LEARNING ANALYTICS FROM A SYSTEMS PERSPECTIVE

Online Teaching and Learning Research Seminars Program
Perceptions of Learning Data in Higher Education

10 researchers from 8 Universities

ecampus.oregonstate.edu/research/opportunities/online-teaching-learning-research-seminars/cohort/
**Methodology**

Virtual Interviews:
- March – November 2020
- 59 interviews
- ~36 questions

Stakeholders:
- Administrators
- Coaches/Advisors
- Data analysts
- Diversity and Inclusion Leaders
- Instructional Designers
- Faculty
- Students
Bias in Learner Data

• To what degree are you concerned with issues of bias in the uses of learner data?

• Student Perspective (n = 20)

• 6 Categories:
  1. Degree of Concern (18)
  2. Bias Decisions in Learning Data Analysis (10)
  3. Specific Identity Markers (5)
  4. Limitations of Learner Data (5)
  5. Relationship with Stakeholders (4)
  6. Non-Learner Data (2)
Issues of Equity

8 student respondents expressed minimal or no concern

n = 20

1 student respondent made an explicit statement demonstrating a strong or high level of concern.

"Oh, I see. I'm not very concerned with it."

"I'm definitely concerned."
Data Literacy & Application

• Focused on how administrators and faculty framed their understanding and application of institutional data systems.

• Analysis Method: Thematic Coding
  • Full Interviews as Corpus
    • (n = 15)
      • 5 Administrators
      • 10 Faculty
Data Literacy: Results

What support do faculty say they need?
• Training in statistics
• Workshops and learning from peers
• Best practices for using learning data

How confident are faculty?
• Few indicate high levels of confidence in use of learning data
• Lack of confidence in the data

What skills are most important?
• Open mindedness
• Self-reflection

<table>
<thead>
<tr>
<th>Category</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Applications</td>
<td>219</td>
</tr>
<tr>
<td>Limitations of data</td>
<td>115</td>
</tr>
<tr>
<td>Data Expertise</td>
<td>54</td>
</tr>
<tr>
<td>Measures of engagement</td>
<td>48</td>
</tr>
</tbody>
</table>
Data That Should And Should Not Be Collected

- **Learning analytics:**
  Easily accessible data + actionable solutions

- **Data privacy**

- **Trustworthiness**
  involves involving those who the data are concerned

![Domain of data]

- People with privacy related to that data
- Other people with access to that data
### Student and Faculty Perceptions of Data That *Should* and *Should Not* Be Collected

<table>
<thead>
<tr>
<th>Code</th>
<th>Learner Data (data about students)</th>
<th>Instructor Data (data about faculty)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of students (N=20)</td>
<td>% of faculty (N=10)</td>
</tr>
<tr>
<td>Demographic information</td>
<td>20%</td>
<td>30%</td>
</tr>
<tr>
<td>Student satisfaction</td>
<td>50%</td>
<td>60%</td>
</tr>
<tr>
<td>Instructor satisfaction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student performance</td>
<td>50%</td>
<td>40%</td>
</tr>
<tr>
<td>Teaching performance</td>
<td>20%</td>
<td>20%</td>
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<tr>
<td>Instructor qualifications</td>
<td></td>
<td></td>
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<tr>
<td>Student engagement</td>
<td>30%</td>
<td>30%</td>
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<tr>
<td>Student educational history</td>
<td></td>
<td></td>
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<tr>
<td>Personal life information</td>
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</tbody>
</table>
Barriers to Access and Use

Stakeholder Groups

- 10 Faculty, 8 Instructional Designers, 4 Coaches/Advisors

Interview Questions Coded

- What barriers exist to the collection, analysis, and use of data at your institution? (FA, ID, CA)
- What do you consider to be the most challenging component of using data to improve learning and the student experience? (FA, ID, CA)
- Do you personally have concerns about accessing learning data? (FA)
- Do you have difficulty accessing data that you think you need to assess your students' learning? (FA)
- Do you have access to the data that you need about students’ learning? (ID, CA)
### Barriers to Use and Access

<table>
<thead>
<tr>
<th></th>
<th>Data Literacy</th>
<th>No Process / No Strategy</th>
<th>It Takes Time and Effort</th>
<th>Availability of Useful Data</th>
<th>Philosophical Resistance</th>
<th>Privacy / Security / Misuse</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faculty (n = 10)</strong></td>
<td>60.0%</td>
<td>30.0%</td>
<td>30.0%</td>
<td>100.0%</td>
<td>30.0%</td>
<td>30.0%</td>
</tr>
<tr>
<td><strong>Instructional Designers (n = 8)</strong></td>
<td>25.0%</td>
<td>75.0%</td>
<td>37.5%</td>
<td>100.0%</td>
<td>25.0%</td>
<td>12.5%</td>
</tr>
<tr>
<td><strong>Coaches (n = 4)</strong></td>
<td>75.0%</td>
<td>50.0%</td>
<td>25.0%</td>
<td>75.0%</td>
<td>50.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td><strong>Total (n = 22)</strong></td>
<td>50.0%</td>
<td>50.0%</td>
<td>31.8%</td>
<td>95.5%</td>
<td>31.8%</td>
<td>27.3%</td>
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</tbody>
</table>

### Attitudes Toward Access to Learning Data

<table>
<thead>
<tr>
<th></th>
<th>Have Access &amp; Satisfied</th>
<th>Have Access, not Satisfied with Data</th>
<th>No Access, Satisfied with Data</th>
<th>No Access, not Satisfied with Data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faculty (n = 10)</strong></td>
<td>80.0%</td>
<td>20.0%</td>
<td>0.0%</td>
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<tr>
<td><strong>Instructional Designers (n = 8)</strong></td>
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<td>0.0%</td>
</tr>
<tr>
<td><strong>Total (n = 22)</strong></td>
<td>36.4%</td>
<td>40.9%</td>
<td>9.1%</td>
<td>9.1%</td>
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</tbody>
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QUESTIONS?