The use of e-Textbooks in Higher Education: A Case Study

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Overview

• Intro and trends
• Usage of e-textbooks as seen by college students
• Diffusion of technology
• Perceived benefits
• Impact on teaching and learning
• Alternatives and costs
• Focus groups
• Further research
“New Products”
Business Models & Expectations

• Changing student behavior and changing nature of textbooks
• Buy, rent (book or chapter), time limited access, ability to edit
• Role of publishers, print on demand
• Improve learning outcomes
• Improve productivity
• Reduce costs
U. S. Trends

• e-books:
  $500M sales, 8-10% share, >150% growth

• e-textbooks in higher education >3%, within 7 years market domination

• ~ 20% of students purchased an e-textbook
U.S. E-textbook Sales

Initiatives

• Open Course Library
  - Matching grant Bill and Melinda Gates
  - College course materials under $30
  - 42 Courses completed

• Next Generation Learning Challenges (NGLC)

• Orange Grove Texts Plus Project, FL

• OpenCourseWare
  - University of Tuebingen
  - MIT 2002
Reinventing Textbooks

iTunes U Course Materials
- Audio and video
- Presentations
- Documents
- PDFs
- iBooks textbooks for iPad
- ePub books
- iOS apps
- Web links

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- iPad

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Adoption of Technology

• Drivers for change (Chwelos, 2001)
  - Inter-organizational
  - Organizational
  - Technological

• Ownership of technological products tends to stimulate the use of functionally similar products (Atkin & LaRose, 1994)
Hardware Evolution
Usage and Benefits

• e-book types (Polanka, 2011):
e-textbook, e-references, e-literature, e-monograph (in series)

• Benefits (Gunter, 2005):
easy to obtain, cheaper, ability to search and annotate, primarily for reference and less for leisure reading
Usage and Benefits

• Advantages and Disadvantages (Jamali, 2009):
  
  + ability to search
  + online access
  + cost, portability

  - access (time), technical difficulties
  - format, printing, download
Usage and Benefits

• Other aspects *(Turner, 2005)*:
  - + interactivity, background info
  - + music, animation, hyperlinks
  - + maps, 3D technology

  - need computer skills & credit card
  - reliant on technology
Usage and Benefits

• Other aspects (Ardito, 2000):
  + easier to update content
  - quality control
  - cost of the device
  - DRM, download & printing

• Devices (Aaltonen, 2011):
  - e-ink ‘rough’
  - response time
Teaching & Learning

• Depends on usefulness, ease of use, interactive content, navigation.

• Motivation is key factor for comprehension.

• Students think technology delivers greater performance, better at masters level (O’Donnell, 2008)
Teaching & Learning

• Positive impact of e-textbooks depends on appropriate integration in learning environment. Skills of instructors. (Sun, 2012)

• Individualizing the learning experience. Improve and explore. Substitute for lectures. Better communication with instructor and among peers. (Arend; Tanguna)
Teaching & Learning

• How do instructors use and introduce e-textbooks? Technology not experienced, effort needed.

• The spoken word and later books were the only way to transfer knowledge. What is the potential of this new technology, how should it be used?
E-textbook Providers

(Pearson, Cengage, McGraw Hill, Wiley...)

(edit)

(20M out of 130M)
Ngram Viewer

Graph these case-sensitive comma-separated phrases: ebooks, amazon
between 1800 and 2008 from the corpus English with smoothing of 3.
eTextbook: Statistical Techniques in Business and Economics

Author(s): Lind, Douglas; Marchal, William
ISBN 10: 0073401803, See all ISBNs
ISBN 13: 9780073401805
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Publisher: McGraw-Hill Higher Education
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Learning Management System (LMS)

Hardware & Costs

• More content was delivered to a variety of mobile devices compared to traditional computers and laptops. (Sandvine, 2012)
• Typical cost of textbooks can be cut in half. (Rickman, 2009)
• Additional cost for tablet computer can be paid for with e-textbook savings.
Focus Group Methodology

• Five to six students in three groups with three facilitators
• 90 minutes, recorded
• Interview Guide
• Qualitative, ‘open-ended’
Focus Group Methodology

1. Definition of “e-textbook”
2. Where do you see yourself based on time of adoption of technology?
3. Opening:
   - How do you feel about this new world of technology and the way we communicate?
   - What are your thoughts about e-textbooks?
4. Awareness of different textbook options.
Focus Group Methodology

5. Should professors introduce different formats of textbooks?
6. How are e-textbooks being used in your program?
7. Best equipment?
8. Reading from a screen?
9. Impact on learning?
10. Rank advantages and disadvantages
11. Where do you see yourself based on time of adoption of technology?
Focus Group Summary

• Where do you see yourself based on time of adoption of technology?
Focus Group Summary

• How do you feel about this new world of technology and the way we communicate?
  + aiding globalization
  + opportunities to sell products
  + communicate with friends and family
  - privacy
  - less personal interactions
  - no body-language
  - no downtime
Focus Group Summary

• Awareness of different textbook options
  - some limited knowledge about where to buy e-textbooks or if available.
  - all believed that instructor plays key role in utilizing e-textbooks
Focus Group Summary

• How are e-textbooks being used in your program?
  - different in each department/course
  - some books come as bundle, required
  - some instructors get irritated when students use computer
  - common to look up definitions
Focus Group Summary

• Best equipment?

  + tablet computer
  + cost ok if used for several classes

  - get tired reading from screen
  - possible distraction
  - limitation due to one screen
Focus Group Summary

• Impact on learning?
  + hyperlinks and videos
  + do not have to ask instructor
  + link to need part of text
Focus Group Summary

• Advantages/Disadvantages

  + convenient, cheaper, searchable, portable

  - Internet needed, temporary access, different layout, reading tiring
Focus Group Summary

• Where do you see yourself based on time of adoption of technology? (Gartner Hype-Cycle)
Conclusion

• Instructors and course design
• Institutional purchasing
• Content, rights management and hardware
• Technology diffusion models offer framework for assessment
Further research

• Influence of instructor and administration in the process of e-textbook use
• Future of College bookstores and different usage pattern by departments
• How does use of technology in High School influence use of e-textbooks in College?
• Impact on learning