2010

Using Podcasts for Assessing Information Research

Lauren Yannotta
CUNY Hunter College

Brian Lym
CUNY Hunter College

Shiao-Chuan Kung
CUNY Hunter College

Academic Exchange

Spring 2010

VALUED BY EDUCATORS COAST-TO-COAST AND WORLDWIDE

e, UK: Cambridge

illboration. Berlin:

g: Education and
iational Journal of

s learning spaces."

with technology: a

threats of Internet

:ional Art History
. and Case Studies,
. Cambridge, UK:

vey Course." CAA

ased Learning." A

ication." Emerging

ols for classrooms.

chnologies and the
er. Applications in
eference, 2008.
in the classroom."

;ion: 3Cs approach
1 solving process."

the changing role

-generated content
3): 987-995.
lia:About, 2008.
om." New England

vation: Historical
rican Educational

scholar and his
y:A Century of
awrence Erlbaum

ning environments
al Psychologist 40

Using Podcasts for Assessing Information Research

Lauren Yannotta, Hunter College, City University of New York
Brian Lym, Hunter College, City University of New York
Shiao-Chuan Kung, Hunter College, City University of New York

Yannotta is Instructional Design Librarian and Lym is Reference/Instruction Librarian; Kung is Instructional Designer in the Technology, Teaching, and Learning Group.

Abstract

This paper reports on the use of podcast audio recordings to assess learning in a hybrid information research course. Evidence of learning that appeared in the audio recordings and how the project affected student learning were investigated. Findings suggest that student-created podcasts can be beneficial in that instructors can see what students learned from the podcast content; students can see evidence of own learning by looking at before and after podcasts; and that students see methods used by other students and reflect on own methods/knowledge.

Introduction

In higher education, podcasting has been mostly used as a medium to simply deliver instructors' lecture content (Lonn & Teasley, 2009). However a study by McLoughlin, Lee and Chan indicates that podcasts, if learner-generated, can be an appropriate medium for enhancing student knowledge and metacognition (McLoughlin, Lee, & Chan, 2006); such podcasts are also means for measuring student learning (Lee, McLoughlin, & Chan. 2008). For instructors evaluating student information literacy, this research suggests that podcast recordings might be promising venues for learning assessment. For instance, podcast recordings of student information research processes can possibly serve as performative learning assessments that capture the higher level cognitive skills, such as analysis and evaluation (Grassaian & Kaplowitz, 2001), that are involved in information research; these skills and learning are not adequately measured by fixed-choice tests (Oakleaf, 2008). Our study explores the use of podcasts as performative learning assessments and for fostering student metacognition in an information literacy course.

In this paper, we first describe the deployment of student-generated podcasts to assess knowledge of learning outcomes in a library information literacy course; we also describe the use of self-reflective written assignments based on the podcasts. Next, we analyze student survey responses to creating and listening their podcasts. Finally, we explore overall findings from our study and suggest areas for further research.

Methods

The data collected was drawn from students enrolled in the Hunter College library department's hybrid section of LIBR 100: Information Research, Spring 2009. The class was small in size with only 18 students enrolled; 13 of these students consented to participate in the study. The investigators crafted an assignment that would be used as a pre-assessment and post-assessment completed at the beginning and end of the semester. The pre-assessment was assigned in the first class session and required students to create a short script describing the research process they would follow if they were assigned a paper on global warming. In the second class session, they used the script to create an audio podcast in the Blackboard course management system. The recordings were posted for all students to listen to. In week 13 of the semester, students were given the same assignment, as a post-assessment, again to create an audio podcast describing their research process. Students were then asked to listen to both their first and second podcast and reflect in writing on how their research process had changed throughout the semester. Students were also asked to complete a survey on the last day of class on the process of creating a podcast and their perceptions of using a podcast as a tool for self-assessment.

13

Student Learning: Knowledge of learning outcomes evident in the podcasts

To analyze students' knowledge of learning outcomes as evidenced the podcasts, a content analysis strategy combining qualitative and quantitative approach was applied. The unit of analysis was the recorded text of individual podcasts, which was based on a written script produced by each student. The audio texts were then coded for target learning objectives and outcomes. The actual recorded text rather than the prepared scripts were analyzed since technical problems with the courseware system which was used for delivering completed scripts prior to actual recording time was down; also a couple of students had not prepared scripts or altered them in when they did the actual podcast recording. These learning objectives and outcomes were derived primarily from the course syllabus, and were reframed for coding using the ACRL (Association of College and Research Libraries) Information Literacy Competency Standards for Higher Education (2000). The coded outcomes are shown in below [Table 1]. Two of the researchers listened to each set of podcasts produced each student in the study, and coded each podcast by noting the parts of the recorded text which corresponded to these learning outcome categories. The coders' checklists were compared to determine inter-rater reliability. The results were then tabulated and summarized [Table 1].

Results and discussion

It was observed that the students indicated greater knowledge of learning outcomes greater in Podcast 2 than in Podcast 1 as demonstrated below

Table 1: Totals: Learning outcomes referenced in podcasts

Learning outcome	Podcast 1	Podcast 2
Refers to finding background information at the beginning of research	5	6
Identifies key terms and concepts related to the information need	2	5
Discusses using an appropriate library database in preference to open web	0	3
Identifies value and differences of potential resources in a variety of formats	2	7
Identifies the purpose and audience of potential resources	1	8
Reviews the initial information need to clarify, revise, or refine the question (including topic selection)	2	1
Describes criteria used to make information decisions and choices when reevaluating nature and extent of information need	1	0
Discusses need to narrow or focus initial topic	5	2
Investigates the scope, content, and organization of information retrieval systems	1	3
Selects efficient and effective approaches for accessing the information needed from the investigative method or information retrieval system	5	8
Identifies use of subject terms to define search	6	4
Constructs a search using Boolean operators or truncation	0	4
Uses various classification schemes and other systems to locate information resources within a library	0	0
Assesses the quantity, quality, and relevance of the search results to determine whether alternate information retrieval systems or investigative methods should be utilized	2	2
Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias.	1	6

14

ast	Podcast 2
	6
	5
	3
	7
	8
	1
	0
	2
	3
	8
	4
	4
	0
	2
	6

Individual students demonstrated an increase in knowledge of specific learning outcomes, as evident in the differences between Podcast 1 and Podcast 2. This progression is explained in the following examples:

Refers to finding background information at the beginning of research
Three students did not mention the use of background references in the Podcast 1, but did mention their use in Podcast 2. One of these explicitly recognized in Podcast 2 as compared to Podcast 1, that "If I were now to start researching the topic of Global Warming, I would begin with reading a few reference sources to gain a bit of background knowledge..."

Identifies value and differences of potential resources in a variety of formats
In Podcast 1, nine students did not comparatively discuss the merits of potential information resources prior to search. However, this same group did recognize this critical step in Podcast 2. For instance, Student P1 begins Podcast 1 as follows "To begin my research process I'll first go to the Hunter College Website and then go into the database section and go to the database Science Direct....". However, in Podcast 2, this student explicitly articulates criteria for selecting an information resources:
> A good choice in a database makes a difference...[in] the quantity and quality of the results received; choosing a book would also be important, when choosing book it is important consider whether the book is current, the status and information about the author, and whether the information is easily readable and well researched; much is to be considered when choosing a website....

Identifies the purpose and audience of potential resources
In Podcast 1, seven students did not explicitly address the purpose and audience of possible resources (e.g. discussing the merit of popular vs. scholarly works, current vs. historical resources, etc.) that might be useful for the search topic. However, by Podcast 2, this group demonstrated knowledge of the need to identify the value of specific resources and their audiences. For instance, in Podcast 1, Student P13 begins by stating that
> Internet is the first source to use to research on global warming. I would use Internet Explorer or Firefox to the research on Google....

Contrastingly, in Podcast 2, the same student announces at the start
> If I were to write a paper on global warming, I would be using different types of resources to do my paper. First I would go to the Hunter website to and use the database... Academic Search Premier... and see what I can find through peer-review.... Academic Search Premier or Greenfile is a good site to look at recent articles...for global warming...Then I would look at newspapers to find recent news...

Reviews the initial information need to clarify, revise, or refine the question (including topic selection)
In Podcast 1, three students did not recognize the need to refine the given research topic of Global Warming prior to initiating a search. However, in Podcast 2 this group articulated priority for topic refinement through as a first step prior to search, through addition of key search words in search strategies, through review of search results. For instance, in Podcast 1, Student P3 does not address topic refinement and focuses on database selection; in Podcast 2, this student states "....You'll use the topic of Global warming, don't worry if this is too broad...Once you have given your topic a general read of your articles, narrow your topic to one specific area..."

Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias.
It is not surprising that few students mention the evaluation of resources in the first podcast. Only 3 out of the 13 students mention any kind of source evaluation. These 3 students show a cursory understanding of source evaluation. P4 quickly states that it is not good to use Wikipedia or "home-made websites" when doing research, P10 says she would evaluate her sources to see if

15

they were scholarly, and P11 who focuses all of the first podcast on Google searching mentions he would check the credibility of the websites he found.

Eight students mention source evaluation in the second podcast. These students discuss authority, currency, and bias, not only of web resources but also of books and articles found through catalog and database searches. One student focuses much of the second podcast on source evaluation; her grasp of its importance is clear in her statement: "I never before questioned an author of a book after checking it out of a library. Now I see that it is important to have an expert in the field of which you are researching." P11, who was so focused on Google searching in the first podcast indicates he has gained more in-depth knowledge of source evaluation in the second podcast. After discussing the use of library databases to find information, he says that he uses Google to search for information on authors writing on global warming to see if "the person is connected to a university or other credible institution." Additionally, P10 shows her deeper understanding of source evaluation in her narrative:

> I also realized the importance of footnotes or endnotes that identify the sources of the information that I did not realize in first podcast. For the books, I realized in the second podcast that once I find the book that is useful for my topic, I have to check the list of sources and footnotes in the back of the book for the credibility of the sources of the information. Furthermore, those footnotes can help me to search further on other books or articles on that topic to have more information.

Writing Process vs. Research Process
In addition to greater knowledge of specific information learning outcomes, several students in their second podcast demonstrated a greater understanding of the research process as a distinct process, different from the writing process. In their first podcast, these students confuse the writing process with the research process. They discuss the steps in preparing a paper draft, including creating a timeline for getting the paper written, writing notes on index cards, writing a first draft, and revision. The actual research that they need to accomplish to write the paper seems like an afterthought and is barely mentioned in each of these cases even though the assignment states "describe the research process you would follow when writing a paper on global warming." By the second podcast, these students have a full understanding of the research process and articulate the steps they would follow to find resources that would enable to write the paper. One student reflects on this change when she states

> In the first podcast I gave general directions that only helped to begin a research project. In the second podcast I became specific to the topic and gave more precise information on where to find information as well as what to do with the information once it is gathered.

We believe that this initial attention to the writing process comes from the English composition program that focuses heavily on a tiered approach to writing a documented paper. This indicates that librarians need to work more closely with faculty teaching English composition to stress the importance of developing the research and information literacy skills of their students.

Survey results
In their responses to the survey about creating and listening to podcasts, students indicated that they gained self-knowledge about their research process. The survey answers are summarized as follows:

Effect of creating podcasts
The audio recording project was successful in helping students articulate their current skills and thinking about the research process. Some said that the audio recordings helped them get organized and provided a verbal outline. Others said that the recordings revealed their weak spots and helped raise self-awareness. Ten of the 13 students thought that creating audio recordings helped them think about what they knew about doing research and helped them articulate the research process better.

16

Effect of listening to their classmates' podcasts
Asking students to listen to their classmates' recordings led them to think about their own work and helped them learn other skills and techniques. Five students listened to 1 - 2 recordings by their classmates; five students listened to 3- 5 recordings by their peers. Seven of the 13 students thought that listening to their classmates' recordings made them a better researcher.

What students learned by reflecting on the differences between their first and second podcasts
By listening to their first and second recordings, students realized that they gained knowledge about the research process, learned about useful databases and resources, and can now perform better searches. Students noted that their first recordings were shorter, vague and showed "that I had a basic method of doing research." In contrast, their second recordings were more detailed, revealed new techniques used such as truncating and connecting words, and included more resources such as different databases. One particular student stated that her first recording "reflected an emphasis on finding research to support my thesis" but the second recording "revealed that I now focus more on finding a plethora of sources that I can used so that I broaden the quantity and quality of my sources."

Conclusion
The investigators found that podcast recordings of student narrations of their information research strategies were useful as pre- and post-assessments of analytical and evaluative learning outcomes. Students saw evidence of their own learning by listening to and reflecting on their initial and final podcasts; also, by listening to other student's final podcasts, students became aware of information research methods used by other students and reflected on own methods and knowledge of the information research process. Such benefits from a student's viewpoint suggest that narrating their information research process via a podcast as well as listening to their own or their classmates' podcasts increases learner metacognition. However, these findings are limited to this case study, and quantitative studies will need to be conducted to validate the generality of these conclusions. Another avenue meriting further research is the comparative value of student generated podcasts versus written work in the context of an information literacy course: does a podcast narration of the information research process demonstrate more or less "higher order" thinking skills than what would be evident in written product? For what kinds of courses/subject areas—beyond information literacy skills classes—would podcast learning assessments be useful?

References
ACRL Information literacy competency standards for higher education (2000). Retrieved from http://www.ala.org/ala/mgrps/divs/acrl/standards/informationliteracycompet ency.cfm

Grassaian, E., & J. R. Kaplowitz (2001). Information literacy instruction: Theory and practice. New York, NY: Neal-Schuman.

Lee, M. J. W., McLoughlin, C., & Chan, A. (2008). Talk the talk: Learner-generated podcasts as catalysts for knowledge creation. British Journal of Educational Technology, 39(3), 501-521. Retrieved from Wiley InterScience database.

Lonn, S., & Teasley, S. D. (2009). Podcasting in higher education: What are the implications for teaching and learning? The Internet and Higher Education, 12(2), 88-92. Retrieved from ScienceDirect.

McLoughlin, C., Lee, M., & Chan, A. (2006). Using student generated podcasts to foster reflection and metacognition. Australian Educational Computing, 21(2), 34-40.

Oakleaf, M. (2008). Dangers and opportunities: A conceptual map of information literacy assessment approaches. Portal: Libraries and the Academy, 8(3), 233-253. Retrieved from Project Muse database.