Using Blended Learning to Increase Student Engagement

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March 14, 2014
What is Blended Learning?
What is Blended Learning?

- A **combination** of online and classroom learning
- Mix of *traditional classroom instruction* and instruction *mediated* by technology

Examples:
- A *flipped* classroom
  - *Acquire knowledge* outside (i.e. before and after) class
  - Focus on *active learning & problem solving* in the classroom
- *Supplement* traditional coursework with online media *in* the classroom
- *Alternate* between online and classroom instruction
Why Blended Learning?

• Is *blended learning* **effective**?
  – United States Department of Education
    • Found some evidence indicating blended learning is more *effective* than *either* *face to face* or *online learning* by themselves
  – Meta-analysis by Means et al. (2013)
    • Results were mixed
    • Among 51 individual study effects, 11 were significantly positive, favoring the online or blended learning condition
Why Blended Learning?

- Is **blended learning effective**?
  - University of Missouri School of Health
    - None of the variables show a statistically significant difference (p=0.05).
    - No other positive relationships in course outcomes, student satisfaction or subjective comments.
    - Blended approach is **at least as effective** as a traditional classroom environment.
    - Read more at [http://campustechology.com/articles/2008/09/is-blended-learning-effective.aspx](http://campustechology.com/articles/2008/09/is-blended-learning-effective.aspx)
Application to IST 241 (E-commerce)

• Research question
  – Does **blended learning** increase student engagement and satisfaction?

• Application to a **medium-to-large class size** of more than 40 undergraduate students
  – Department of Business & Information Technology
  – Core course in IST (Information Science & Tech)
  – Subject: Electronic & Mobile Commerce
    • Concepts related to e-commerce & m-commerce
    • Real-world cases on e-commerce & m-commerce
Research Design

• Experimental research design
  – Comparison groups comprising:
    • **Spring 2013**: Instructor-led Face to Face Instruction (47 students)
    • **Fall 2013**: Blended-approach (15 students)
    • **Spring 2014**: Blended-approach (42 students)
  – Main focus is to compare Spring 2013 and Spring 2014 semesters to examine effects of blended learning
## Implementation of Blended Learning

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## Module Introduction and Overview

Module 1 covers introduction and trends in electronic and mobile commerce.

### Watch Videos

<table>
<thead>
<tr>
<th>Video</th>
<th>Description</th>
<th>Duration</th>
<th>User</th>
<th>Added</th>
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<tbody>
<tr>
<td><img src="image1.png" alt="Video" /></td>
<td>e-commerce - evolution</td>
<td>(6:51)</td>
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### Assigned Readings

1. E-commerce Trends Point to Brighter Future

2. How is E-commerce Likely to Evolve?
   - [http://econsultancy.com/us/blog/62927-how-is-ecommerce-likely-to-evolve-five-key-trends](http://econsultancy.com/us/blog/62927-how-is-ecommerce-likely-to-evolve-five-key-trends)

3. Eight Emerging Trends in E-commerce Technology

4. Emerging Trends of Mobile Commerce in 2013
Watch Videos

E-commerce - Evolution
Duration: (6:51)
User: sandeechagger - Added: 2/28/07
YouTube URL: http://www.youtube.com/watch?v=LW4X3b_i0eE

How to Win the eCommerce Retail Revolution
Duration: (5:37)
User: supplychainer - Added: 5/31/13
YouTube URL: http://www.youtube.com/watch?v=m41-LPMuIWw

Embracing the Spirit of Entrepreneurship, with China's E-Commerce Titan Jack Ma (Part 2 of 8)
Duration: (9:21)
User: teamalibaba - Added: 9/20/10
YouTube URL: http://www.youtube.com/watch?v=9BSCX86wZHi

Assigned Readings

Chapter 1
Chapter 1 Powerpoint Slides for Class
Chapter 1 Study Guide Questions
Module 4 - Week 5

Module Introduction and Overview
Module 4 covers mobile apps and mobile web sites.

Watch Videos

Mobile Websites vs Mobile Apps: What's the difference? Which is best for my business?
Duration: (2:24)
User: myappscafe - Added: 9/4/13
YouTube URL: http://www.youtube.com/watch?v=ne_5U0m2y

Web App vs Native App
Duration: (2:04)
User: floportmobile - Added: 5/14/13
YouTube URL: http://www.youtube.com/watch?v=6yiORXzAVic

Assigned Readings
Chapter 3 (pp. 178-181), Chapter 4 (pp. 237-246) & End-of-Chapter Case on Orbitz
Powerpoint Slides for Class
Implementation of Blended Learning

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Which type of e-commerce has the largest market?

A. B2C  
B. B2B  
C. C2C  
D. Mobile  
E. Social  
F. Local
Which of the following describes “why should customers buy from you”?

A. Value proposition
B. Revenue model
C. Market opportunity
D. Competitive advantage
E. Market strategy
When suppliers have the (or high) ability to influence the prices they charge for supplies, we say the supplier power is _________.

A. low
B. high
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### Forum: Week 5 Reflections / Discussions (Due: 2/23)

Organize Forum Threads on this page and apply settings to several or all threads. Threads are listed in a tabular format. The Threads can be sorted by clicking the column title or the caret at the top of each column. More Help

Create Thread  Grade Discussion Forum  Subscribe

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# Implementation of Blended Learning

**Non-blended**

- Lecture-based learning

**Blended**

- **Before class**
  - Students instructed to view video clips on specific concepts

- **In-class**
  - Use of clicker questions
  - More case analysis discussions

- **After class**
  - Blackboard discussion board

- **End-of-semester**
  - Group project to illustrate application of business model in e-commerce / m-commerce

Students came to class prepared to take quizzes on the assigned readings.
**Key Activities**
- R&D
- Custom support for enterprise users
- Support archive for consumer users
- Production and maintenance of units

**Key Partners**
- Affiliate companies
- Enterprise users
- Manufacturers

**Key Resources**
- Engineers
- Manufacturing Partner

**Value Propositions**
- Diving experience
- Image recognition
- High quality camera
- Long life battery
- Tank pressure display
- Safety

**Customer Relationships**
- Communities
- Co-creation

**Channels**
- Direct

**Customer Segments**
- Marine Biologists
- Scuba Diving Schools
- Vacationers
- Resorts and Cruises

**Cost Structure**
- R&D,
- Fixed Costs
- Variable Costs

**Revenue Streams**
- Sales, Advertising
- Rental units for private enterprises
- Collect royalties when units are rented out
Quantitative Assessment (Spring 2013 vs Spring 2014)

• Student performance in mid-term exam
  – Improvement: 4 out of 12 mid-term exam questions
    • 12 common questions across both semesters
    • Chi-square tests indicate statistically significant improvement in 4 questions (i.e., p<0.05)

• Survey results based on t-tests (all are significant at p<0.05)
  – Improved satisfaction with course
  – Increased cognitive engagement
  – Greater perceived interaction with instructor
  – Greater student-student interaction
Qualitative Assessment (Spring 2013 vs Spring 2014)

• Qualitative feedback from students
  – Students like the use of video clips to illustrate and explain difficult concepts (i.e., before and during class)
  – Students like more case discussions in class
  – Feedback on use of Blackboard discussion board was mixed
    • Some like out-of-class discussions while a greater number of others dislike it because of the additional work
      – see next slide
  – Students indicate group work takes too much time
Challenges Faced

• **Time spent by instructor**
  – Being an *active participant* on Blackboard discussion board facilitates student participation
  – Searching for suitable video clips
  – Recording customized video clips
  – Setting up clicker questions

• **Students tend to dislike group work**
  – Due to commitment of time and coordination issues
  – Social loafing

• **Several students find participation on Blackboard discussion board a burden (rather than a benefit)**
Conclusion

• Application of blended learning is **rewarding**
  – Students are more *highly engaged* in class
  – Students are more *participative* in class
  – *Active learning* is carried out in class
  – *Immediate feedback* is provided thru' clickers

• Future Improvement/Plan
  – More customized video clips
  – More personalized video clips
  – More involvement of technology transfer office
Comments, Questions and Suggestions?

Acknowledgements:
• CERTI (Center for Educational Research and Teaching Innovation) for the educational research mini-grant
• Provost Office and Ed Tech for eFellows Tier 2 support
• IRB (Institutional Review Board) for approval of the research project
• IST 241 students for filling out the questionnaire for this research