

COVER PAGE

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Article Title: Instruction in transition: Using i-Pad-driven problem-based learning to enhance the freshman experience

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INSTRUCTION IN TRANSITION: USING IPAD DRIVEN PROBLEM BASED LEARNING TO ENHANCE THE FRESHMAN EXPERIENCE

RACHEL W. GAMMONS, MELISSA GOLD, AND KATIE STEWART.

INTRODUCTION

Intended to facilitate the transition from secondary to higher education, First Year Experience (FYE) Courses have been linked to increased retention rates, higher levels of satisfaction, and a more developed sense of belonging among students (Purdie 2010). Due to their transitional function, these courses are often marked by an emphasis on institutional culture, community, and academic well-being, and frequently include collaborations with campus partners. Despite a lack of research-based assignments, librarians are often invited to participate in FYE instruction as part of a larger rotation of resources such as Student Affairs, Academic Advising, and Counseling Centers, among others. Without a credit-bearing assignment, librarians are faced with the challenge of effectively preparing students for college level research in an abstract, disconnected, and inauthentic learning space.

To meet this challenge, Millersville University (MU) librarians have combined Problem Based Learning (PBL) with innovative technology solutions to create an FYE activity that is engaging, collaborative, and instructive. Designed specifically for use on an iPad with the iBooks app, the FYE PBL activity leverages the mobility and interactivity of the tablet to engage students in the learning process. In the LOEX 2014 workshop, attendees were guided through development, creation, and application of an information-literacy-focused iBook. Rather than focusing on the pedagogical foundations of PBL, which have been covered exceptionally well at LOEX conferences in the past, the workshop emphasized the application and utilization of iBooks and iTunes U as platforms for PBL activities. Our goals for the workshop were for participants to be able to:

1. Choose a PBL activity that is appropriate for an FYE course in order to create a meaningful learning experience
2. Identify components of a PBL activity in order to break the activity into assessable parts
3. Create and share a PBL activity (and other instructional materials) using iBooks and iTunes U

BACKGROUND: PROBLEM-BASED LEARNING & FIRST YEAR EXPERIENCE AT MILLERSVILLE

Like many universities, MU's FYE program centers around a three-credit seminar course (UNIV 103) intended to transition students from high school to college. Although the UNIV103 courses lack a cohesive research-based assignment, many professors request information literacy instruction as a way to introduce their students to the library's resources and services. In an effort to create a more engaging learning space, MU librarians have transitioned the FYE information literacy instruction from a general "overview" of library resources to a specific PBL activity designed specifically for first year students. Because the PBL activity can be completed in a single 50 minute session, it can be utilized with or without a research-based course assignment, allowing librarians to teach to a standard set of learning outcomes for each UNIV 103 session.

To make the session as interactive as possible, the FYE PBL activity is designed for a tablet environment. In summer 2013, the Learning Design Librarian created an iBook template using iBooks Author, a freely available software for iOS, that could be modified for multiple types of PBL activities. In fall 2013, the PBL iBooks were added to a classroom set of 25 iPads using a custom designed iTunes U course. The FYE PBL activity was piloted over the fall semester, with small improvements being made after each UNIV 103 session. The activity is now integrated into the MU information literacy curriculum.

The FYE PBL iBooks introduce a problem scenario and challenge students to work together to find a solution to the “issue.” Although fictitious, the problem scenarios focus on contemporary issues impacting the academic and personal lives of students. For example, the problem scenario used in the majority of UNIV 103 courses centers around alcohol consumption:

At an upcoming council meeting, Millersville University administrators will be considering transitioning the university from a dry campus to one that allows alcohol. As president of the student council, it is your job to convince the administration of why this is, or is not, a good idea.

After the problem is introduced, students are given detailed guidelines regarding how to complete the activity such as what types of resources to find, who to work with, and how long to spend on the activity (Appendix A). The remaining iBook pages contain links, screenshots, and tutorials designed to guide students through specific tasks like navigating to the library website, using Academic Search Complete, and understanding the difference between certain types of information (e.g. scholarly vs. popular articles). The completed PBL iBooks are housed in an MU iTunes U course. In each FYE information literacy session, students are provided with individual iPads, which are pre-enrolled in the iTunes U course and include the PBL iBooks. At the end of the session, students share their results with the class, paying close attention to the information they used to make their final decisions and the pathways they took to locate that information.

Advantages

One benefit of the iPad-driven PBL activities is the preparation time for librarians. Rather than creating custom activities for each UNIV 103 section (e.g., one for a UNIV 103 course with psychology majors and another for a UNIV 103 course with science majors), librarians are able to quickly adapt the general PBL iBooks template to fit individual needs. For example, at MU, the science librarian created a discipline-appropriate PBL activity by supplementing the general PBL (Appendix A) with a science-specific problem scenario (“Should MU allow fracking on its campus?”). Although the basic template remained the same, the science focus made the PBL activity appropriate for UNIV 103 courses designed specifically for science majors. This customization allows for future growth of the program without having to constantly develop new activities.

Students also appreciate the interactivity of the iPad-driven sessions. As librarians implement a “guide on the side” approach, students are put in charge of their own learning experiences and move through the PBL activity at their own pace while engaging actively with their peers. Rather than delivering lecture-based content, the librarians circulate the room and provide assistance when and where it might be needed. Many of the library instructors have noted that the portable nature of the iPad allows students to not only share the content on their screen, but also swap iPads as they work. The self-pacing also makes it easier for students with different skill levels to complete the activity successfully.

In fall 2013, MU librarians conducted a post-assessment for students and faculty who participated in an iPad PBL session. Of 226 students surveyed, 93% (n=210) agreed that iPads contributed positively to their learning experience(s) and allowed them to gain “hands-on experience.” Only 7% (n=10) found the technology difficult to use. Of the 6 faculty members surveyed, 100% (n=6) agreed that iPads contributed “positively to the learning experience” of their students, were “appropriate for the research levels of their students,” and allowed students to “gain hands-on experience.” 83% (n=5) rated the problem-based learning activity as “excellent,” and 17% (n=1) as “good.” Also, when responses from the iPad PBL sessions were compared to laptop sessions, both faculty members and students reported comparable rates of learning and engagement.

Table 1: Average faculty responses in iPad instruction sessions vs. laptops sessions

Table 2: Average student responses in iPad instruction sessions vs. laptops sessions

Limitations:

Although the preparation time for individual sessions is minimized, creating the initial PBL iBook template involves time and effort. This programmatic approach works well for frequently taught courses or workshops, such as UNIV 103, but it would be more difficult for individual or specialized sessions. If a librarian is unfamiliar with iBooks or iPads, training in iBooks Author and/or iTunes U may be necessary before the materials can be created. The activity is also bound by the specific technology in that the iBooks Author application is the only way to create an iBook, and it is only available on Apple computers. To share the activity via iTunes U, students must also have access to a mobile device with iOS, as the app is not available for laptops or android devices.

LOEX 2014 WORKSHOP

The LOEX Workshop focused on the skills needed to develop, create, and apply an information literacy focused iBook. Materials included a [brief presentation](#), three worksheets (Appendix B-D) and an accompanying iTunes U course, designed by the presenters specifically for the LOEX session. The workshop session was divided into four distinct parts:

1. Overview of PBL iBooks, provided in iTunes U Course
2. Designing an FYE PBL problem problem scenario (Appendix B)
3. Creating an iBook “storyboard” for a PBL activity (Appendix C)
4. Drafting iBook pages (Appendix D).

Learning Outcomes and Problem Scenario

After reviewing two PBL iBook examples provided by the presenters, participants began the process of creating their own PBL activities. The problem scenario worksheet (Appendix B) focused not only on writing learning outcomes, but also on writing an appropriate problem scenario for FYE students. Participants were asked to brainstorm issues of interest and relevance to first year students. They were also provided with a checklist to ensure that their scenarios met the criteria for a PBL activity, such as making sure that the issues have “more than one solution” and that “students will be able to locate enough information” about the issues (Appendix B). The activity concluded with participants selecting one of their brainstormed ideas and translating it into a well-worded problem scenario.

iBook Storyboarding

The third portion of the workshop focused on storyboarding the PBL activity for their iBook. The accompanying worksheet featured a series of colored boxes to represent each “page” of their iBook (Appendix C). Participants were encouraged to consider the steps that might be included on the individual pages of their iBook based on the learning outcomes and problem scenario established on Worksheet #2 (Appendix B). Participants were provided with an example page (“Introductory Page”) outlining sample items that might be included on the first page of a PBL iBook: a description of the problem scenario, a relevant picture, and a link to the library website. Attendees were encouraged to generate content for as many pages as possible before moving on to the design and layout of specific pages.

Page Design

The final set of worksheets were intended to get participants thinking about the visual layout of their iBook pages (Appendix D). In order to inspire maximum creativity, the pages were designed to resemble blank iPad screens. Participants designed each of the iBook pages as they would in iBooks Author, paying careful attention to where images, text, and other content might be placed in order to maximize student engagement and guide students through the various steps of the activity. Each participant was also provided with a sheet of stickers depicting common forms of interactive instructional material that would be available in an iBook format such as videos, audio, images, quizzes, and checklists. In addition to their illustrations, participants were encouraged to use the stickers as graphic representations on their worksheets.

Attendee Feedback

Throughout the workshop, the presenters included several opportunities for group discussion and feedback. After examining iBooks created by MU librarians, attendees were provided with the following discussion questions in order to encourage brainstorming about their own potential PBL activities:

- What does an iBook allow you to do that is different than a worksheet?
- What stands out as unique or exciting?
- What teaching materials do you already have (tutorials, presentations, etc.) that you could use with an iBook?

In response, participants claimed that iBooks allow more interactivity by incorporating features such as videos, audio, embedded quizzes, and chat widgets. One participant mentioned that she had already developed a worksheet activity that she uses regularly in one-shot sessions but was beginning to see ways that it could become more engaging if she were to utilize iBooks as a platform. Another appreciated that the iBook capitalized on the unique features of the tablet rather than its function as a “mini browser.”

Some attendees expressed confusion at the notion of a problem scenario and how to word it appropriately. In response, attendees were directed to the “LOEX 2014” iTunes U course, in which numerous online resources on PBL and additional

examples of problem scenarios were provided. Scenarios that participants brainstormed included, “whether or not the monitoring of social media accounts is an invasion of privacy” and “whether guns should be allowed on campus.” During the process of iBook storyboarding, one participant asked for a reminder about what could be made interactive in iBooks. The presenters discussed the types of multimedia that iBooks allows for including video, audio, interactive images, quizzes, checklists, widgets, and more; additional information about the capabilities of iBooks and iBooks Author can be found in the “LOEX 2014” iTunes U course. At the conclusion of the workshop, several attendees commented on the usefulness of the session and their excitement to implement iPad-driven PBL in the future.

Conclusion

Overall, the method of using iPad-driven PBL to provide FYE students with basic information literacy skills has proven to be a success at Millersville University. Attendees at LOEX exhibited positive feedback throughout the workshop and agreed that the use of iPads in one-shot information literacy sessions helps to increase student engagement and improve critical thinking skills. The presenters hope that their work inspires other librarians to take advantage of new technologies in order to create innovative and meaningful experiences for their students.

REFERENCES

Purdie J. R., & Rosser, V. J. (2011).Examining the academic performance and retention of first-year students in living-learning communities and first-year experiences courses. *College Student Affairs Journal*, 29(2), 95-112.

APPENDIX A: SCREENSHOTS FROM PBL IBOOK

SO, HERE'S THE PROBLEM:

At an upcoming council meeting, Millersville University administrators will be considering **transitioning the university from a dry campus to one that allows alcohol.**

As president of the student council, it is your job to convince the administration of **why this is, or is not, a good idea.**

INTRODUCTION

In groups of 2, work together as a team to locate information for your presentation. You will have 30 minutes to complete the activity.

At the end of class, you will share your conclusions with the class! Remember that you need to **pick a stance** and use your documents to back up your opinions!

Begin by selecting your group name and electing a secretary.

GUIDELINES

- You must use **Academic Search Complete** to locate one of your resources.
- You **must** use a library research tool other than Academic Search Complete to locate a second resource.
- You must be able to explain **why** you have selected your documents.
- At the end of the project, you must be able to explain **why you do, or do not, support** alcohol legislation on campus.

APPENDIX B: WORKSHEET #1

Learning Outcomes should be measurable and can use the following template: "Students will be able to [verb/action phrase] in order to [why is this important?]."

What methods or materials might you use to teach this in an iBook (e.g. tutorials, links):

LEARNING OUTCOME 1:
Students will be able to identify where and how to get research help from a librarian.

LEARNING OUTCOME 2:
Students will be able to locate an article relevant to the "problem."

LEARNING OUTCOME 3:

Problem scenarios should be ill-structured to leave room for students to explore (e.g. should the campus allow fracking/alcohol). *Consider the following questions to develop your problem:*

- What is relevant/interesting to students?
- What are problems that they likely don't know much about?

Check to be sure:

- The problem has more than one solution.
- Students will be able to locate enough information about the problem.

3 Turn one of your problems into a problem scenario.*

What questions will your student answer? What type of information will they need to find? What role do they have in the scenario?

* Examples available in iTunes U course

APPENDIX C: WORKSHEET #2

iBook Storyboard

Based on your learning outcomes, what steps will students have to accomplish to solve the problem?
What activities will they work on? What will be included on each page of your book?*

(EXAMPLE):
Introductory Page

- INCLUDES:
 - Scenario description
 - Picture
 - Link to library website

PAGE 1 PAGE 2 PAGE 3

PAGE 4 PAGE 5 PAGE 6 PAGE 7

*iBook examples available in iTunes U course

APPENDIX D: WORKSHEET #3

Page _____

Images for Tables and Figures (Editor will put in body of the text later)

Table 1: Average faculty responses in iPad instruction sessions vs. laptop sessions

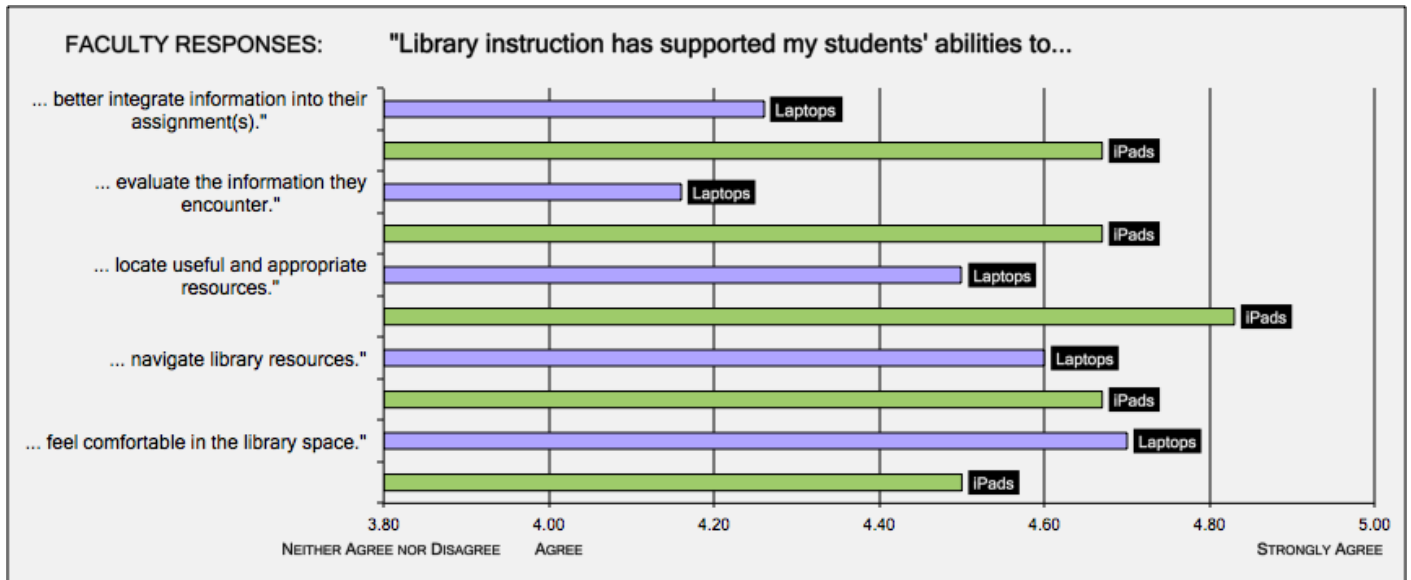


Table 2: Average student responses in iPad instruction sessions vs. laptops sessions

