Beyond Bells and Whistles: Leveraging Interactive Technologies to Enhance Online Learning

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Interaction within the Online Classroom

• Lack of physical interactions in the online space can make it difficult for instructors to gauge student engagement within their course.

• Literature on online learning encourages instructors to approach their learning activities through multiple forms of interaction (Anderson, 2004):
  • Student-content
  • Student-student
  • Student-instructor

• These types of strategies allow faculty to enhance their instructor presence, which is positively correlated with student satisfaction, engagement and learning (Bliss & Lawrence, 2009; Pawan, et al., 2003).
Interactive Technologies in the Online Classroom

- **Interactive technologies**: A software or technological tool that promotes substantive interaction with content, between students, and with the instructor.

- However, as a meta-analysis of empirical evidence on online learning found, "the way in which the medium used is more important that merely having access to it" (U.S. Department of Education, 2009).
Research Questions

How are interactive technologies used in online courses?

• What are the most prevalent interactive technologies used by instructors?
• What goals are instructors trying to achieve by incorporating interactive technologies within their class?
Data and Methods

• Data was collected as a part of a larger study of online learning at two colleges in the Virginia Community College System
  • 46 student interviews
  • 38 faculty and administrator interviews
  • 26 class observations of entry-level, high enrollment classes
    • All observations were conducted using an observation rubric
• Interviews were audio-recorded and transcribed
• Analysis is underway using qualitative coding software
<table>
<thead>
<tr>
<th>Purpose of Use</th>
<th>Audio/Video Clips</th>
<th>Slides (no A/V)</th>
<th>Recorded Lectures</th>
<th>Instructional Software</th>
<th>Chats/Discussion Boards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructions for assignments</td>
<td>X</td>
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<td>Content Delivery</td>
<td>X</td>
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<tr>
<td>Demonstration/Modeling</td>
<td>X</td>
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<td>Practice of Skills</td>
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<td>Assessment</td>
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<td>X</td>
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<td>Feedback on learning</td>
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Instructor Perspectives

• Instructors articulated that the use of interactive technologies within the classroom allowed them to vary the types of interactions students experienced and offer content in more meaningful ways.

• However, not all instructors were inclined to use interactive technologies within their classroom.
  • Time to learn new software
  • Time to prepare materials (e.g., recorded lectures)
  • Relevancy of technology within curriculum
Student Perspectives

• Preliminary analyses reveal that students tend to rate courses that incorporate the use of interactive technologies higher than those that rely on text-based materials and assignments.

  • Students felt less like they were teaching themselves

  • Students report that instructors who used a variety of course materials demonstrated greater care for the course and students

  • Students appreciated specific tools, like videos, voice recordings and chats, because it helped them “get to know the instructor”
Assessing Technology Usage

Learning Objectives

Observation Criteria

Student Interaction

Instructor Presence
Case Study 1: Modeling Math Problems

- **LiveScribe** software is used to visually and orally demonstrate how students can calculate simple interest.

<table>
<thead>
<tr>
<th>Objectives</th>
<th>To provide students with additional explanation and demonstration of key concepts each week; syllabus states that the videos are intended to “bring clarity to written material” and students are expected to view the recordings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction</td>
<td>Student-Content</td>
</tr>
<tr>
<td>Instructor Presence</td>
<td>Instructor enhances presence through video and is able to provide targeted instruction and feedback on concepts students find troublesome</td>
</tr>
</tbody>
</table>
Case Study 1: Modeling Math Problems

- Hand-written [chapter notes](#) created by the instructor

<table>
<thead>
<tr>
<th>Objectives</th>
<th>To provide students with supplemental examples of key concepts in each chapter; goals not communicated on syllabus or course site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction</td>
<td>Student-Content, though remains limited to text-based interaction</td>
</tr>
<tr>
<td>Instructor Presence</td>
<td>Instructor presence is absent; notes are static and not necessarily responsive to student questions/concerns</td>
</tr>
</tbody>
</table>
Case Study 2: Exam Reviews

- Synchronous review sessions using Adobe Connect software

<table>
<thead>
<tr>
<th>Objectives</th>
<th>To review concepts that will be covered on each exam; course site states that chats provide an opportunity to present course content in an interactive way</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction</td>
<td>Student-Content and Student-Instructor</td>
</tr>
<tr>
<td>Instructor Presence</td>
<td>Instructor communication and responsiveness are enhanced, as he is able to reinforce content while simultaneously being responsive to student questions in real-time</td>
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</tbody>
</table>
Case Study 2: Exam Reviews

- **Study guides** for exams and/or Quizzes

<table>
<thead>
<tr>
<th>Objectives</th>
<th>To provide students with list of main topics and terms to be included in exam; no instructions provided on syllabus or website</th>
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</thead>
<tbody>
<tr>
<td>Interaction</td>
<td>Student-Content, though remains limited to text-based interaction</td>
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<tr>
<td>Instructor Presence</td>
<td>Absent</td>
</tr>
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Summary of Findings

• Interactive technologies provide a viable way for instructors to enhance their teaching as well as students’ learning experience.
  • Present content in a more dynamic way
  • Provide opportunities to gauge and address student needs
  • Diversify the nature of interaction

• However, text-based content delivery and interaction dominated most of the courses observed.

• When interactive technologies were used, they were not typically integrated effectively
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