Flip Over Research Instruction: Delivery, Assessment, and Feedback Strategies for "Flipped" Library

Abstract

To take fuller advantage of new models for transformative learning, the Beam Library at Oklahoma Christian University has implemented a "flipped classroom" strategy for research instruction. Traditional "one-shot" instruction suffers limitations of both depth and time. In the flipped model, conceptual and application-oriented instruction are provided through brief online videos prior to the class session; class time then becomes a workshop in which librarians are better able to provide in-depth, targeted, highly interactive instruction. In this way, students become active participants in their learning and are empowered to teach each other through collaborative (rather than passive) in-class experiences. While flipped research instruction is not new, our strategy incorporates a means for assessment and feedback lacking from other approaches. This article describes our flipped pilot and the delivery, assessment, and feedback strategies we have employed to enhance flipped research instruction.

"Flipped" Instruction

Flipped research instruction takes something practical (i.e., library instruction) and enhances it by capitalizing on the visual culture both students and teachers inhabit.[1] The 2014 *NMC Horizon Report* names the flipped classroom as a key emerging technology with a high potential for widespread adoption by educators within the next one to two years. According to the report, "Flipped classroom refers to a model of learning that rearranges how time is spent both in and out of class to shift the ownership of learning from the educators to the students."[2] Flipping a class essentially involves freeing-up class time by having students engage videos, podcasts, and other forms of instruction outside of class. Teachers ask students to view video content on their own time, provide a means for formative assessment of student comprehension, and then use class time more as a workshop, perhaps by demonstrating practical applications of the content they engaged. This asynchronous instruction through video is the heart of what it means to "flip a class."

Traditionally, library research instruction is often provided to students as a one-shot invitation to a specific class during which time librarians feel the need to cover a lot of information. Of necessity, much of this information is technical and involves showing students how to use databases, how to search the catalog, or how to access various online resources. Especially in general courses, traditional "one-shot" research instruction has suffered limitations of both depth and time; librarians are often frustrated by the necessity of covering so much information in a single class period.[3]

With the development of online and distance learning, strategies for "embedding" library instruction into course management systems have been effectively employed.[4] Flipped research can enhance both one-shot and embedded instruction: the

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[1] See, for example, Sara Arnold-Garza, "The Flipped Classroom," *College & Research Libraries News* 75, no. 1 (January 2014): 10-13; Heather Hersey and Sue Belcher, "Flip Your Library," *Learning & Leading With Technology* 41, no. 4 (December 2013): 22-25; Eduardo Rivera, "Using the Flipped Classroom Model in Your Library Instruction Course," *Reference Librarian* 56, no. 1 (January 2015): 34-41; Michael Stephens, "Flipping the LIS Classroom," *Library Journal* 139, no. 12 (July 2014): 41; Joyce Kasman Valenza, "The Flipping Librarian," *Teacher Librarian* 40, no. 2 (December 2012): 22-25.

[2] Larry Johnson, Samantha Adams Becker, Victoria Estrada, and Alex Freeman, *NMC Horizon Report: 2014 Higher Education Edition* (Austin, TX: The New Media Consortium, 2014). Available at http://www.nmc.org/pdf/2014-nmc-horizon-report-he-EN.pdf.

[3] See discussion in William Badke, "Ramping Up the One-Shot," *Online* 33, no. 2 (March 2009): 47-49.

[4] For example, David Shumaker, *The Embedded Librarian: Innovative Strategies for Taking Knowledge Where It's Needed* (Medford, NJ: Information Today, Inc., 2012); Cassandra Kvenild and Kaijsa Calkins, *Embedded Librarians: Moving Beyond One-Shot Instruction* (Chicago: Association of College and Research Libraries, 2011); Amy C. York and Jason M. Vance, "Taking Library Instruction Into the Online Classroom: Best Practices for Embedded Librarians," *Journal of Library Administration* 49, no. 1/2 (January 2009): 197-209.

Christopher Michael Rosser is Theological Librarian and Tamie Willis is Library Director at the Tom and Ada Beam Library, Oklahoma Christian University, Edmond, OK.

face-to-face experience often lacking for an embedded librarian is gained in the classroom, while the online presence of being embedded is afforded by flipped instruction. The incorporation of both online and face-to-face instruction is an important pedagogical and timely move for today's generation of students.

Targeting Today's Students

Much has been written about Generation Y, the children born between 1984 and 2002. Sweet describes Generation Y as EPIC: Experiential, Participatory, Image-rich, and Connected.[5] According to Elmore, students today learn by expressing themselves, typically by talking; they upload information through their own conversation and discussion instead of downloading information by lecture.[6] They are experiential by inclination, and music, art, and narrative are foundational in helping them retain information. Elmore asked 3,000 undergraduates on 32 university campuses what enables them to learn and to remember. Three instruments emerged as most popular: (a) music, the use of song and lyric to connect and remember information; (b) experiences, the use of hands-on activity and participation; and (c) images, the use of visuals and metaphors to engage and retain content.[7]

For our own project, we kept in mind our EPIC and visually oriented students as well as recent directives for education. In the Department of Education's 2010 publication *Transforming American Education: Learning Powered by Technology*, several goals illustrate the current emphasis in education on new modes of teaching due to shifting modes of learning.[8] For example, Goal 1.0 states that "All learners will have engaging and empowering learning experiences both in and out of school that prepare them to be active, creative, knowledgeable, and ethical participants in our globally networked society" (9). Actions associated with this goal include the inclusion of learning objectives that incorporate technology and the provision of learning resources that "exploit the flexibility and power of technology to reach all learners anytime and anywhere" (23).

Likewise, Goal 2.0 asserts that "Our education system at all levels will leverage the power of technology to measure what matters and use assessment data for continuous improvement" (25). Actions toward this goal incorporate "assessments that give timely and actionable feedback about student learning to improve achievement and instructional practices" and "use technology to improve assessment for both formative and summative uses" (xii). Flipped research instruction can help fulfill such educational goals. If the design of a flipped classroom model is employed within an overarching pedagogy[9] and uses technology to provide appropriate assessment, it is in line with the action plan for the National Educational Technology goals above. It also directly speaks to the right-brain creative learning styles of Generation Y through the possibilities of interaction, images, music, and narrative. Literature about flipped instruction that is done right points to better engagement with students, an increase in scores, and instructors' feelings of improved job satisfaction.[10]

Method

Our own approach to flipping research instruction has been similar in some ways to other initiatives, but it has also been quite different. As others have done, we created brief instructional videos for students to view asynchronously prior to our class session. However, the real difference in our method is the assessment component through which we are able to

[5] Leonard Sweet, *Post-modern Pilgrims: First Century Passion for the 21st Century World* (Nashville, TN: Broadman & Holman, 2000).

[6] Tim Elmore, *Generation iY: Our Last Chance to Save Their Future* (Atlanta, GA: Poet Gardener Publishing, 2010).

[7] Tim Elmore, "In Other Words: The Research Behind Teaching and Learning Through Images," at *Growing Leaders*, Tim Elmore's official website, accessed February 25, 2016, http://growingleaders.com/wp-content/uploads/2014/03/In_Other_Words.pdf.

[8] Department of Education, Office of Educational Technology, *Transforming American Education: Learning Powered by Technology* (Washington, D.C.: U.S. Department of Education, 2010). In-text references are to page numbers within this document.

[9] See discussion in Katie Ash, "Educators View 'Flipped' Model With a More Critical Eye," *Education Week* 32, no. 2 (August 29, 2012): S6-S7.

[10] See Glen Bull, Bill Ferster, and Willy Kjellstrom, "Inventing the Flipped Classroom," *Learning and Leading With Technology* 40, no. 1 (August 2012): 10-11; Bryan Goodwin and Kirsten Miller, "Evidence on Flipped Classrooms Is Still Coming In," *Educational Leadership* 70, no. 6 (March 2013): 78-80; see also discussion in the *NMC Horizon Report*, previously cited.

measure comprehension, provide formative instruction through feedback, and, of course, hold students accountable for actually watching the videos.

Process

A series of videos is made available to students in their course management system. Prior to our class session, students are expected to thoughtfully engage the videos and respond to formative assessment questions that are actually embedded in the video itself through software developed by our educational technology department. Student responses to the videos are then viewed by librarians and addressed either through electronic feedback or in the face-to-face session. After students have had an opportunity to view and respond to the videos through built-in assessment, librarians join them in class for a research session. However, because they have engaged both conceptual and practical "how to" content outside of class, our in-class sessions become a "workshop" or "learning lab." Consequently, we are able to better tailor our instruction to address specific research topics/needs, provide more thorough instruction in specific databases, and interact more fully with the students in general. See Appendix B for titles and corresponding URLs of the three videos created for this pilot.

Outcomes

We anticipated several outcomes as we developed this pilot. Overall, we hoped to determine that the flipped instruction model is an effective method of conveying information literacy and research concepts as well as technical "how-to" processes. Specifically we anticipated four outcomes. The first was better understanding, retention, and independent use of research concepts and processes by students. The second outcome was better engagement with the students during the in-class sessions. The third was a stronger partnership with faculty for achieving learning outcomes and greater support for research and information literacy instruction in their courses. Flipped instruction, we hoped, would increase perceptions of the importance of the librarian's in-class session and demonstrate to the students the value placed on this instruction by their professors. The fourth outcome was an improved and meaningful classroom experience for the librarian as an instructor within the class.

Assessment via ThinkApp

An important key to the success of our flipped library research project has been the incorporation of ThinkApp, by which assessment is embedded directly into the videos we create. ThinkApp was developed by the North Institute, the education technology department at Oklahoma Christian University. This program allows us to embed a series of formative questions that assess student comprehension. Students watch the video and can simultaneously respond to questions, or they can pause the video, go back to search for answers, review, and respond. Administrators to the app have the option of grading student responses via a "Grade" function. Librarians view student responses and report to instructors which students participated and their level of comprehension. Most importantly, we provide students with feedback. Through ThinkApp, our feedback is sent to them directly and immediately via e-mail. See Appendix C for an image of a video embedded in ThinkApp and an image of feedback as it looks in a student's e-mail inbox.

Implementation

Our goal was to have at least three different courses from different disciplines and a minimum of three different professors involved. Our pilot consisted of four English Composition II classes, with three different professors, a Methods of TEFL course, and a History of the Bible course. All professors agreed wholeheartedly to participate, to require viewing the videos for a grade, and to provide us feedback. We were able to link the videos through each course's online management system and then directly e-mail students with instructions and reminders. Time-on-task for students would be no more than 30 minutes.

Out of a pool of 126 students enrolled in the classes, an average of 97 watched and responded to all three videos (77%). We reviewed, graded, and responded to each student, and we used their answers as a basis for in-class discussion. From their answers through ThinkApp, we were pleased to discover that 100% of respondents appeared to have watched the videos with intentionality, and most of their answers reflected understanding of the conceptual and technical concepts.

After discussion and live examples of the concepts covered in the videos, the rest of the class time became a workshop, and we were able to work with individuals at their point of need and provide time for them to collaborate with and learn from one another.

Results

To obtain student feedback about their learning experiences, we created a brief online survey. Out of 84 respondents, 76 had watched the videos. Along with course and semester information, we asked the following questions:

1. Did you learn new information from the "flipped library" videos? (81% yes)
2. Are you better prepared to do the research needed for this class after watching the "flipped library" videos? (80% yes)
3. Which type of research instruction experience do you learn the most from? (Videos/workshop — 34%; Videos/lectures — 39%)
4. Would you recommend that "flipped library" videos be used for research instruction? (64% yes; 24% sometimes)

Students' additional comments also supplied informative feedback. Out of 50 comments, we rated 38 as positive, 5 as negative, and 7 as not applicable or somewhat unclear. Following are several examples of student comments:

- *I wish I had these videos as a freshman.*
- *This is very helpful and I hope this can stay available so I can return to it anytime.*
- *The difference between natural and controlled languages was new to me.*
- *It is helpful to know how to specify searches to get a bigger pool of relevant information.*
- *I learn better by listening to an instructor.*
- *I watched them, but I was more concerned about the questions.*
- *The videos were quite entertaining.*
- *I liked how the videos were short and to the point.*

Professors also provided positive feedback. They valued the information presented through the videos as well as the increased accountability through the ThinkApp software, and they appreciated the in-class format. One professor admitted he learned something beneficial for his own research: the difference between natural and controlled language. That new knowledge improved his ability to effectively search within databases and reduced his frustration with the results he generated.

Based on our anticipated outcomes, the initial assessment of our pilot program leads us to believe that using the flipped instruction model will strengthen our library research instruction by providing better engagement with students and faculty; raising awareness of the importance of information literacy and research instruction; providing more opportunities for collaboration between librarians, faculty, and other departments to meet the learning outcomes stated by the university; and to providing an improved and meaningful classroom experience for the librarian. We still need to do further assessment as we engage this strategy to determine if the flipped model provides better understanding, retention of the information, and independent use of the concepts.

Our pilot has been a success for us as librarians, for our professors, and especially for our students. In fact, we have made flipped research central to our teaching strategies because it meets students where they are by taking advantage of the image-rich, participatory culture we all inhabit. Ultimately, this semester we hoped to take something very *practical* — library research instruction — and enhance it. We believe our efforts have been fruitful and benefit students, professors, and instructional librarians alike.

Appendix A: Useful Sources on "the Flipped Classroom"

Arnold-Garza, Sara. "The Flipped Classroom." *College & Research Libraries News* 75, no. 1 (January 2014): 10-13.

Ash, Katie. "Educators View 'Flipped' Model With a More Critical Eye." *Education Week* 32, no. 2 (August 29, 2012): S6-S7.

Badke, William. "Ramping Up the One-Shot." *Online* 33, no. 2 (March 2009): 47-49.

Bull, Glen, Bill Ferster, and Willy Kjellstrom. "Inventing the Flipped Classroom." *Learning & Leading With Technology* 40, no. 1 (August 2012): 10-11.

Department of Education, Office of Educational Technology. *Transforming American Education: Learning Powered by Technology.* Washington, D.C.: U.S. Department of Education, 2010.

Elmore, Tim. *Generation iY: Our Last Chance to Save Their Future.* Atlanta, GA: Poet Gardener Publishing, 2010.

-----. "In Other Words: The Research Behind Teaching and Learning Through Images." *Growing Leaders.* http://growingleaders.com/wp-content/uploads/2014/03/In_Other_Words.pdf.

Goodwin, Bryan, and Kirsten Miller. "Evidence on Flipped Classrooms Is Still Coming In." *Educational Leadership* 70, no. 6 (March 2013): 78-80.

Hersey, Heather, and Sue Belcher. "Flip Your Library." *Learning & Leading With Technology* 41, no. 4 (December 2013): 22-25.

Johnson, L., Adams Becker, S., Estrada, V., and Freeman, A. *NMC Horizon Report: 2014 Higher Education Edition.* Austin, TX: The New Media Consortium, 2014.

Kvenild, Cassandra, and Kaijsa Calkins. *Embedded Librarians: Moving Beyond One-Shot Instruction.* Chicago: Association of College and Research Libraries, 2011.

Rivera, Eduardo. "Using the Flipped Classroom Model in Your Library Instruction Course." *Reference Librarian* 56, no. 1 (January 2015): 34-41.

Shumaker, David. *The Embedded Librarian: Innovative Strategies for Taking Knowledge Where It's Needed.* Medford, NJ; Information Today, Inc., 2012.

Stephens, Michael. "Flipping the LIS Classroom." *Library Journal* 139, no. 12 (July 2014): 41.

Sweet, Leonard. *Post-modern Pilgrims: First Century Passion for the 21st Century World.* Nashville, TN: Broadman & Holman, 2000.

Valenza, Joyce Kasman. "The Flipping Librarian." *Teacher Librarian* 40, no. 2 (December 2012): 22-25.

York, Amy C., and Jason M. Vance. "Taking Library Instruction Into the Online Classroom: Best Practices for Embedded Librarians." *Journal of Library Administration* 49, no. 1/2 (January 2009): 197-209.

Appendix B

The following three videos were created for our flipped research instruction pilot. These videos and all others available on the Beam Library YouTube channel may be freely used for educational purposes.

- The Terms of Research (available at https://youtu.be/mXyD_RAhZLE)
- Making Search Terms Work (available at https://youtu.be/YC3lx6krM9s)
- Using EBSCO Databases (available at https://youtu.be/-E88wlWxWP0)

All videos available at YouTube's Beam Library channel are open for public use with Attribution Non-Commercial (CC by N-C) licensing.

Appendix C

Screen shot of a video embedded in ThinkApp:
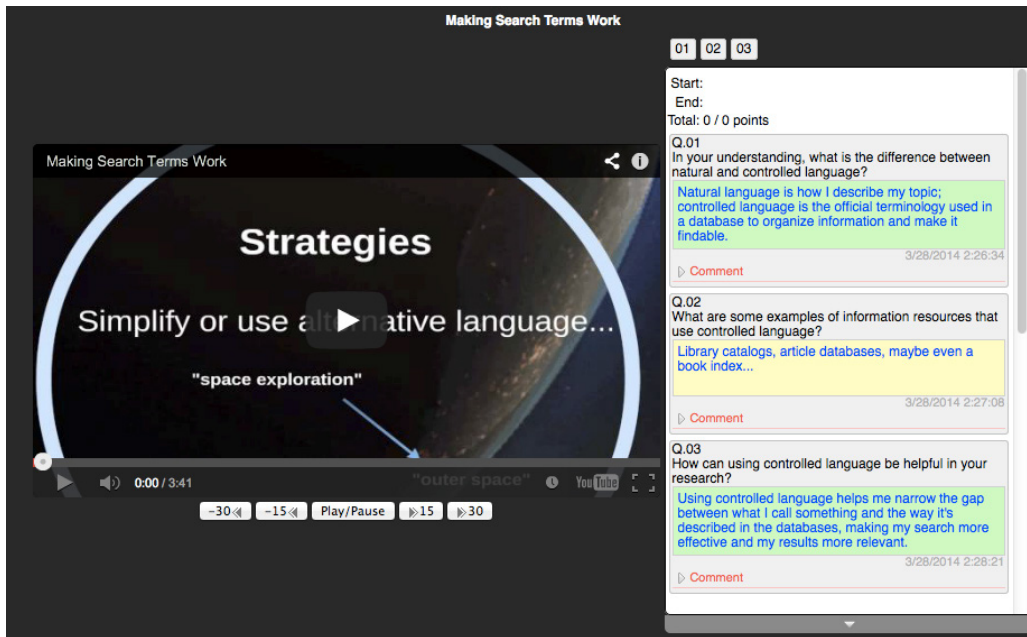
Screen shot of feedback as it looks in a student's e-mail inbox: