Notivate!

Helping Educational Technology Understand Student Information Sharing Behavior

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MAY 12, 2011

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In a Digital Future, Textbooks Are History

Textbooks have not gone the way of the scroll yet, but many educators say that it will not be long before they are replaced by digital versions — or supplanted altogether by lessons assembled from the wealth of free courseware, educational games, videos and projects on the Web.
“Designers design them according to their own constructivist interpretations of what collaborative learning is and what it should achieve. Educators employ them with different educational approaches and in diverse situations to achieve different ends. Students use them, sometimes very enthusiastically, but often in a perfunctory way.”

- Paul Kirschner, Professor of Educational Psychology at Open University Netherlands
“Learning, especially today, is much less about acquiring information or submitting to other people’s ideas or values, than it is about putting one’s own words to the world, or finding one’s own voice, and exchanging our ideas with others.”

- Edith Ackermann, MIT Media Lab
Our Project

Conduct Qualitative Data-Gathering & Analysis

Better understand the information sharing behaviors of undergraduates

Develop Feature-set Recommendation

Use this knowledge to propose general design principles and a feature set for e-textbooks

UCB Undergraduate Courses

E-Textbook Publishing Platform
Research Questions

- What kinds of information do undergraduates share?
- What are undergraduates’ attitudes towards sharing academic information, including their notes?
- What affects undergraduates’ decisions to study alone or in groups?
Data Collection

Grounded theory approach

- 60 hours of observation
- 17 interviews
- 300+ pages of transcriptions and notes
The Classes

Class A
- Humanities
- 70 students
- Uncurved grade

Class B
- Business
- 500 students
- Curved grade

Class C
- Environmental design
- 120 students
- Uncurved grade
17 undergrad students

- 18-26 years old
- Range: freshmen - senior
- Majors: pre-business, media studies, cognitive science, political economy, theatre, english, political science, psychology, sociology, anthropology, statistics
- Note-taking preference: laptop vs. pen & paper
- Reasons for enrollment: required to ‘just interested’
Our Findings
Information Sharing Ecosystem

Research Question 1: Kinds of information being shared
Note Sharing

Success Factors:
- Trust and reciprocity
- Trigger events:
  - Students are prompted by exams or assignments

Challenges:
- Ensuring good standing in competitive class
- Denying benefits to free riders
- Placing a high value on self-notes

Research Question 2: Attitudes towards sharing academic information
Studying Together

Success Factors:
- Structure from study guides
- Dedicated study group leaders

Challenges:
- Dedicating time to study with others
- Finding study group partners
- Arranging a time and place to meet
- Deciding what material to study and
- Negotiating roles in study group

Research Question 3: Factors affecting decision to study together or alone
Design Implications
Design Principles

- The tool should support interpersonal information sharing, but students should have control over their personally identifying information.
- Ability to choose when, how, and with whom they share their notes and other academic content.
- Should facilitate in-person study sessions.
- “Design out” distraction whenever possible.
- Easy to use.

“Well I think because we live in a very information world, I am always sensitive about sharing personal information.”
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― "Umm, yeah, I don’t really like sharing information with strangers."

― "Some people take really great notes... [others] just write down crap... I usually will only ask for notes from people who I know take good notes."
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“...I mean sometimes I’ll look at people’s notes, but usually I’ll be like ‘hey man, let’s talk about these triple integrals... what is that?’ and it’s almost like a tutoring session, you know?”
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“That’s another reason I use the computer, because if I need to go back and find something easily, that’s just an easy way to do it, rather than flipping through handwritten notes and trying to find something.”
Proposed Feature Set
Course Information Landscape

- Textbook
- Assignments
- Exams
- Internet
- Lecture Slides
- Student Collaboration
- Student Notes

Course Syllabus
Features

Stand-alone

- Self-tests
- Revealing chapter meta-data
- Chapter ratings system
- Digitize hand-written notes
- Contact importing
- Post-class notes donation
Other features are possible if e-textbooks have access:

- Syllabus-dependent features
- Note-taking reminders
- Exam reminders
- Roster-dependent features
- Study partner recommendations
- Electronic study-group sign-up sheets
- Study guide-dependent features
- Smart study guides
Notivate!

Thank You!