Transforming a Large-Lecture Hall Course by Adding an Active Learning Web-Enhanced Component

Presented By:
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Denise Kreiger, M.Ed. is an Instructional Design and Technology Specialist in the School of Communication and Information (SC&I) at Rutgers University. Denise supports approximately 260 instructors – full-time faculty, part-time faculty, staff, and doctoral students – to design, develop, and teach courses in a variety of delivery formats – classroom-based, web-enhanced, hybrid, and fully online.
Transforming the Recipe . . .

I’d really like to try something new with my large-lecture hall course . . .

Yeah, I’d like to make mine more student-centered and engaging, but how?

Girlfriends, we need some new, fresh ingredients in our recipe!

(image source: Shutterstock, http://shutterstock.com/)
Today’s Topics . . .

- Background on the large-lecture hall “gateway” course for the undergraduate Information Technology and Informatics (ITI) major at Rutgers.

- Collaboration and Course Re-Design and Development and Goals

- We’ll focus on 2 key course projects that incorporate active learning:
  - Hashtag Activism Movement Project (and its evolution!)
  - Emerging Technology Innovations Infographic Project

- Key Outcomes of the Course Redesign and Lessons Learned

- Audience Q & A
“Gateway” course for the undergraduate Information Technology and Informatics (ITI) major at Rutgers.

High-enrollment course - 450 students! - offered each semester.

Offered to SC&I students and Rutgers-wide students (course is part of the Rutgers Core Curriculum).

(2) scheduled Face-to-Face classes each week.

Large auditorium setting; lecture-based.

Traditional assessments (papers & exams)

Little opportunity for engaging, socially-connected learning that incorporates the use of technology.
Collaborative Partnership: Course Instructor & ID

- Course instructor/ITI Program Director (Sharon) and SC&I’s instructional designer/technologist (Denise) partnered to redesign the course in a new direction.

- 6-month intensive course redesign/development project in Spring-Summer 2014

- New redesign was launched in Fall 2014 and continued in Spring, Summer, Fall 2015 and 2016.
New Instructional Goals . . .

- Move towards student-centered learning
- Add engaging, socially-connected, learning opportunities
- Provide ‘hands-on’ experience using technologies
- Update “content”
- Add a robust “online” component to complement the classroom . . .
The course is structured into units (each unit is ~ week) and includes ALL in-class & post-class materials, activities, & assessments.

For example, **Unit 5/Week 5** includes lectures, readings, activities, and assignments (e.g., Discussion Board, Dropbox assignments, etc.).
Redesigned Course Assessments . . .

Key Assessments include:

- In-Class Participation (iClickers)
- Google Gotcha! Activity/Discussion Board
- Hashtag Activism Collaborative Wiki Project (groups)
- Emerging Tech. Innovations Infographic Project (individual)
- Midterm Exam (Scantron/traditional)

. . . And **Rubrics** were designed for all key assessments to communicate expectations and to ensure consistent, objective grading among the instructor and the 5 Graders.
Now, We’ll Focus on the Hashtag Activism Project . . .

Key Assessments include:

• In-Class Participation (iClickers)
• Google Gotcha! Activity/Discussion Board
• Hashtag Activism Collaborative Wiki Project (groups)
• Emerging Tech. Innovations “Infographic” Project (individual)
• Midterm Exam (Scantron/traditional)

(image source: Shutterstock, http://shutterstock.com/)
Evolution of the Hashtag Activism Project . . .

### Fall 2014

<table>
<thead>
<tr>
<th>Hashtag Activism Project</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Collaborative group project</td>
<td>Research &amp; Write Annotated Bibliography for Hashtag Movement in Wikispaces</td>
<td>Develop Collaborative Hashtag Activism Wiki Page in Wikispaces. <strong>Topics:</strong></td>
<td>Peer-Review group Hashtag Wiki Projects:</td>
</tr>
<tr>
<td>• 56 student groups</td>
<td>• 16 research sources from library databases/per group</td>
<td>• Activism Movement Overview</td>
<td>• View wiki projects in Wikispaces</td>
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<tr>
<td>• 8 students/group</td>
<td>• + 8 research sources from Twitter #hashtag page on activism topic</td>
<td>• Chronology of Major Events</td>
<td>• Peer-review (critique) wiki projects in Discussion Board</td>
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<tr>
<td>• 6 groups worked on same Hashtag movement</td>
<td>• Total 24 research sources/per group</td>
<td>• Impact of Social Network in Movement</td>
<td></td>
</tr>
<tr>
<td>• 10 Hashtag movements</td>
<td></td>
<td>• Movement Update</td>
<td></td>
</tr>
<tr>
<td>• Worked in “Wikispaces”</td>
<td></td>
<td>• Future Implications of Social Networks in Society</td>
<td></td>
</tr>
</tbody>
</table>

**Challenges:** Wikispaces management of 450 students (‘herding cats’); collaborative grading
Evolution of the Hashtag Activism Project . . .

<table>
<thead>
<tr>
<th>Name</th>
<th>Events</th>
<th>Permissions</th>
<th>Created By</th>
<th>Created</th>
</tr>
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<td>May 27, 2014</td>
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<tr>
<td>Tunisia Revolution Wiki Project</td>
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<td>dkreigert1</td>
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Evolution of the Hashtag Activism Collaborative Wiki Project . . .

Fall 2014 – Sample Wiki Group Project

The student Wiki projects were quite impressive despite the challenges!

Overview of Movement

Throughout the years, there has been different techniques used to get information out to the world. Social media sites were a recent change that could make certain topics known to millions of people over night. An example of this is the 30 minute video, Kony 2012, that Invisible Children posted onto Youtube in 2012 (Karlin & Matthew, 2012, p. 266). The video highlighted the malicious acts of the Ugandan rebel, Joseph Kony, who led an army of children called Lord’s Resistance Army (Craine, 2012, p. 1). Kony believed that spirits were coming to him in his sleep and were ordering him to invade villages and cause havoc (Craine, 2012, p. 1). In response to this, he began brainwashing children into joining his army and becoming soldiers and sex slaves (Craine, 2012, p. 1). Around 24,000 children were enslaved while over 10,000 people were killed throughout this epidemic of violence (Craine, 2012, p. 1). Invisible Children's goal was to spread this information around the world in hopes to make a difference through activism and have Kony arrested. With the power of social media sites this video has almost amassed over one hundred million views today (Karlin & Matthew, 2012, p. 256). Invisible Children were able to use social media sites, like Twitter, to contact policy makers and celebrity’s to help spread the word about the Kony’s ludicrous actions that needed to be stopped (Karlin & Matthew, 2012, p. 259). They also asked people to buy t-shirts and posters that advertised Kony so that it was impossible to be unaware of who he was (Karlin & Matthew, 2012, p. 259). All of these efforts were made in hopes that people who lived small lives could together to make a big difference.
# Evolution of the Hashtag Activism Project . . .

## Spring 2015 – Spring 2016

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<tr>
<td>• Individual project</td>
<td>Research &amp; write Annotated Bibliography for Hashtag Movement. Each student: • 7 research sources from library databases/per group • + 1 research source from Twitter #hashtag page on activism topic • Total 8-10 research sources • Submit to a Dropbox</td>
<td>Collaborative Hashtag Activism in Discussion Board. <strong>Topics:</strong> • Major Events, Reactions, &amp; Protests • Disruptive Effects of the Movement • Movement Update • Reference List (~ first half of group wiki page)</td>
<td>Collaborative Hashtag Activism in Discussion Board. <strong>Topics:</strong> • Impact of Social Network in Movement • Future Implications of Social Networks in Society • Reference List (~ second half of group wiki page)</td>
</tr>
<tr>
<td>• 30 student groups</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>• 15 students/group</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>• 2 groups worked on same Hashtag movement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 15 Hashtag movements</td>
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**Challenges:** Having all of the collaborative parts in “text-based” Discussion Boards lacked the “richness and engagement” of the group “Wiki” project.
Evolution of the Hashtag Activism Project . . .

**Fall 2016**

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| • Individual project     | Research & write Annotated Bibliography for Hashtag Movement. Each student:  
| • 30 student groups      | • 7 research sources from library databases/per group  
| • 15 students/group      | • +1 research source from Twitter #hashtag page on activism topic  
| • 2 groups worked on same Hashtag movement | • Total 8-10 research sources  
| • 15 Hashtag movements   | • Submit to a Dropbox (~ same as previous) | Collaborative Hashtag Activism in Discussion Board. **Topics:**  
|                           |         | • Major Events, Reactions, & Protests  
|                           |         | • Disruptive Effects of the Movement  
|                           |         | • Movement Update  
|                           |         | **New Tool!** Students use Dipity tool to create an interactive online timeline and discuss in Discussion Board. |

**Potential Gains:** Active engagement in researching and synthesizing content, working with new technology tools, and collaborating with peers in discussion boards for all 450 students!
Fall 2016 – Sample Dipity Interactive Timeline

Sample annotation with image
Now, We’ll Focus on the Technology Innovations Infographic Project

Key Assessments include:

- In-Class Participation (iClickers)
- Google Gotcha! Activity/Discussion Board
- Hashtag Activism Collaborative Wiki Project (groups)
- Emerging Tech. Innovations “Infographic” Project (individual)
- Midterm Exam (Scantron/traditional)

(image source: Shutterstock, http://shutterstock.com/)
What’s an “Infographic”?

An Infographic blends:
• Text
• Statistics
• Illustrations and visual images
to tell a Data-Driven Story.

Let’s look at an example . . .
What’s an “Infographic”?

As shown in the “Google Yourself Challenge” Infographic (left), infographics are a great way to consume information easily.

They . . .

• Are eye-catching and visually engaging

• Can simplify complex, scientific, or abstract information into a clear message

• Can attract and inform a large or target audience

• Can be created in a digital format and readily shared with anyone
What’s an “Infographic”?

A digital infographic is an emerging tactic that has been successfully used across industries for different purposes (e.g., increase public awareness, marketing, tracking trends, etc.).

They have become increasingly popular due to the growth of highly visual social media channels like Facebook, Instagram, and Pinterest.

And….
Infographics for Academic Coursework

Infographics can make an engaging **inquiry-based project**!

Where your students go beyond “content consumers” to become “**active content creators and curators**” . . .

As they learn about the concept of **information visualization** and **conducting research to analyze and synthesize information** to arrive at their own **unique data-driven story**.

And, that’s just what we did!
Emerging Technology Innovations Infographic Project

- End-of-semester culminating project
- Each student creates a digital Infographic using the **Piktochart** web-based tool
- Students select an emerging technology, a target audience, AND identify an overarching “question” for inquiry
- Requires students to research, analyze, and synthesize information to effectively communicate their ‘message’ and meet certain criteria
- Infographic integrates text, statistics, visual images & illustrations to tell a unique data-driven story

In Week 14 of the course, the ‘Top 5’ Infographics (and honorable mentions) were revealed in-class to celebrate students’ achievements.

**Final projects exceeded expectations!**

Sample students’ “exemplary” Infographics:

- **Social Media**
  [https://magic.piktochart.com/output/3580259-untitled-infographic](https://magic.piktochart.com/output/3580259-untitled-infographic)

- **3D Printing: Transplanting Bio-Printed Organs**
  [https://magic.piktochart.com/output/3694837-iti-infographic-3d-printing](https://magic.piktochart.com/output/3694837-iti-infographic-3d-printing)

- **Gamification in the Workplace**
Students embraced the Infographic Project with enthusiasm, interest, and pride in what they produced, which could be shared with their friends, family, and/or prospective employers and internships! (image source: Shutterstock, http://www.shutterstock.com)
“I liked the infographic project the most because you were able to choose your own technology and be as creative as you wanted.”

“My favorite part about the course was the infographic project. It was enjoyable way to apply the research skills and concepts we learned throughout the course.”

“I liked the infographic project – all the skills to put on a resume and show diverse work.”

“I feel that I was able to get creative with the Infographic and that I am now enabled to make another one in the future.”
Student Outcomes – Quantitative (40-question Survey at end-of-course using Qualtrics - anonymous)

- 78% of students responded – Strongly Agree or Agree
- 81% of students responded – Strongly Agree or Agree
- 76% of students responded – Strongly Agree or Agree
Lessons Learned . . .

- Developing a well-designed/structured “online” environment that includes the in-class AND post-class components is KEY to incorporating active learning in a large-lecture hall course.

- Faculty collaborating with instructional designers/technologists to design/redesign courses can be a very rewarding partnership.

- Group online projects that work well in a smaller class (e.g., 25, 40, 90 students) do not necessarily scale up effectively for 450 students if there is no opportunity for in-class working sessions in a fixed seating auditorium.

  **Note:** The Hashtag Activism Movement Group Project has been successfully implemented in summer session courses with 40 and 90 students in a class.

- Overcoming the “lecture hall” mindset is a challenge: students don’t expect ‘active learning’ in a large lecture hall class.

- Active learning requires ‘extra work’ for the instructor and the students; however, the rewards for students are richer, deeper, and more meaningful learning.

- In a technology-related course, having hands-on experiences with technology is essential.
See our research-based journal article:


On the RUcore Rutgers University Community Repository
Any Questions? . . .
Feel free to contact us at:

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Denise Kreiger: dkreiger@rutgers.edu