Analytics in Hawaii

WICHE ALLIANCE Conference, April 8-10, 2015 Rapid City, SD
Panel Presentation: “Analytics in Action”

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Challenges for Institutional Research

• Compliance vs. Self-Improvement
• Developing a culture of evidence
• From reporting to analysis
• Converting data into ‘actionable’ information
• Follow highest standards, best practices
• Know your customers, mission
• Leverage technology, stay abreast of tech
• Empower staff, continuous honing of skills
• Leadership working with IR (and IT too)
What is Analytics?

Learning Analytics  Predictive Analytics
BIG Data  Business Intelligence
Academic Analytics  Optimization
Visualization
Explanatory Analytics

Explanatory Statistical Modeling Used to Inform 15 to Finish Campaign

15 to Finish Institute

COMPLETE COLLEGE AMERICA

April 9, 2013
Table 1 of 30

<table>
<thead>
<tr>
<th>Number of Students</th>
<th>Number of Graduates</th>
<th>Graduation Rate</th>
<th>Credit Completion Rate</th>
<th>Complete Graduates in 3 years</th>
<th>Complete Graduates in 4 years</th>
<th>Complete Graduates in 5 years</th>
<th>Complete Graduates in 6 years</th>
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<tbody>
<tr>
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<td>No</td>
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<td>Yes</td>
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</table>

Strongest Predictors of Degree Completion
(from Leading Indicators Analysis, Manoa Study)

- Odds Ratio = 3.5x!
- Degree Completion
- First Term GPA
- Dual Enrollment
- Ethnicity
- Enrollment in College Level Math Year 1
- Geographic Origin
- High School GPA

Probability of Completion by First-Year Credits Earned
(from Leading Indicators Analysis, Manoa Study)

- 78.9%
- 6.7%
- 0%
- 0%
- 0%
- 0%
- 0%
- 0%
- 0%
- 0%
The Power of Prediction and Prescription

- **Predictive Analytics** uses historical data to predict or forecast future behaviors, trends, or outcomes.

Eg. #2

![Image with percentages]
Example: Student X is at risk of dropping out of school

Student X:
- is from the continental U.S. (0)
- has a below average high school GPA (3.0)
- is enrolled in 12 credits (12)
- has a low % of financial need met (.65)
- isn’t not working on campus (0)
- isn’t enrolled in FYE 110 class (0)
- didn’t specify any educational goals in survey (0)
- sparse user activity in STAR and Laulima (.085)

• Probability of Dropping: 0.75
Early Warning Model Example

These variables account for approximately 17% of the variance in a student’s likelihood of returning for a third semester (Pseudo R Square = .168).

Strongest

- Hawaii
- HS GPA
- AP Credit
- SAT R
- SAT M
- Ed Goals
- FYE Class

Less Strong

The Wald test statistic was used to indicate strength of the variable instead of the coefficient, standardized beta. Because of the nature of the logistic regression, the coefficient is not easily interpretable to indicate strength.

*Wald statistic (sig.)
0.05 (*), 0.01 (**), and 0.001 (***)

Eg. #2
### Student Risk Data for Advisors/ Success Coaches

#### Objective 1

<table>
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<tr>
<th>UH ID</th>
<th>LAST NAME</th>
<th>FIRST NAME</th>
<th>EMAIL</th>
<th>CURRENT CREDITS</th>
<th>RESIDENT</th>
<th>AP/CLEP</th>
<th>HS GPA</th>
<th>WORK ON CAMP</th>
<th>1st YR EXP CLASS</th>
<th>% FIN NEED MET</th>
<th>STAR LOGINS</th>
<th>ADVISOR PREVIOUS CONTACT</th>
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<tr>
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<td>15</td>
<td>HI</td>
<td>6</td>
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<td>77%</td>
<td>5</td>
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<td>14</td>
<td>HI</td>
<td>0</td>
<td>3.33</td>
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<td>63%</td>
<td>3</td>
<td>N</td>
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<tr>
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<td></td>
<td></td>
<td>12</td>
<td>CA</td>
<td>6</td>
<td>3.00</td>
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<td>N</td>
<td>45%</td>
<td>0</td>
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<tr>
<th>UH ID</th>
<th>AGE</th>
<th>GENDER</th>
<th>ETHNICITY</th>
<th>COLLEGE</th>
<th>MAJOR</th>
<th>DEGREE</th>
<th>Ed Goal Specified</th>
<th>Relative Risk Value</th>
<th>Risk Level</th>
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<td>CA&amp;H</td>
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<td>M</td>
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<td>No</td>
<td>89.18</td>
<td>HIGH</td>
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Academic Analytics

- “Analytics” that examine students’ academic journeys.
- Data may be available in degree audit systems, which are often home-grown.
- Degree audit systems provide advising and degree attainment support, but also capture important “data trails” about students.
Eg. #3

STAR Academic Journey

My Academic Pathway at West Oahu

System General Education Requirements
- UH System Gen Ed Diversification requirements have been met at West Oahu
- UH System Gen Ed Foundation requirements have been met at West Oahu

BAS COMP Professional Studies Gen Ed (Fall 2014)
A section will be “Incomplete” if any part of the requirement is not yet completed. Please click on “Incomplete” to view more details. For more information on the General Education requirements, view the UH West General Catalog.

Events and Actions

Events
- West Oahu *** Petitioned *** (MAY-09-2015) a WOA Undergraduate BA in Business Administration, Concentration BUSA for Spring 2015
- Applied to West Oahu Fall 2012 Standard Undergraduate BA Business Administration MAY-10-2012 WOA
- Applied to West Oahu : Received AS from U of Hawaii Hawaii Comm Col in ACCMAY-01-2008 : (Degree Self-Reported)
- Applied to West Oahu : Received BS from U of Hawaii West Oahu in BUADDEC-01-2013 : (Degree Self-Reported)
- Applied to West Oahu : Received BS from University of Phoenix in BUADAPR-01-2013 : (Degree Self-Reported)
- Applied to West Oahu Spring 2012 Standard Undergraduate BA Business Administration DEC-06-2011 WOA

See how a change in major affects progress towards degree
**Eg. #3**

UHWO First-Time Full-Time Freshmen Retention Rates by STAR Logins (Fall 2013 Cohort)

Baseline Retention Rate = 61%

- 31% for 0 logins
- 49% for 1 to 3 logins
- 57% for 4 to 6 logins
- 62% for 7 to 10 logins
- 61% for 11 to 15 logins
- 68% for 16 or more logins

**STAR Academic Journey**

Number of STAR Logins (First 10 weeks of semester)
Analytics in Hawaii

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