Achieving the Dream
Data and Analytics Summit
Leveraging Analytics to Optimize Student Success
#ATDSAS16
Succeeding with Analytics

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SUCCEEDING WITH ANALYTICS

OUTLINE

• Advanced Analytics
• Applications
• Examples
• Addressing the talent gap
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CHALLENGING QUESTIONS

“What happened?”

“How exactly is the problem?”

“What if these trends continue?”

“How many, how often, where?”

“What’s the best that can happen?”

“What actions are needed?”

“What will happen next?”

“Why is this happening?”
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DATA SOURCES OF DIFFERENT TYPES

Cross-Sectional

Time Series

Text

Network

Link

Sound
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BUSINESS QUESTIONS

Which student will succeed?

Have graduation rates improved?

How are students reacting?

Who are the influencers?

Which courses to recommend?

Is there a perception problem?
WHAT IS BUSINESS ANALYTICS?

What is it?

• The use of quantitative techniques (statistics, data mining, forecasting, optimization, …) to guide and support critical business decisions based on customer and operational data.

• Often classified by nature of decision support provided
  • Descriptive
    “What happened?”
  • Predictive
    “What if these trends continue?”
  • Prescriptive
    “What’s the best that we can do?”
STRATEGIC QUESTIONS

- Student acquisition
- Student retention
- Workforce planning / class scheduling
- Capacity planning
COMMUNITY COLLEGE SUCCESS STORIES

- Valencia College – success story
- Sinclair Community College -- blog
- Des Moines Area Community Colleges – success story
Data-Driven Approach to Improving Outcomes in Education:

• Why are students more successful in certain demographics?

• Did remedial classes contribute to student success?

• What is the success rate for students transitioning to UCF (University of Central Florida)?

• Workforce planning? Additional teachers? Part-time or full-time?
Transforming Data into Information – use of Predictive Modeling:

- Which students apply but not enroll? Why?
- Which students de-register? Pro-actively contact them.
- Who succeeds in online courses and why?
- Do we have sufficient IT resources?
Predictive modeling to determine factors affecting student success:

- Planning ahead
- Registering early
- Attending student orientation
- Meeting with an advisor
Filling the Analytics Talent Gap
NEED ANALYTICAL EXPERTS AT ALL LEVELS

- Create analytical models
- Exploit analytical tools
- Use analytical results
Building analytical models requires

- Training in analytical disciplines
- Modeling expertise
- Innovation in new algorithms and methods
EXPLOITING ANALYTICAL TOOLS
ENABLE CONSUMPTION OF ANALYTICS

Democratization of Analytics
ANALYTICS EDUCATION – ROLE OF COMMUNITY COLLEGES

- Analytics certification courses
- Applications (User interfaces) building skillsets
- Prepare students for graduate level analytics degree programs
- Reach out to minority and first generation students – expand the pool
Discussion with Prof. Jennifer Priestley at Kennesaw State University:

- Students at community colleges are rich source for new big data and data science talent
- These students are at risk for not being successful – help them!!
- Bring the data science to the student instead of bringing the student to data science!
  - Offer a minor in Applied Data Science
  - Integrate project-based work with local companies
BUSINESS ANALYTICS PROGRAMS

- Wake Tech Community College Business Analytics Program
- Central Piedmont Community College – NC (includes SAS)
- Austin Community College
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