research uncovered several failures of communication in which one office would receive notification of an at-risk student too late in the semester to assist the student. Simply bringing all directors together helped administrators improve how they manage retention data.

Directors Who Collect and Reference Retention Data

- Director of financial aid
- Director of institutional research
- Director of academic advising centers
- The registrar
- The bursar
- Dean of students
- Director of residence life
- Director of activities
- Director of admissions

House Retention Data in Registrar's Office

The registrar's office maintains retention data along students' entire time in college, from admissions data pertinent to course placements to final transcripts of students who graduate. Therefore, contacts recommend that staff in the registrar's office collect and synthesize retention data or coordinate closely with counterparts in the institutional research office to centralize data.

Create a Small Retention Team of Senior Administrators

Administrators experience the most success with retention strategies when they create a small taskforce of senior administrators from offices that use retention data. Four to five senior administrators serve on these taskforces. The provost at **University A** created a large team of faculty and administrators focused on increasing the retention rate from the low eighties to the low nineties. The large taskforce generated interest and support from faculty but made few substantive decisions due to its size. The provost then convened a smaller taskforce composed of the following:

- Vice provost of institutional effectiveness
- Assistant vice provost for academic enrollment
- Director of activities
- Student financial aid director
- Dean of campus living and learning

This new taskforce implements strategies to identify and assist at-risk students; it taskforce also selects retention data management vendors.

Document All Actions Taken to Assist At-risk Students

Staff should receive training on how to properly document all actions they take to notify and assist at-risk students. Contacts at **Consortium Alpha** explain that faculty notify pertinent offices of an at-risk student at much higher rates if faculty can observe subsequent action from student support staff (e.g., academic advising or student services staff). Administrators cannot effectively track which interventions increase retention without proper documentation of how staff intervene to help students.

Retention Software Providers

Contacts at most institutions recommend that administrators purchase vendor-provided retention software that collects data from various offices and centralizes it. No profiled institutions internally develop this software; this would require administrators add programmers or divert resources from IT offices. Vendor services also provide technical assistance and create platforms that faculty can use easily. Contacts do not know details about implementation logistics and note that implementation costs vary by institution. Contacts at **College C** estimate the timeframe from purchase to faculty use of Starfish to be around six months.

Vendor Software Standardizes Retention Definitions

Contacts at **Consortium Alpha** explain that vendor-purchased retention software codifies and standardizes definitions of an at-risk student across the many offices that identify at-risk students. This reduces miscommunication among offices that help students regain good academic standing.



Questions to Consider When Evaluating Retention Software

Considerations	Description	Retention Software Contacts Cite as Possessing the Quality
Is the system user-friendly?	The program should be an intuitive platform that allows faculty to quickly input notifications.	Starfish™ MAP-Works Hobsons Retain
Does the system incorporate more than course grades as options for flagging at-risk students?	The notification system should not only allow faculty to flag students with low grades but also provide options to flag students who encounter social, personal, or financial challenges.	MAP-works Starfish™ Early IQ
Does the system integrate with learning management platforms?	Retention software should seamlessly collect data from learning management programs like Blackboard Learning Systems so faculty and staff do not need to input data twice.	Starfish™ Hobsons Retain

Implementation of Starfish Increases Student Success

Administrators at **College A** implemented Starfish three years ago and experienced the following gains in student success metrics:

- The percentage of students suspended after academic probation dropped by half.
- The number of student GPAs above 2.15 increased by seven percent.
- The number of students on academic probation decreased by 41 percent.
- Retention rates for sophomores returning as juniors increased by nine percent.

VI. Assistance for At-risk Students

Strategies for Academically At-risk Students

Academic Success Center Triage At-risk Students

Retention team members primarily refer academically at-risk students to academic success centers. Contacts advise against the development of many programs aimed at different student subpopulations because faculty and staff will not know where to refer at-risk students. Rather, faculty and staff should refer all at-risk students to the student success center, where advisers are trained to triage students depending on the student's challenge.

Refer Students with Low Predicted GPAs to the Academic Success Center

Students whose admissions data indicates a low predicted GPA receive emails from counselors in the academic success center and their academic advisor that encourage them to visit the academic success center. Resident assistants at **University B** meet with students in-person and encourage them to visit the center. Administrators do not inform resident assistants of the student's low predicted GPA and only give resident assistants a list of students to contact, so as not to violate the confidentiality of student admissions data.

Approaches for Socially Disengaged Students

Alter Housing Policies to Prioritize Freshman

Retention team members at **University D** discovered that freshman who do not receive housing with other freshman withdraw from the institution at a much higher rate regardless of academic or financial factors. Freshman who live among more senior students cannot form friendships easily and often decide that the institution is not a strong fit for them. Administrators have revised housing policies to keep freshman in the same buildings; some upperclassmen residence halls contain sections of freshman housing.

Assistance for Students At-risk of Leaving for Financial Reasons

Offer Performance-based Scholarships

The financial aid office at **College C** awards academic scholarships to students who succeed academically but have high unmet financial need. Students receive, \$500 for a cumulative GPA of 2.0 to 2.5, \$1000 for a cumulative GPA of 2.5 to 3.0, and \$3,000 for a cumulative GPA of 3.4 or higher. Administrators at **University D** modified academic scholarship policies to include more students with high unmet financial need in an effort to increase their retention.

Encourage First-generation Students to Meet with Financial Aid Counselors

First-generation students often fail to identify and apply for all the financial aid available to them. These students withdraw at higher levels because they do not fully recognize the value of a four-year degree and do not obtain all available financial aid. Financial aid counselors should contact these students and set up an appointment to ensure they have applied for all available financial aid.