

COURSE SIGNALS: THE PAST, CURRENT, AND FUTURE APPLICATION OF ANALYTICS

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2011 **EDUCAUSE** 
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AGENDA

- Academic Analytics
- Course Signals at Purdue
- Findings
- The Course Signals Experience
- Challenges
- Possibilities
- How do you start your own analytics initiative?



A DIFFERENT FOCUS

- How can IT bring strategic impact at scale?



IN THE BEGINNING...

- What can institutions do to improve student success?
- How can institutions help students take advantage of existing campus resources?
- What existing information on campus can be utilized to better identify students at risk?
- How can students become self-aware of what effort is necessary to be successful in college?

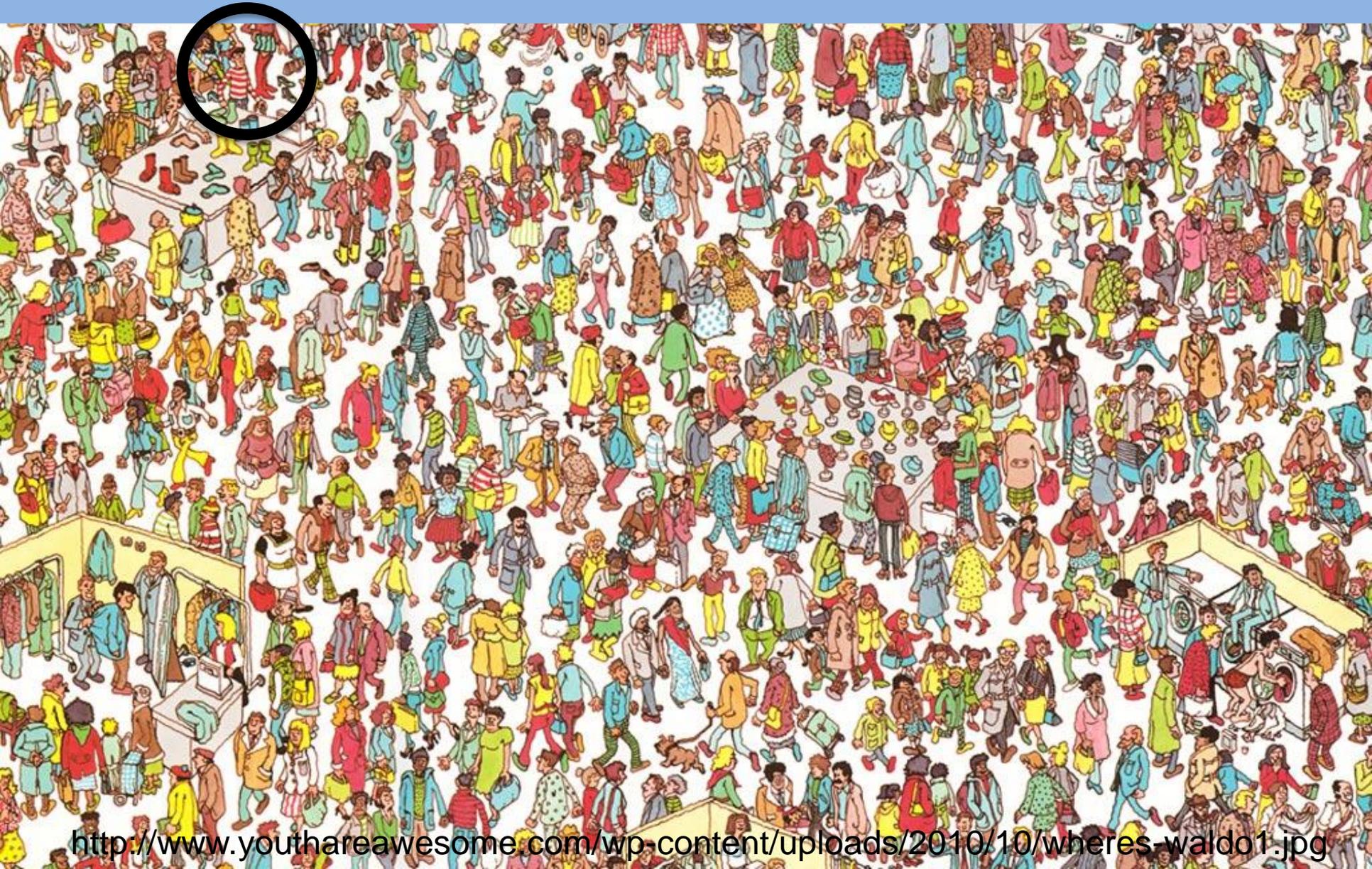


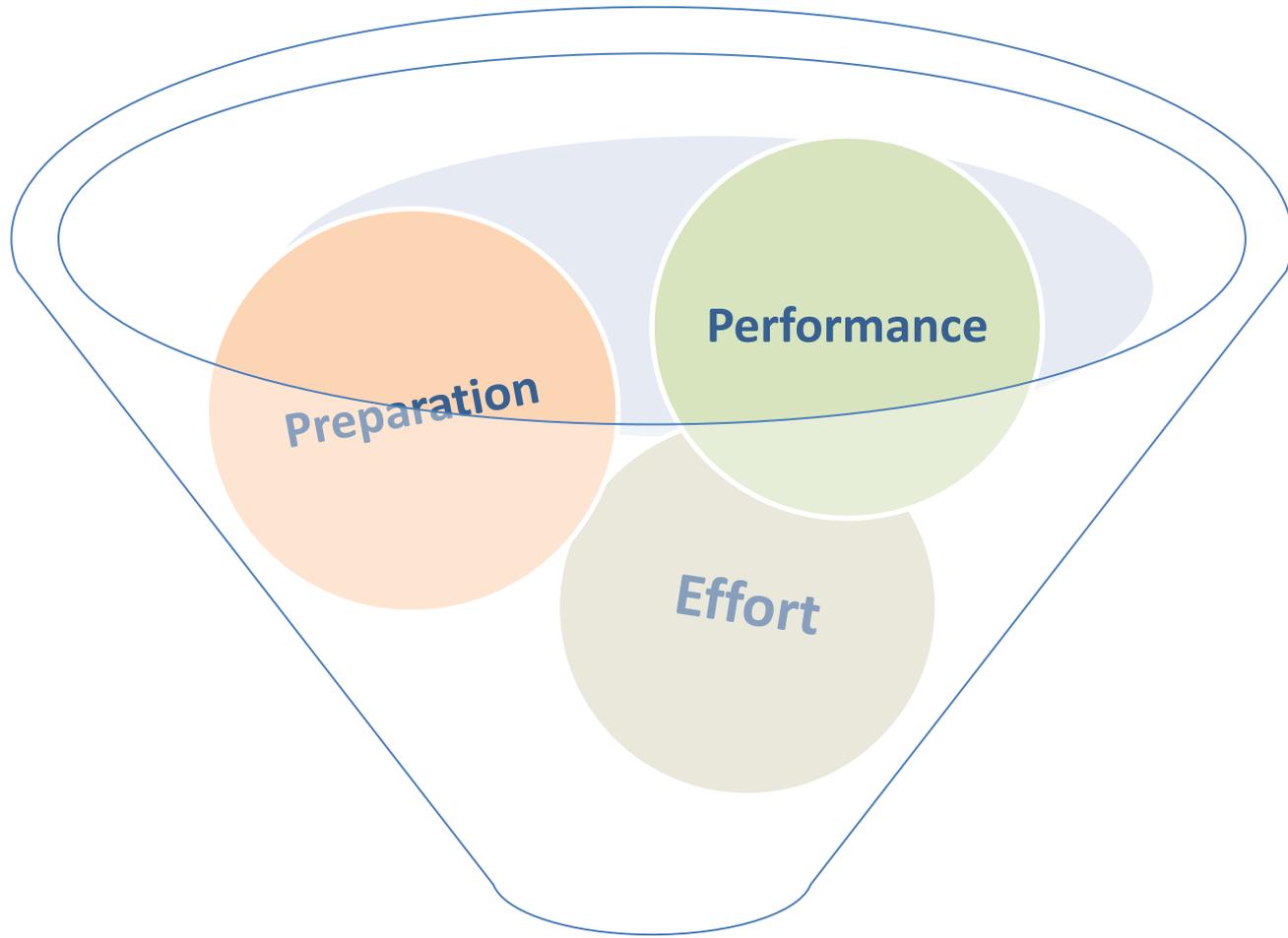
PROCESS OF ANALYTICS DEVELOPING “ACTIONABLE INTELLIGENCE”



Adapted from: Eckerson, W. W. (2006) Performance Dashboards: Measuring, Monitoring, and Managing Your Business. John Wiley & Sons, Inc. Hoboken, NJ.

Challenge: How do you find the student at risk?





Risk level



PROJECT APPROACH

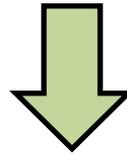
Student Characteristics/Academic Preparation

+

Student Effort (sessions, quizzing, discussions, etc.)

+

Student Performance (grade book data)



Messages

+

interventions

GROWING INTEREST



NBC Nightly News with Brian Williams

<http://www.msnbc.msn.com/id/3032619/vp/32634348#32634348>





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Signals
Stoplights for student success

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Signals
Stoplights for student success

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Signals
Stoplights for student success

COURSE SIGNALS TODAY

- 115 instructors
- 80 courses
- 180 sections
- 17,253 students (unique)

Goal: 20,000 unique students in one semester by end of 2012-2013 school year



Section: MATH - 105

Risk Summary: High: 28 Medium: 35 Low: 37

Filter By

Student	4/30 2010	4/30 2010
Student424		
Student468		
Student427		
Student488		
Student477		
Student487		
Student476		
Student422		
Student500		
Student454		
Student486		

Start Over

Edit Signal

Next

Section: MATH - 105

E-Mails

 HIGH RISK

Low Effort

High Effort

 MODERATE RISK

Low Effort

High Effort

 LOW RISK

Low Effort

High Effort

Preview Of: High Risk, Low Effort E-Mail

From: Aviansh Kaul

Subject: Signals - Red, less effort:

Saluation: Dear [Student]



I am sending this out due to your low percentages in class and your low usage of Sakai.

You are using the resources provided to you less than other students in your class. I want to remind you that completing all the [practice exercises] in Sakai is a very important component to the course.

Not only are the points valuable, they prepare you for the exams. You need to spend more time in Sakai and get help outside of class. If you need help, please see me in my office, [office location].

I am in each day of the week from [h:mm]AM to [h:mm]AM. You can also use the other help sources listed on the syllabus.

Please ask for help. I know you can be successful in this course.

Cancel

Save

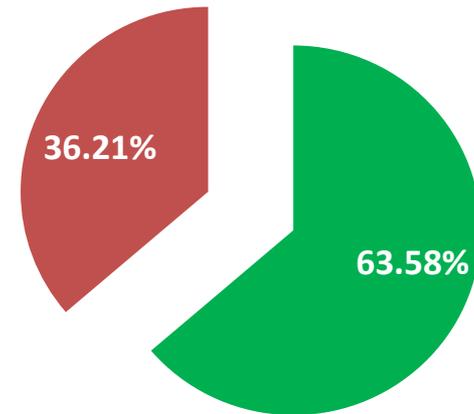
Next

WHAT HAVE WE FOUND--GRADES



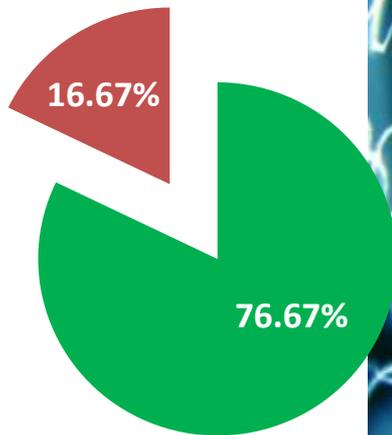
STAT	N	A/B
Signals	297	56.90%
No Signals	486	30.45%

STAT Course Not Using Signals

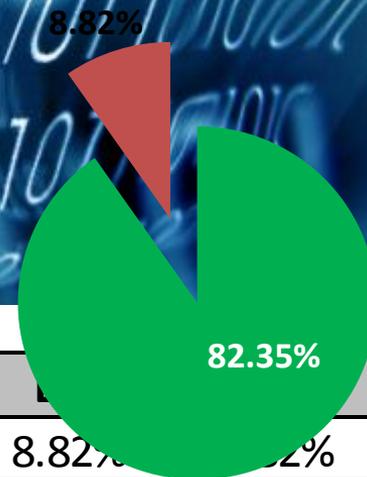


WHAT HAVE WE FOUND--GRADES

CS Course Not Using Signals



CS Course Using Signals

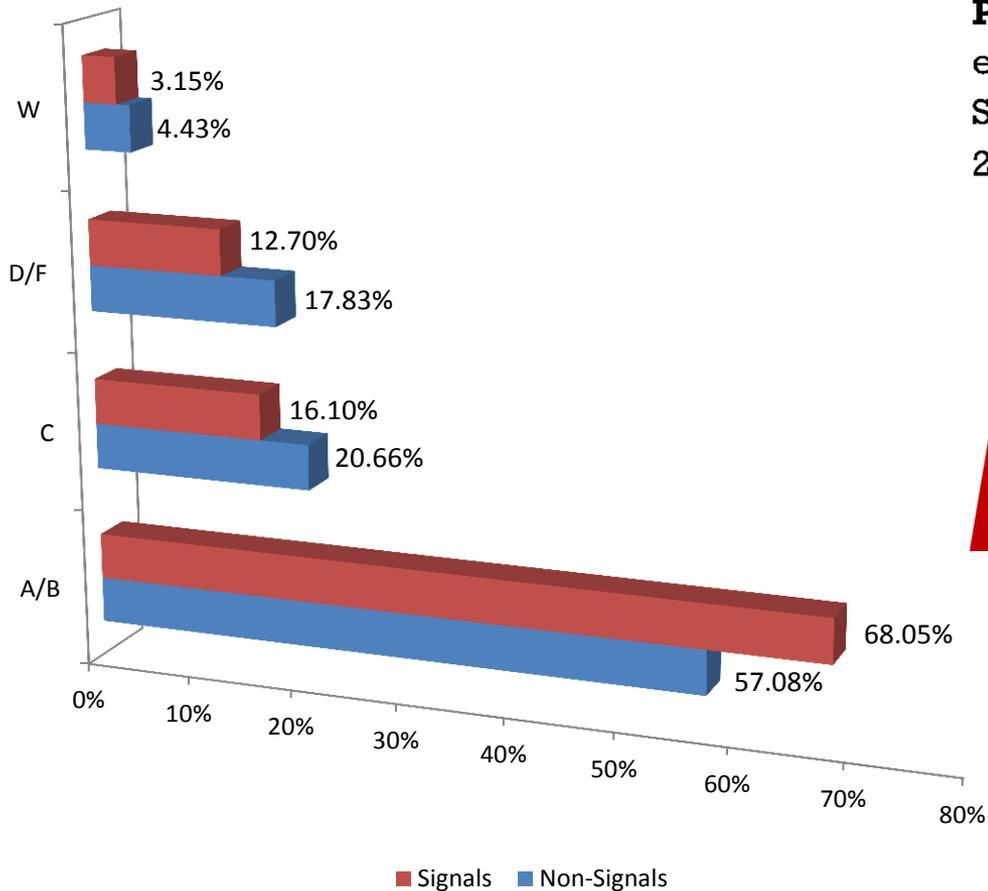


CS	N	A/B	C	D	F
Signals	68	50.00%	32.35%	8.82%	6.67%
No Signals	120	36.67%	40.00%	16.67%	6.67%



WHAT HAVE WE FOUND--GRADES

Grades Students Received



Percentage point difference in A/B grades earned and D/F/W grades earned between Signals and the comparison cohort in the fall 2009 semester.



SIGNALS AFTER 4 YEARS

Fall 2007 Cohort

Retention Rate

Number of Signals Courses	Cohort Size	1 year	2 year	3 year	4 year
No Signals	5,134	83.44%	73.14%	70.47%	69.40%
At least 1	1,518	96.71%	94.73%	90.65%	87.42%
1 instance	1,311	96.57%	94.13%	89.70%	86.50%
2 or more	207	97.58%	98.55%	96.62%	93.24%

Number of Signals Courses	Average SAT Score
No Signals	1155
At least 1	1129
1 instance	1133
2 or more	1102



FOUR YEAR GRADUATION RATES

Fall 2007 Cohort

Number of Signals Courses	Cohort Size	4 year
No Signals	5,134	69.40%
At least 1	1,518	87.42%
2 or more	207	93.24%

Graduation Rate	Average SAT Score
41.20%	1155
45.27%	1129
38.65%	1102



STUDENT EXPERIENCE



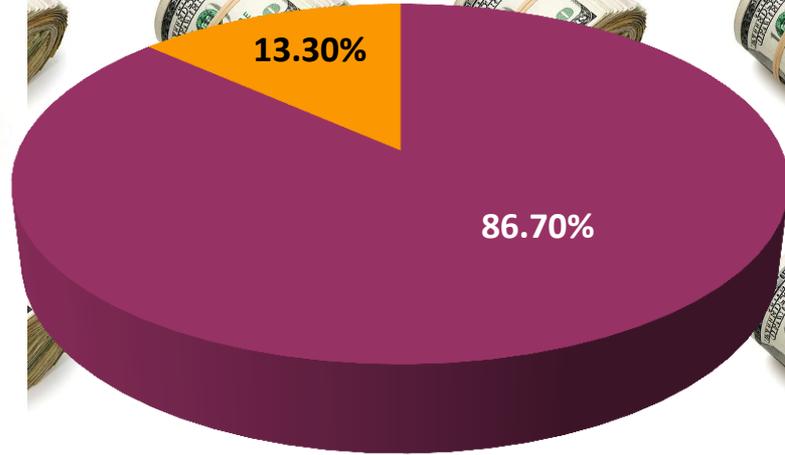
FACULTY EXPERIENCE



COST VS. ROI



Percentage of First Year Cohort* Leaving Purdue



\$18.7 million

*2009 entering cohort



MESSAGING CHALLENGE

- Email is no longer the single best way to reach students (was it ever?)
- Need standard approaches to provide a multi-modal platform for reaching students
- Messages may need to include changing icons/graphics in one system based on data from another system



INSTITUTIONAL CHALLENGE

- Data in many places, “owned” by many people/organizations
- Different processes, procedures, and regulations depending on data owner
- Everyone can see potential, but all want something slightly different
- Sustainability – “can’t you just...”
- Faculty participation is essential
- Staffing is a challenge



NEW POSSIBILITIES

- Using data that exists on campus
- Taking advantages of existing programs
- Bringing a “complete picture” beyond academics
- Focusing on the “Action” in “Actionable Intelligence”



HOW TO START – PRACTICALITIES

- Chose your team wisely
- Define your resources and timeline
- Human Subjects
- Privacy
- Security



HOW TO START – THE FUN STUFF

- Think about
 - Your question/issue
 - Your data
 - Your support
 - Your theoretical basis
 - Your possible models
 - What action will come from the information you provide



QUESTIONS?

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THANK YOU

Please fill out your session evaluation!

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