Creating Framework For Connecting Learning Analytics With Course Design
Online Learning Consortium

Presenters:
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Agenda

- Overview & purpose of the project
- Establishing process
- Getting faculty buy-in
- Examples from the pilot
- Next steps (building framework, connecting efforts, etc.)
- Future considerations
Do you or your institution use learning analytics?

- Yes: 50%
- No: 50%
- Not sure: 0%
PollEv.com/alenarodick544
LA for ID List of Resources:
What one word would you use to describe learning analytics?
Learning Analytics

The measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimizing leaning and environments in which it occurs.

1st International Conference of Learning Analytics & Knowledge, Banff, Alberta 2011
<table>
<thead>
<tr>
<th>Role</th>
<th>Questions</th>
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</table>
| **Student**               | How am I doing?  
                           | How can I improve?  
                           | How do I compare to others? |
| **Instructor**            | Why did student A do so badly?  
                           | Which assignments seem to be the most difficult? |
| **Academic Support**      | How to identify learners at risk?  
                           | What interventions work best? |
| **Administration**        | How to allocate resources?  
                           | How can we improve student retention? |
| **Librarian**             | Which databases are used most often?  
                           | Which workshops are most effective? |
| **Instructional Designer**| Did the course redesign make any difference?  
                           | Which course designs work best and when? |
How do you or your institution use learning analytics?

- For student success, early alert: 48%
- For course recommendation: 10%
- For adaptive learning: 17%
- Course design: Other: 24%

Poll Everywhere
Starting Point

Online course revisions are informed by...

Faculty perspectives + experience

ID perspectives + experiences + online course quality rubrics
Goal...

Online course revisions are informed by...

- Faculty perspectives + experience
- Student experiences + learning outcomes
- ID perspectives + experiences + online course quality rubrics
Getting Faculty Buy-In
Getting Faculty Buy-In

- Pilot projects
- Preparing data carefully
- Treating data and conversations with great care and sensitivity
- Presentations to the faculty groups and committees
<table>
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<th>Asgmt 1</th>
<th>Asgmt 2</th>
<th>Forum 1</th>
<th>Forum 2</th>
<th>Forum 3</th>
<th>Asgmt 3</th>
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Activity grades
Participation
Variability within and across sections

Banner®
Demographic data
Enrollment data
Course grades/outcomes
Pilot Projects

• Undergraduate course 1 initial questions:
  ➢ completion rates
  ➢ patterns, general observations

• Findings:
  ➢ grading variance among the sections
  ➢ grading inconsistencies
  ➢ low completion and grades on certain assignments

• Resulting Action:
  ➢ revised final project
  ➢ added rubrics
  ➢ revised one assignments
Pilot Projects

• Undergraduate course 2 initial questions:
  ➢ completion rates

• Findings:
  ➢ students' grades consistently dropped in Module 2
  ➢ Identified the topics in Module 2 that may require additional support

• Action:
  ➢ synchronous support by learning coaches
Pilot Projects

• Undergraduate course 3 initial questions:
  ➢ did the course revision effect course completion rates, course grades or anything else?

• Findings:
  ➢ course grades went up

• Action:
  ➢ n/a
Pilot Projects

• Undergraduate course 4 initial questions:
  ➢ When student stop engaging or drop course 4, do they also stop engaging and drop other courses?

• Findings:
  ➢ Dropped/withdrew from course 4 and all other courses: 47.6%

• Action:
  ➢ ...
Faculty submits a request

ID & Faculty discuss the questions to be asked

ID submits ServiceNow ticket to get Moodle course data

ID submits ticket to the decision support (with Moodle data and questions)

Decision Support uses the templates to provide requested data

ID & Decision Support check the data after course revision to see the impact

ID & Faculty discuss the findings, ideas for the course and make revisions

ID reviews the course and provided data, creates visuals
Data Templates

Tabs with the following:

- Overall course completions
- Course grades by section (full grades distribution)
- Activity grades (pivot table)
Developing Framework

Analytics to Enhance the Curriculum – model from *Learning Analytics Explained* by Niall Sclater, pp.66-67
Developing Framework

Analytics to Enhance the Curriculum – model from *Learning Analytics Explained* by Niall Sclater, p.66
Next Steps

Train the ID team

Offer service on the ID site

Evaluate & refine for quantitative analysis

Strengthen processes for qualitative analysis

Promote & connect across College

Learn more, try, & experiment
Future Considerations

Learn more, try, & experiment
Future Considerations

Additional research is necessary to make informed instructional design decisions for online studies.

**Connecting data-driven decisions across the college**

Connecting Academic Support requests with courses

**Data-driven faculty professional development and support**

Communicating best practices for supporting online students; faculty are supported with information specific to online student success

**Using data for UX design and testing**

Data can help us identify problems with UX design and provide insights for testing.
User Experience (UX) is more than just how a person [Learner] interacts with a product or service [LMS]. It also encapsulates that person’s attitudes and emotions associated with that experience, as well as their perceptions of the system itself. That said, UX considers every element that shapes the experience—from the way a product [Learning Environment] provides convenience, to the way it makes a user [Student] feel. It works hand-in-hand with User Interface (UI) design, which refers to the visual design of a product or service [LMS or course].

https://www.rookieup.com/blog/data-driven-design-role-analytics-ux-design/
User Experience Process

https://uxmastery.com/resources/process/
Using Analytics in User Experience Design

Where do analytics add value to the UX process for learning design?

- **Issue Identification**
  - UX teams receive reports in order to monitor the site’s ability to meet stated goals

- **Investigation**
  - Technical Issues
  - Content and Visual Design Issue
  - Navigation

- **Triangulation**
  - Verify findings from findings from qualitative testings such as usability testing and user interviews

https://www.nngroup.com/articles/analytics-user-experience/
Future Considerations

Three uses of analytics possible from LMS data alone

Design Triangulation

Design decisions based on observations of target learners can be triangulated with analysis of learner behavior in the next offering of a course

LX Maps

Determining if learner behavior is aligning with the learner experience maps created for a course

AB/Testing

Determining which of two design choices is more effective in a course (actual offerings or learner observation sessions)
The Journal of Learning Analytics: peer-reviewed, open access journal.  


More resources to share and expand on:  