Integrating and building our data for effective student support: a possible way forward in South Africa

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FIU

Baseline

- Use data to increase student success
- We define student success as retention and on-time graduation.

Key Questions

- When do we lose students?
- What are short-term and long-term ways to decrease dropout?

Florida International University

- Large: 54,000 students, undergraduate, masters, doctoral programs
- Most are minorities: (64% Hispanic, 13% Black, 11% White, 3% Asian)
- Low income: 55% qualify for federal grants, more for federal loans
- Urban: Miami, Florida, USA (metropolitan area pop. 5.5 million)
- Carnegie Very-High Research Activity classification

Graduation Success Initiative

Graduation rates improved from 41% to 57% in last 4 years

Components:
- Increased and improved academic advising
- Get students in appropriate majors early on
- Remove unnecessary obstacles for students
- Provide supports for students
- Identify students at appropriate times to help them

(Robertson & Pelaez, 2016)

Why do students leave university?

- Not just one answer
- Different reasons for different students
- Need to identify key factors and work to improve these
- Identify subsets of students who are at risk because of specific factors and reach out to them proactively
- Find specific, simple indicators of problems: did they register for the next semester? Did they fail a key course?

What we need to know

- When and why do we lose students?
  - Compare students who leave with those who stay on key variables
  - Poor performance in Critical Courses?
  - Not passing classes in their intended programme of study?
  - Low GPA (General Point Average) makes them ineligible for financial aid?

When do you lose students?

Graduation by Average FIU GPA
All (Last Term Academic Structure)
2009 FTIC Cohort
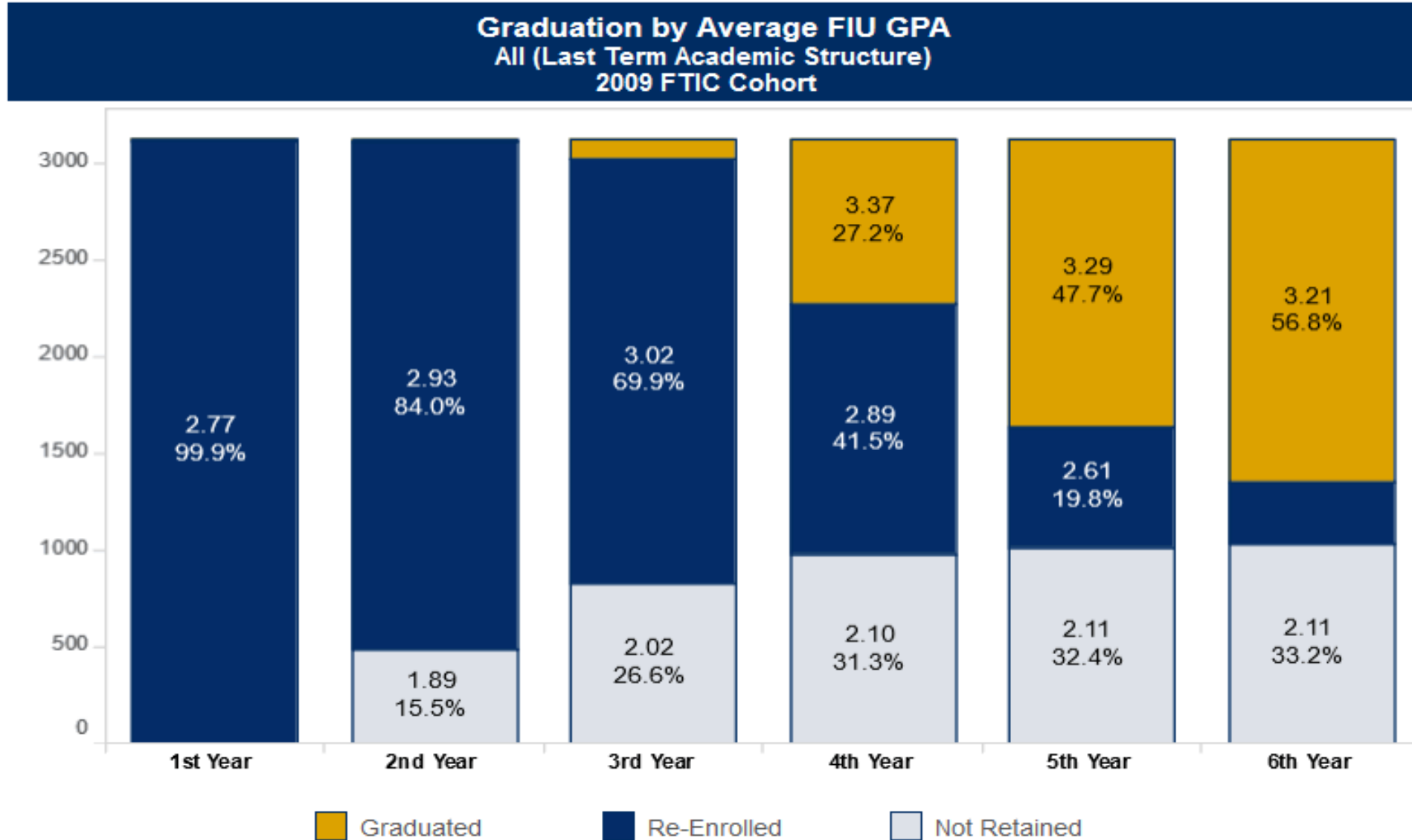
Why do you lose students?

- Some students are at risk of dropout before they begin.
  - Who and why?
- Do students drop out after first term? After second term? Why?
- Do students fail specific classes that are high predictors of dropout?

Intervening before students start

- Before they start: create predictive model of who is at risk.
  - High School GPA, not national tests, and amount of Unmet Need, are key for us

- Your model might focus on Admission Points, scores on NBTs, AQL Achievement Level; whether or not students have loans, amount of financial aid, etc.
  - Will probably be different for each institution
  - Are some of the NBTs more predictive of dropout than others?

- Potential models: binary logistic regression
  - Broschard, Boronat, & LeSante (2015) example

Working with students at risk of dropout

- Assign high dropout risk students to proactive academic advising.
  - Give this program a positive name: Academic Excellence Program
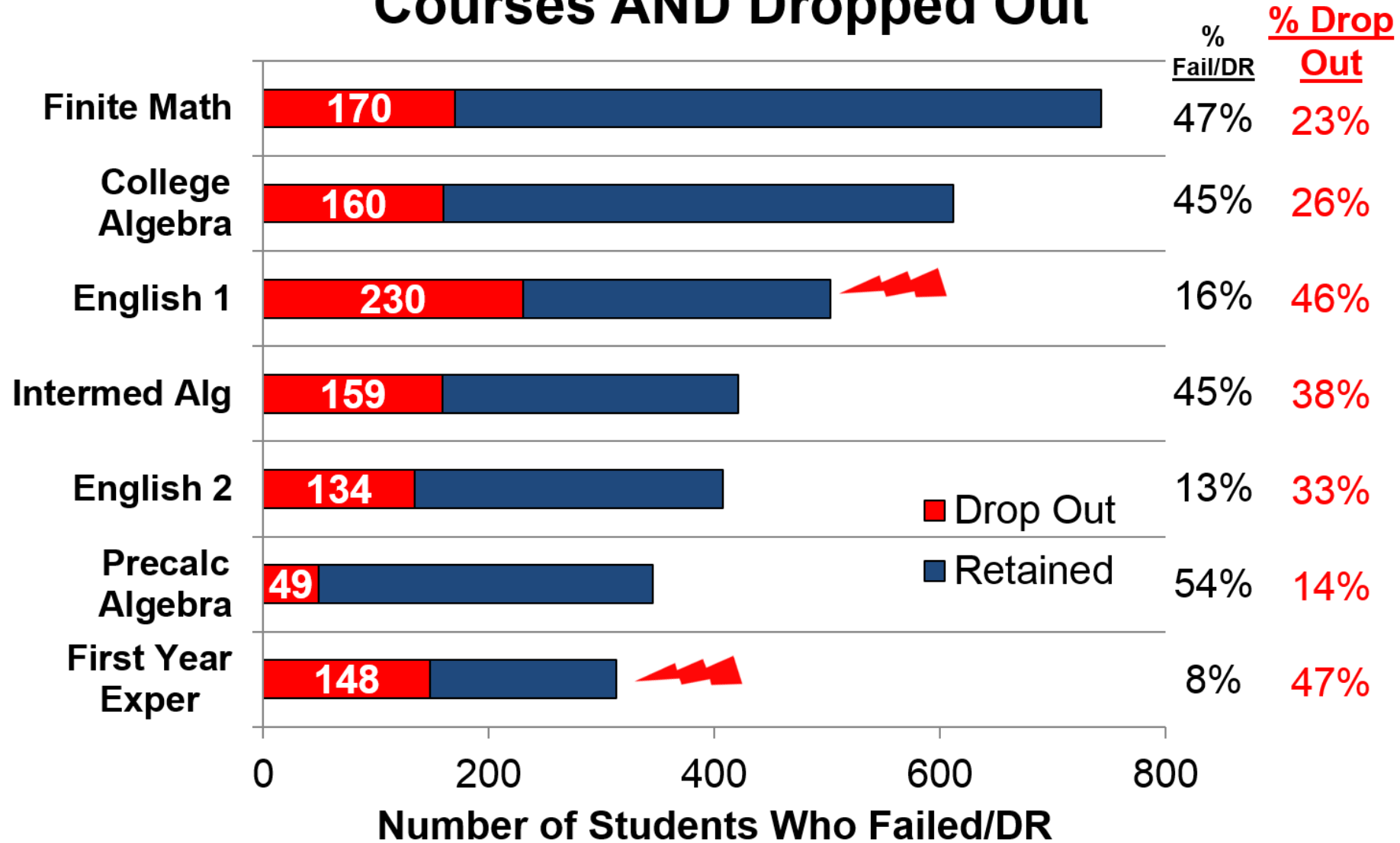 - Plan supports: peer tutoring, monthly

Examine program admission criteria & course placement

- Are your admissions criteria for different programs set well?
- What happens to students who fail in their programs? Do they drop out? Should they be quickly redirected to another program before they drop out?
- Is it better for them to get a degree than to get their first choice degree?

- Do course placement as well as possible.

Freshman Cohort Who Fail/DR Most-Failed Courses AND Dropped Out

	% Fail/DR	% Drop Out
Finite Math — 170	47%	23%
College Algebra — 160	45%	26%
English 1 — 230	16%	46%
Intermed Alg — 159	45%	38%
English 2 — 134	13%	33%
Precalc Algebra — 49	54%	14%
First Year Exper — 148	8%	47%

Legend: ■ Drop Out ■ Retained

Number of Students Who Failed/DR

"Fail" = less than 'C'/Withdraw

When can you intervene?

- During the semester, if you get alerts from faculty that students are doing poorly in their classes.

- After the semester, if they failed an important class.

- Before they lose their financial aid (loan, bursary, scholarship)

- How can you intervene once they have started?
  - Text, email, and call students

Short-term and Long-term ways to increase retention and graduation

- Short-term:
  - Identify incoming students who are at risk, provide extra advising
  - Use faculty alerts to direct students to tutoring during the semester
  - Have students meet with an advisor before their last year to plan their courses if necessary.

- Longer-term:
  - Review programme admissions criteria. Plan to redirect some students.
  - Have faculty review the teaching in Critical Courses. Does the pedagogy need to be improved to increase student learning?
  - Increase access to academic advising

Resources

- List of FIU reports at http://opir.fiu.edu/retention-graduation-studies.htm

- Contact Dr. Connie Boronat to request reports at boronatc@fiu.edu

- Broschard, D., Boronat, C. B., LeSante, D. (2015). Identifying at-risk students before their first semester: A predictive model of incoming FIU freshmen one-year retention. Internal report, Feb. 6, 2015.

- Robertson, D. L., & Pelaez, M. (forthcoming, September, 2016). Behavior analytic concepts and change in a large metropolitan research university: The Graduation Success Initiative. *Journal of Organizational Behavior Management.*

- Academic Advising
- Major Maps: What to take when to graduate on time
- Identify students in the wrong major early on and redirect them to an appropriate major
- Critical Courses: In which courses is failure a high predictor of dropout?
- Improve Critical Courses with pedagogy

- 2) <u>What are the classes in which failure leads to dropout</u>? Not—what are the classes with the highest failure rates? Keep the focus of the question on dropout.

Purpose of analytics

- Use data to see what is working well and what is not
- Target resources to areas of greatest potential impact
- Focus on areas

Improving placement

- NBTs as a guide to placement (Wilson-Strydom, 2012)
- Performance in math as a predictor of success in Chemistry
  - Math placement test.
  - Suggestion: Look at the correlation of Math score and Chemistry passing rate. Maybe add a module or supports on algebra concepts

Do simple assessments to see if programmes are working

- Matched sample comparison: Compare retentions rate for participating students to non-participating students. For each participating student, find a set of similar but non-participating students, randomly select one of these non-participating students, and compare their retention rates.

Increasing graduation rates

- Make a contact list of:
  - All students who have enough course credits to be in their last year of university