

The Bottom Line on Student Retention: Data-Driven Approaches that Work

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310



Overview of Presentation

- Undergraduate Retention: Context and Overview
- Improving Retention: A Data-Driven, Best Practices Approach
- Sample Responses/Initiatives
- Conclusions
- Questions / Discussion



Undergraduate Retention: Context and Overview

- Retention is a national higher education problem
- Students who leave before graduation represent a lost revenue stream
- Replacement strategies can be costly and inefficient

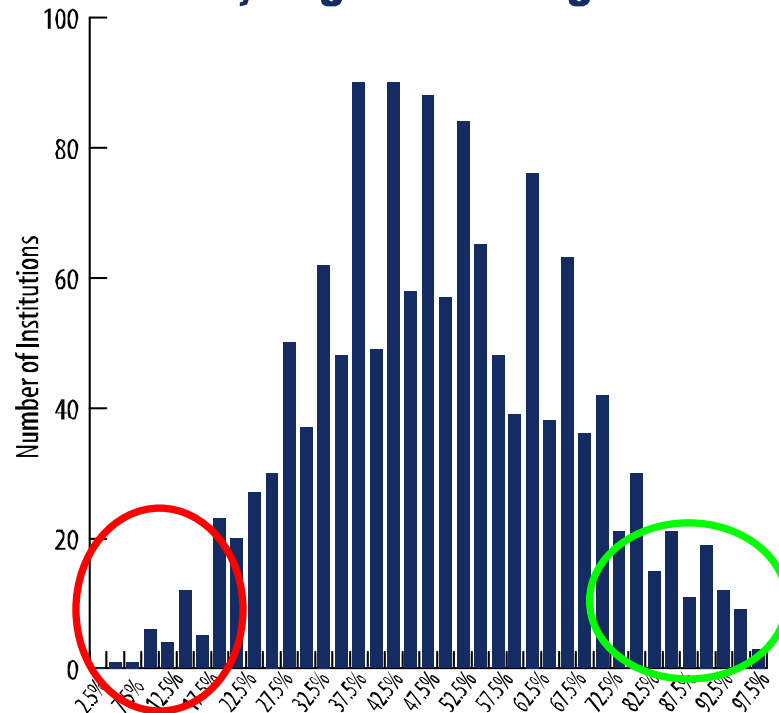
Current College Completion Rates: 4-Year Colleges

- Approximately 4 in 10 entering freshmen obtain a bachelor's degree within 4 years.
- Within six years of entry, that proportion rises to about 6 in 10.
- If you go further, to look at graduation from ANY institution, numbers grow to about two-thirds.

Graduation Rates Vary Widely Across the Nation's Postsecondary Institutions

Chart 6

Six-Year Graduation Rate, Entering Class of 1996 Full-Time, First-Time, Degree Seeking Freshmen



Source: U.S. Department of Education, National Center for Education Statistics Integrated Post-Secondary Data System (IPEDS), Graduation Rate Survey, 2002.



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- Some of these differences are clearly attributable to differences in student preparation and/or institutional mission. But not all...



College Results Online



Welcome to College Results Online

The Education Trust is a national nonprofit that works for the high academic achievement of all students at all levels – pre-kindergarten through college

This interactive Web tool, created by The Education Trust, allows you to learn more about student graduation rates at four-year colleges and universities.

[ENTER COLLEGE RESULTS ONLINE >>](#)

College Results Online allows you to:

- » Examine overall graduation rates and see how those rates have changed over time
- » Learn about universities' records graduating diverse groups of students
- » Compare the graduation rates of similar institutions - colleges and universities that share many characteristics and serve similar student populations

Our information is drawn from the nation's most comprehensive database of institution graduation rates, the U.S. Department of Education's Graduation Rate Survey.

College Results Online demonstrates that similar schools have vastly different rates of success with similar students.



Additional Resources

Recent Education Trust reports

- » Reports and analyses of graduation rates

Other Web sites with related higher education data

- » The National Center for Public Policy and Higher Education's national report card on higher education
- » National Center for Education Statistics' College Opportunities Online
- » National Information Center for Higher Education Policymaking and Analysis



Research Institutions

Similar Students, Different Results

	Median SAT	Size	% Pell	% URM	Overall Grad Rate	URM Grad Rate
Penn State University	1,190	33,684	18.5%	7.4%	84.2%	68.8%
University of Wisconsin	1,260	27,869	13.7%	5.9%	76.7%	57%
University of Washington	1,200	24,540	23.2%	8.7%	74.3%	63.7%
Purdue University	1,145	30,579	18.4%	6.6%	66.4%	52.4%
University of Minnesota	1,165	28,910	18.4%	7.2%	60.7%	41.4%

Source: College Results Online 2005 data



Masters Institutions – Large Similar Students, Different Results

	Median SAT	Size	% Pell	Overall Graduation Rate
University of Northern Iowa	1,045	10,167	26.5%	65%
Montclair State	1,045	10,664	27.1%	58.3%
Western Illinois	990	10,639	28.9%	55.4%
University of Wisconsin Whitewater	1,030	8,844	21%	50%
Southern Illinois Edwardsville	1,045	9,803	29.1%	44.8%

Source: College Results Online 2005 data



Some Important Lessons

- They look at their data and act.
- They follow best practices like early warning system and academic support sessions.
- They assign clear responsibility for student success.

From Kati Haycock, President of The Education Trust

Improving Retention: A Data-Driven, Best Practices Approach

- The Danger of the Anecdote
 - Some things are easier to admit than others (“I can’t afford it” versus “I’m homesick”).
 - Patterns are difficult to discern and so interventions aren’t targeted.
 - The voices of those that drift away aren’t heard.

Advantages of a Data-Driven Approach

- Enables patterns to become clearer
- Supports targeted interventions
- Provides clear answers to key questions
 - How can we identify at-risk students?
 - How can we know what is working?
 - What gaps do we need to address?
 - Where are they going when they leave?

Step One: Project Team and Preliminaries

- Multi-disciplinary team
(CFO/budget, financial aid, admissions, academic affairs, institutional research, student life, information technology)
- Project timeline
- Budget

Step Two: Assemble and Review “Off-the-Shelf” Research

- Descriptions of existing retention-related initiatives
- National survey research
- Institutional surveys/exit interviews
- General enrollment/retention trends

Step Three: Commission New Research/ Update and Augment “Old” Research

- Table analysis
- Predictive modeling
- National Student Clearinghouse
- Custom surveys
- Benchmarking
- Interviews & focus groups

Table Analysis

- Build a cohort data file
 - Financial aid information
 - Entry (admissions) statistics
 - Program area or major
 - Gender
 - Grade point average
 - Ethnicity
 - Other categories: Honors Program, Recruited Athlete, Disadvantaged, etc.



Sample Table Analysis I

Retention of Aided and Non-Aided Students by Academic Area					
College	A&S	EDUC	ENGIN	NURS	ALL
Entering Cohort					
2004 (Retain to Term 5)					
Non-Aided	72%	94%	68%	0%	73%
Aided	76%	82%	81%	88%	78%
2005 (Retain to Term 5)					
Non-Aided	73%	71%	79%	67%	73%
Aided	82%	84%	89%	86%	83%
2006 (Retain to Term 3)					
Non-Aided	83%	100%	83%	75%	84%
Aided	88%	93%	91%	90%	89%

Sample Table Analysis II

Freshman to Sophomore Retention of Freshman Cohorts (2001-2006) by Need Level

	Term 1	Term 3	
No FAFSA	1141	673	59.0%
\$0 (No need)	664	513	77.3%
\$1-\$10,000	514	391	76.1%
10,001-16,000	535	403	75.3%
\$16,001-\$22,000	694	503	72.5%
\$22,001-\$28,000	1112	803	72.2%
>\$28,000	1002	714	71.3%



Predictive Modeling

■ Goals

- Identify factors important in the re-enrollment decision (holding other factors constant) using multiple logistic regression analysis
- Develop targeted intervention strategies

What is Predictive Modeling (or Multiple Logistic Regression)?

- Multiple Logistic Regression, is a statistical procedure used for the inference, prediction, and modeling of causal relationships.
- In a retention model, for example, the probability of re-enrollment for each student is determined as a function of individual student characteristics appropriate for the institution.
- Probability that a student will enroll = f (student need, major, SAT, etc.).

Sample Predictive Retention Model I

Variable	Coefficient (impact on probability of retention to Term 3)	Description
Total Grant	+0.5%	For every \$1000 increase in total grant a person is .5% more likely to retain to Term 3
Unmet Need	-0.5%	For every \$1000 increase in unmet need a person is .5% less likely to retain to Term 3
Term 1 GPA	+14.2%	For every 1 point increase in GPA (2.0 to 3.0) a person is over 14% more likely to retain to Term 3
Term 1 GPA < 1.75	-25.6%	Students with a Term 1 GPA < 1.75 are over 25% less likely to return to Term 3 than students with a Term 1 GPA > 1.75
In-State	+7.0%	In-state students are 7% more likely to retain to Term 3 than out-of-state students
Special Admits	-8.3%	Special admits are over 8% less likely to retain to Term 3 than regular admits
Engineers	-11.0%	Engineers are 11% less likely to retain to Term 3 than A&S students
Commuters	-5.0%	Commuter students are 5% less likely to retain to Term 3 than resident students



Possible Interventions Based on the Model

- Special tutorial program for anyone with a < 1.75 Term 1 GPA, including mandatory study hall
- Special advising strategy, including a focused first-year seminar, for engineering students
- Given that in-state students are more likely to retain, the fact that commuters are less likely to retain makes them a target group for special attention
- **Note: Increasing grant aid would NOT be recommended**

Possible Next Steps in Modeling

- If achieving a particular Term 1 GPA or better is very significant in retaining to Term 3, then there are two additional models that could be constructed:
 - One would examine those factors that were significant in predicting retention to Term 3 for everyone who had a $\text{GPA} > X$.
 - The other would examine those factors that were significant in predicting who would achieve a $\text{GPA} < X$.

Sample Predictive Model II

*for Full Time Freshmen Who Achieved at Least a 2.0 GPA in Term I

Variable	Marginal Effects	Description
Total Grant	0.8%	For every \$1000 increase in total grant a person is .8% more likely to retain to Term 3
Need	-0.3%	For every \$1000 increase in need a person is .3% less likely to retain to Term 3
FWS	5.4%	For every \$1000 increase in on-campus earnings, students are 5.4% more likely to retain to Term 3
Term 1 GPA	2.3%	For every additional GPA point (e.g. 2.5-3.5) a student is 2.3% more likely to retain.
Commuters	4.3%	Commuters are 4.3% more likely to retain than students who live on campus.
In-State	7.1%	State residents are 7.1% more likely to retain than out-of-state students.
Program for at-risk students	24.7%	Students in this program are 24.7% more likely to retain.
Funded Athletes	10.2%	Funded athletes are 10.2% more likely to retain.

Possible Interventions

- Expand on-campus employment
- Expand residential life programming
- Expand programs for at risk students or replicate their approaches



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User Name

Password



National Student Clearinghouse



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Getting Started

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FAQs

Sample Report

Brochure

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Custom Surveys

- Custom surveys can uncover a variety of information about students who stay—and students who attrit
- Telephone based, third-party vendor surveys are best (but costly)
- Objective data are worth it

Survey Topics Could Include

- Students' educational and career objectives
- Ratings of their experience at your institution
- Reasons for leaving
- Comparisons between your institution and their new college or university
- Impact of participation in extra-curricular activities
- Financial issues

Educational and Career Objectives That are of Great Importance

	Students For College "X" - Non-Returning	Current
Finding a satisfying career	100	96
Getting the career preparation necessary to earn a good living	100	100
Eventually earning a college degree	95	97
Getting admitted to the academic or pre-professional program that most interests you	99	95
Balancing studies and family life	93	84
Finding a way to pay for your college education	97	88
Balancing studies and work	96	80
Coping with the academic demands of college	91	87
Receiving guidance from faculty and professionals to help you compete your studies	93	68



Reasons For Leaving Among Non-Returning Students

- Could not afford it
- Did not like the campus location
- Preferred a more traditional college life where you could live on campus and participate in activities
- It was not worth its cost
- Not satisfied with the quality of the academic programs and instruction
- Not enough time for studies and work/family responsibilities

Reasons For Leaving Among Non-Returning Students (cont'd)

- Not enough guidance and support from advisors
- Did not think they fit in well
- Travel time to campus was too long
- Did not make many friends
- Not admitted to the academic program of greatest interest
- Concerned about getting a good job

Experiences At New College or University Rated Considerably Better/Worse

- Financial aid/scholarships
- Academic program quality
- Access to desired major
- Individualized attention from faculty
- Hands-on learning opportunities
- Academic facilities
- Image of college among employers
- Job placement assistance



Experiences At New College/University Rated Considerably Better (cont'd)

- On-campus housing
- Understanding of special needs to balance study and jobs/family
- Safety/security
- Academic counseling from an advisor
- A learning environment with many serious students
- Extra curricular activities
- Racial/ethnic diversity
- Quality of campus housing

Benchmarking

Institution	2006-07 Overall Acceptance Rate	2006-07 % Live on Campus	2006-07 Middle 50% SAT	2006 % Pell-eligible	Freshman Retention Rate	2007 Predicted Graduation Rate	2007 Actual Graduation Rate	Average Graduation Rate
College A	68%	23%	970 – 1170	23%	80%	58%	61%	
College B	61%	N/A	930 – 1170	28%	82%			61%
College C	55%	28%	873 – 1050	45%	74%	46%	33%	
College D	59%	18%	950 – 1190	29%	79%	46%	59%	
College F	76%	33%	880 – 1100	29%	70%	50%	47%	
College G	74%	16%	820 – 1040	25%	67%			41%
College H	69%	7%	1020 – 1210	25%	71%			43%
College I	61%	9%	875 – 1078	18%	73%			22%
College J	67%	12%	800 – 1070	50%	66%			20%

Source: *U.S. News & World Report*
February 1, 2008



Interviews and Focus Groups

- Conduct interviews and focus groups
 - What are the profiles of students who persist versus attrit?
 - Is there a feedback loop between retention/recruitment functions?
 - Is there a gap between image and reality?
 - What are the strengths/weaknesses of the educational experience?
 - How can campuses improve academics, scheduling, student life, student services?
 - Do undergraduates believe that University X is worth the cost?

Putting it All Together

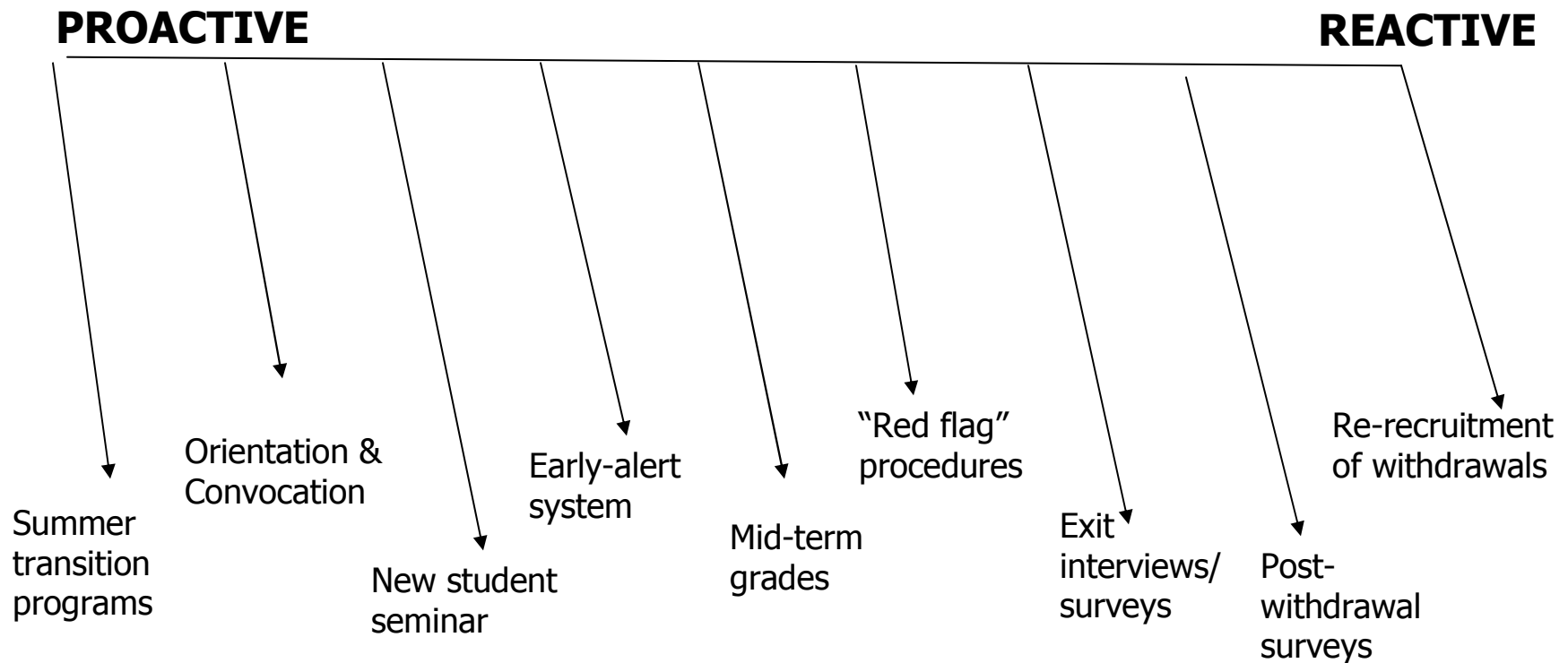
- Triangulate findings from old and new research
- Develop recommendations grounded in empirical data and best practices
- Model solutions/best practices
- Conduct pilot programs
- Continuous improvement



Early Warning Signs

- First step is to develop the “at risk” list
- Second step is to have “safety net” services to offer
 - Early attendance or progress checks
 - Academic support services and career advising
 - Peer-to-peer mentoring
 - Mandatory study halls

Early Warning Systems: Retention-Intervention Timeline



Source: Dr. Joseph Cuseo, Associate Professor of Psychology, Marymount College, Palos Verdes, CA

Building Connections

- Orientation
- Campus employment
- Advising
- Linked courses and Freshman Interest Groups



Other Strategies

Long Island University is pursuing

- Improved integration of academic advising, career counseling, and student transactional services
- Financing initiatives (retention incentives)
- Access to online self-service tools/portals
- More institutional research/data mining/measurement

Other Strategies

Long Island University is pursuing (cont'd)

- Appointment of a University Director of Outcomes Assessment
- Appointment of an Associate Provost with primary responsibility for retention
- Curricular initiatives (General Education)
- Holistic models of student development/success

Lessons Learned

- Although retention is everyone's responsibility, someone needs to be in charge
- Conduct pilot programs
- Feedback loops and measurable goals are critical



Conclusions

- Role of the Business Officer/Chief Financial Officer
 - Quantify the relationships between retention, enrollment, net tuition revenue, and budget
 - Identify and budget “start-up” funding
 - Target investments to those most likely to have the greatest return on investment
 - Champion the project

Questions / Discussion



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