Learning Analytics in Action: Empirical Findings from an Online Program Pilot

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Outcomes

• You will understand the process that we used to run a pilot of A4L in a fully online program
• You will want to gather feedback on and document the impact of learning analytics
• You will want to share your own lessons learned and failures from A4L use
About Boise State University

- Metropolitan University located in Boise, Idaho
- As of Fall of 2017
  - 24,154 students
  - 86% undergraduate students
- Boise State University eCampus
  - 29 fully online degrees and certificates offered
  - 43% of Boise State Students are taking 1 or more eCampus courses
The Learning Analytics Journey at eCampus Center

• The eCampus Center has been exploring the use of learning analytics for the past several years

• After drawing what we could out of built-in Bb reports, we purchased A4L in 2016

• In 2017, we worked with the Office of Information Technology to implement A4L on our university servers
Piloting A4L

• We approached one of our online programs (Multi-Disciplinary Studies) to discuss the possibilities of implementing A4L in their program

• Program Profile
  – Completely online degree completion program
  – Focused on the needs of non-traditional students (most work full-time and need flexibility)
    • 88% of students are 25+, 62% First Generation, 68% 10+ years since HS
    • Utilizes a high-touch advising model
  – A4L was piloted in 7 courses, with 7 different faculty (338 total enrollments)
Project Goals and Deliverables

Our goal was to create a set of deliverables that could be shared with other programs that wanted to utilize learning analytics.

- A set of sample reports deemed as useful by program stakeholders for ensuring online student success, with an accompanying rationale/narrative for each of the reports.
- A list of best practices and lessons learned in the online student intervention process.
- A sample workflow for using A4L in a program.
- Empirical data showing the impact of interventions.
- A research report that can be shared with other departments who may be interested in implementing analytics to bolster student success. Potentially share lessons learned with other institutions.

#BBANALYTICS
Report Building and Distribution Process

Identify Key Information from Stakeholders

- Met with stakeholders to identify key information for reports
  - Students that had not logged in
  - Students doing inferior work
  - Students considered at-risk

Identify Reports to meet the needs of Stakeholders

- Advisors
  - Advisor at a Glance Report*
  - Grade Center Exception Report*
- Faculty
  - Course at a Glance Report
  - Activity Matrix Report*

Give Appropriate Access to End Users

- Stakeholders expressed concern that information would get buried
- Set up subscriptions to the report via SSRS

* Denotes Customization
Program A4L Workflow

• With the reports in place, we worked on identifying locations in the program where interventions could be enacted with the help of A4L
  – This helped create a connection between their job responsibilities, and the capabilities of A4L
Collecting Feedback and Documenting Interventions

• We wanted to ensure that we were capturing data regarding how reports were being used
  – Attached a Qualtrics survey to every email that we sent out for documentation
  – Added a space for feedback on how the reports could be improved
Mid-term Report Survey Results

• Most faculty found the reports useful (66%), easy to understand (66%), and accurate (83%)

• 66% of faculty felt that the email subscribed reports were helpful

• Asked faculty to rank which metrics were most useful in identifying students at risk (Mean Rank – 1 meaning the most useful)
  - Logins (1.9)
  - Minutes (2.6)
  - Interactions (3.1)
  - Submissions (3.6)
  - Course Grade (3.9)
Mid-term Report Survey Results (cont.)

• Faculty were next asked open-ended questions about how A4L helped identify students at risk.
  – Faculty use a variety of methods including the gradebook and performance dashboard
  – A4L helped “in either identifying someone not on my radar or confirming what I knew”

• Faculty were asked about the benefits of A4L as opposed to existing Bb tools
  – A few faculty said that they didn’t see too many benefits
  – Comment from one faculty member “I like to know how long a student is working in and interacting with [Blackboard]. This is not always consistent with the letter grade a student might have. A student of mine this semester is working very hard in the course, but not excelling. This is interesting information for me to have in order to encourage the student and acknowledge his hard work/effort.”
Mid-term Report Survey Results (cont.)

- Future use of the A4L Reports
  - 56% of Faculty said that they were likely to use A4L reports in future
- Feedback on the use of the reports
  - Better way to deal with combined course sections
  - Filtering reports to show only those students at risk
  - More training around the use of the reports
Documented Interventions

Faculty
- Phone Call to Student: 23.1%
- Email to Faculty: 7.7%
- Email to Advisor: 11.8%
- Other: 13.2%
- No Action: 38.2%

Advisors
- Email to Student: 46.2%
- Phone Call to Student: 23.1%
- Other: 15.4%
- No Action: 7.7%
- Email to Faculty: 7.7%
- Email to Advisor: 2.7%
Examining the Impact of Interventions (on Interactions)

<table>
<thead>
<tr>
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<th>1 Week After Intervention</th>
<th>2 Weeks After Intervention</th>
<th>3 Weeks After Intervention</th>
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<tbody>
<tr>
<td>Mean Difference</td>
<td>-0.0547</td>
<td>0.0678</td>
<td>0.2289</td>
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<td>Degrees of Freedom</td>
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<td>46</td>
<td>46</td>
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<td>t-Statistic</td>
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<td>p-Value</td>
<td>0.6568</td>
<td>0.5389</td>
<td>0.0319</td>
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<tr>
<td>Significant at p &lt;.05</td>
<td>No</td>
<td>No</td>
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</table>
Year Over Year Retention

<table>
<thead>
<tr>
<th></th>
<th>Fall 2016 to Spring 2017</th>
<th>Fall 2017 to Spring 2018 (A4L in Use)</th>
<th>Difference</th>
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</thead>
<tbody>
<tr>
<td>Whole Program</td>
<td>71.73%</td>
<td>76.43%</td>
<td>4.70%</td>
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<tr>
<td>Online Only Students</td>
<td>78.26%</td>
<td>83.12%</td>
<td>4.86%</td>
</tr>
</tbody>
</table>

* Numbers Represent Fall Census Date to Spring Day 10
The Real Impact of Faculty and Advisors working with A4L

• The intervention triggered a student to resolve financial aid issues and complete documentation to receive learning accommodations in their courses

• A student was struggling financially. An advisor was able to refer them to the Dean of Students where they received emergency funding for Food

• After receiving two interventions from advisors and faculty, a student was able to get back on track in the program

• A student fell behind in their course with a major project on the horizon. Because of the intervention, they were able to hold on to a C
Lessons Learned

• A4L is a tool, not a silver bullet
• Interventions Matter (and they can be a black box)
• More infrastructure for interventions is needed
• We need to have the data governance conversation
• Support, training, and workflows are needed