

# ***Preliminary Study of the Effectiveness of an Instructor-Driven Early Warning Alert and Student Intervention System***

*Presented by:*

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# Presentation Overview

**Objective:** Present my findings on the effectiveness of an early intervention student retention system on the course pass rates of at-risk college students

## **I will address:**

- Retention research
- Research methods
- Results
- Conclusions

# Rita Pierson: *Every kid needs a champion*



# The importance of faculty at all levels

*“Regarding faculty and staff development, it is increasingly clear that faculty actions, especially in the classroom, are critical to institutional efforts to increase student retention, but it is also clear that the faculty of our universities and colleges are, as a matter of practice, the only faculty from kindergarten through universities who are literally not trained to teach their students.”*

*Tinto, 2007*

# Retention

*Retention, also commonly referred to as student persistence, is an important topic in higher education retention.*

- Well theorized topic (Tinto, 2007 presents a comprehensive review)
- Social issue
- Financial issue
  - more than a dozen states have adopted performance based funding
  - freshman that withdraw results in multiple years of lost tuition revenue (Bean, 1992)

# Why don't students persist?

## Research suggests:

- ❑ Not necessarily a student characteristic
  - “better students” often do not earn degree (Tinto, 2007)
- ❑ Most factors beyond institution's control
  - pressure of work, family, financial, or other outside responsibilities (Cohen & Braver, 2008)
- ❑ Community college students have a lower persistence rate than four-year University students (Cohen & Braver, 2008; Tinto, 2007)

# Why DO students persist?

## Research suggests:

- ❑ Student connection to the institution is an important factor across studies reviewed
- ❑ Faculty interaction is an important student connection
  - when faculty focus more effort on promoting student learning, more students persist (Tinto, 2007)
  - faculty might be the only connection that some students have to the institution (Cohen & Braver, 2008)
  - faculty information can be a highly important or even the most important part of at-risk student identification (Fletcher, 2012)

# Instructor-driven, student success/early alert systems

## Research is conflicted:

- ❑ Fletcher (2012) found mixed results in a national study
- ❑ Hudson's (2006) found that in cases of excessive absenteeism an early alert system helped with student retention
- ❑ Jackson (2015) found faculty interventions are shown as a significant retention tool for student identified as at-risk
- ❑ Green (2015) found no statistically significant differences in course completion or persistence rates of students receiving early alerts in a developmental English course

# Empirical Contribution

In 2015, I volunteered to participate in an institutional pilot of Beacon, an instructor-driven student early intervention system, and decided to conduct empirical research on the effectiveness of the system.

**Hypothesis:** *There is a difference in the course pass rates of students performing below average after Exam 1 between the student groups that received the early alert intervention and the student groups that did not.*

# Research method

- ❑ In fall 2015, Beacon was used in 2 courses
  - introductory financial accounting (n=34) and introductory managerial accounting (n=30)
- ❑ Both courses were hybrid delivery
- ❑ Four exams spaced evenly throughout the semester
- ❑ Content delivery pace, number of chapters covered, homework requirements, and course grading structures are nearly identical

# Research method, cont.

Following blurb was included in the Fall 2015 syllabi:

*All students should have a network of people who will support them in their educational journey. For that reason, UC Clermont uses a system known as Beacon, whereby your instructors and coaches, if applicable, can post notices about observable behavior. For instance, if you are absent repeatedly from a class or are not completing assignments, your instructor may post a notice on Beacon. That information may be shared with your other instructors and/or your athletic coach. Advisors will be monitoring notices posted on Beacon so that we may address any issues before they become obstacles to your academic success.*

## Research method, cont.

- ❑ Class rosters for both courses were uploaded into the Beacon system by the institution
  - students were connected to their academic “network”
- ❑ Instructors could log into the system and send academic alerts; encouragements; notifications of academic excellence; and referrals to others within the “network”

# Research method, cont.

## Early warning alerts:

- ❑ Sent to students that were performing below average (<70%) in both courses after
  - Exam 1 (September 15<sup>th</sup>)
  - Exam 2 (October 13<sup>th</sup>)
  - Exam 3 (November 10<sup>th</sup>)
- ❑ In fall 2015 a total 19 students receive alerts and a total of 57 alerts were sent

# Example alert, student succeeded

Date	Notification Type	Notification
9/15/2015	Academic	I am concerned about Student A's academic progress in accounting. At this point, she is earning a 60.54% in the course. She can see her grade details in Blackboard. Her grade is due to a combination of missing homework assignments and poor performance on the first exam today. She has the ability to bring up her grade and pass the course so I want to encourage her to 1.) attend "The 5 Simple Steps to Financial Success Now" extra credit event on Sept. 16 or 17 and earn more points on the first exam, 2.) attend class, and 3.) work with the tutor to complete the homework.
10/13/2015	Quality of Effort	Student A's performance in accounting has significantly improved the last 3 weeks. She earned 85% on Exam 2 and completed all the assignments for the last 3 weeks. Keep up the excellent work!!!
11/10/2015	Academic Excellence	Keep up the great work Student A!

# Example alert, student unsuccessful

Student	Date	Notification Type	Notification
Student B	9/15/2015	Academic	I am concerned about Student B's academic progress in accounting. At this point, she is earning a 56.93% in the course. She can see her grade details in Blackboard. Her grade is due to a combination of missing homework assignments and poor performance on the first exam today. She has the ability to bring up her grade and pass the course so I want to encourage her to 1.) attend "The 5 Simple Steps to Financial Success Now" extra credit event on Sept. 16 or 17 and earn more points on the first exam, 2.) attend class, and 3.) work with the tutor to complete the homework.
Student B	10/15/2015	Academic	Since the last alert on 9/15 Student B's grade in accounting has decreased. She earned a 65% on Exam 2 today and did not complete any of the homework/assessments for the last 3 weeks. Her course grade at this point is 41.47%. If her performance in my class does not drastically improve from this point forward she will not pass this course.
Student B	11/10/2015	Academic	Student B missed the exam today and has not completed any of the work. At this point she cannot pass ACCT2081 and should withdraw asap.

# Research method, cont.

- ❑ Student grade data for the fall semester from 2012-2015 of the same sections of the two courses were analyzed (total of 321 students)
- ❑ Student population performing below average after Exam 1 (<70%) was extracted (n=105)
- ❑ Extracted data was converted into categorical data in which at-risk students, performing below average at Exam 1, either passed or failed the course (course grade of >60%)
- ❑ Chi-square test was applied to the data to analyze group differences

# Results

Observed Frequencies					
	Populations				
Course Success	Fall12	Fall13	Fall14	Fall15	Total
Yes	16.00	4.00	11.00	7.00	38.00
No	26.00	15.00	14.00	12.00	67.00
<b>Total</b>	<b>42.00</b>	<b>19.00</b>	<b>25.00</b>	<b>19.00</b>	<b>105.00</b>
	0.38	0.21	0.44	0.37	

  

Expected Frequencies					
	Populations				
Course Success	Fall12	Fall13	Fall14	Fall15	Total
Yes	15.20	6.88	9.05	6.88	38.00
No	26.80	12.12	15.95	12.12	67.00
<b>Total</b>	<b>42.00</b>	<b>19.00</b>	<b>25.00</b>	<b>19.00</b>	<b>105.00</b>
					p-value 0.4548

# Results, cont.

- Resulting p-value is 0.4548
  - significance level of  $p = 0.05$
  - fails to reject the null hypothesis
  
- Finding: there is no difference in the course pass rates of students performing below average after Exam 1 between the student group that received the early alert intervention and the student groups that did not.

# Conclusions

- ❑ Results were admittedly disappointing considering the researcher's anecdotal experiences with students
- ❑ Results might also be because the students were already receiving progress grade reports
  - grades were posted 4 times in Blackboard—after Exam 1, Exam 2, Exam 3 and Exam 4
  - once grades were entered in the Blackboard gradebook students were e-mailed by the instructor

# Conclusions, cont.

- ❑ Instructor-driven retention efforts are not rejected wholeheartedly
- ❑ Recommendations for further research:
  - further studies across disciplines is necessary
  - use of instructor progress grade reports alone as a student intervention system

***Regardless, it is likely that faculty will continue to play a pivotal role in student retention efforts!***

**Thank you for attending my  
presentation!**

**THANK YOU**

# Questions?



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