Student use of and perspectives regarding podcasted lectures: Survey pilot

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Executive Summary

A survey instrument addressing student use of, opinions of and preferences regarding podcasted lectures was developed. The survey was field tested in four summer session courses with the following results:

1. Most students utilized podcasted lectures when they are available.
2. While uses varied, student tended to use podcasted lectures as a study tool, at home and during a dedicated study time.
3. The ability to gather material from a missed class session was the most frequently reported use followed by revising notes, reviewing for a test and finding information missed during class.
4. Nearly 90% of students accessed podcasted lectures with computers and many of these students used campus resource centers to do this as two-thirds of respondents reported use of campus labs to study. This effectively mitigates against concerns related to gaps in access to technology among students.
5. 80% of respondents agreed with or were in strong agreement with the statement “The podcasts I listened to helped me understand and remember facts and concepts”
6. 100% of the respondents were neutral about to in strong agreement with the statement “Listening to podcasts increases my confidence as a student” (52% agreed with or were in strong agreement with the statement).
7. Respondents believed that listening to podcasted lectures was as effective as reviewing their notes and text as a means of studying for class.
8. Respondents believed that listening to podcasted lectures was less efficient than reviewing their notes and text as a means of studying for class (72% believed podcasts efficient versus 92% for notes and text).
9. Respondents stated a preference for review material and lectures as the type of content in podcasts and for lecture length sound files.

Description

An instructional podcasting initiative has been part of the programming of RCC since the summer of 2007. One of the most common uses of podcasts in this program has been making course lectures available to students. Prior reports regarding this initiative have considered faculty and student usage and the outcome measures course attendance, student withdrawal rate and cumulative grade point average (GPA). A survey was developed with the intent of supplementing the information previously reported and advancing the understanding of specific uses students make of podcasted lectures. Toward this end, the survey sought information regarding student use patterns for, student technology preferences regarding and student study habits employing podcasts. A fourth purpose for the survey instrument was initiating an investigation of the affective impact instructional podcasting has on students. Consequently, the survey sought information regarding student perspectives of the importance and effectiveness of podcasted lectures.

The survey development occurred in the spring of 2008. It was based on the work of Janossy (2007) and Evans (2008) and employed questions from their survey instruments with occasional, slight phrasing modifications made. It also included two questions developed by the researcher. The questions developed by the researcher were intended to address the constructs comprehension and self-efficacy. The survey instrument was piloted in the summer of 2008 at RCC in classes taught by faculty who had been podcasting course material for at least two semesters. This restriction was imposed to limit the impact that irregular and error inclusive deployment of podcasts would have on the survey results. This report summarizes the outcomes and conclusions from the pilot of the survey instrument.

Significance of the Study

Nearly all the information in the literature regarding the use of podcasts in higher education comes from university settings. The work of Janossy (2007) is the only report of activity at a community college this author has read. Thus, the RCC initiative is valuable as an established and well documented program at a community college. The RCC survey is also the first attempt of which the author is aware to isolate different constructs related to the affective impact of instructional podcasts in a higher education setting.

Literature

The literature regarding instructional podcasting in higher education is expanding but continues to be limited. Early publications regarding podcasts in higher education were in the popular press rather than scholarly publications.

In 2005 nearly every article regarding podcasting in higher education was a descriptive piece in a popular publication. The sole exception of which the author is aware was a report from Duke University describing outcomes from a pilot program which utilized podcasts with incoming students (Flanagan & Calandra, 2005). Considerations of podcasts and vodcasts (podcasted video and audio) continue to appear in university public relations material, in newspapers and magazines and on websites.

Beginning in 2006, articles detailing student responses to survey instruments appear in the literature. Material of this type comprises the majority of the content of the literature. The work of Bongey, Cizadlo and Kalnbach (2006), Lane (2006), Edirisingha, Rizzi, Nie and Rothwell (2007), Glogoff (2007), Hollandsworth (2007), Janossy (2007), Lee and Chan (2007), Lyles, Robertson, Mangino and Cox (2007), Evans (2008) and Veeramani and Bradley (2008) fits in this category. This student-reported data indicates that: 1) students do not believe their attendance is impacted by instructional podcasting; 2) many students make use of podcasts when they are available and some students use them frequently; 3) students believe podcasts help them understand course material and can aid in improving their standing in class; 4) students believe listening to a podcasted lecture is more helpful than borrowing a classmate's notes; and, 5) students predominantly utilize computers to listen to course podcasts. This material, with the exception of the work of Janossy (2007), was compiled at four year institutions and in graduate programs.

A second theme present in the literature is objections to podcasting in higher education. Hallett described podcasting as a distraction (2005). Bongey, Cizadlo and Kalnbach mentioned concerns regarding attendance (2006). Lum introduced the concept of a technology gap inhibiting access to the material (2006). French described podcasting as incompatible with a constructivist approach to education (2006). And, Read described concerns regarding the ownership and licensing of higher education podcasts (2007). Lastly, Schneider portrayed podcasting lectures as "Lazy students and lazy professors form[ing] an insidious alliance whose

principal goal is economy of effort" (2006). However, published data shows these objections to be hollow concerns. Students are not distracted by instructional podcasts, utilize them in many positive ways and report that they prefer the actual lecture to the podcasted lecture (Bongey, Cizadlo & Kalnbach, 2006). This data supports the assertion of multiple researchers that student attendance is not adversely impacted by the availability of podcasted lectures (Bongey, Cizadlo & Kalnbach, 2006; Lane, 2006; Lyles, Robertson, Mangino & Cox, 2007; Preuss, 2008b). Accessing podcasts does not appear to include the influence of a technology gap as students report using computers for this purpose rather than MP3 players (Edirisingha, Rizzi, Nie & Rothwell, 2007; Evans, 2008; Lane, 2006; Lyles, Robertson, Mangino & Cox, 2007) and computers are available for student use in campus libraries and labs. Students appear to use podcasts as individuals but individual review and reflection is not incompatible with constructivist theory. In addition, podcasts could be used by small groups as effectively as by individuals. Read (2007) notes that a Creative Commons license could address ownership and copyright concerns related to podcasts. Finally, the belief that producing a sound file and taking the steps necessary to make it accessible to students is laziness is flawed. While this does not require extensive resources or time, it does require forethought, preparation and regular updating. On the student side, thought, preparation and effort are required to utilize the material in review, accessing missed content, exam preparation and keeping up with class when illness or other elements of the student's life interfere with attendance. To characterize these practices as laziness misrepresents the process, its potential and its demonstrated uses.

The information available in the literature regarding student outcomes related to podcasting is scant. In a popular report published by McCloskey in 2007, a faculty person at Georgia Tech reported a 10% increase in grades in the sections in which he had podcasted the lectures. While this anecdotal report is intriguing, it is, at best, an isolated case until more substantial evidence appears.

A few researchers have employed podcasts as a modality in studies. In 2008, Hodges, Stackpole-Hodges and Cox conducted a study which involved the use of podcasts. In this study which had 17 participants, the last five lectures of a course were podcasted. The researchers found that students who had higher scores on the multiple choice test addressing the material covered in the five lectures also had higher field independence than their peers.

The literature regarding instructional podcasts in higher education remains limited and exhibits needs in several areas. The first area of need is a continued emphasis on understanding student use and preferences through survey research and other forms of tracking these constructs. The second area of need is data regarding student outcomes. Quasi-experimental, casual-comparative and other research in respect to podcasting in higher education is needed to fill this gap. The third area of need is the expansion of the surveys and other inquiries from the university setting to community colleges.

Method

A survey instrument was developed in the spring of 2008 with the intention of gathering more information about the student use of and preferences regarding podcasted lectures as well as expanding the consideration to include affective responses of students to the material. The instrument was based on the work of Janossy (2007) and Evans (2008) and employed questions from their surveys with occasional, slight phrasing modifications made. These changes were made to accommodate regional patterns of expression and American English. The instrument also included two questions developed by the researcher. The questions developed by the researcher were created to address the constructs comprehension and self-efficacy. These questions were worded like the others in simple and direct manner with the intention of avoiding ambiguity and bias. All the survey questions were closed-ended. The survey included multiple choice questions in respect to demographics, employment, usage, technology preferences and preferences developed in respect to length and number of the podcasts, checklist questions which addressed usage, Likert scale items for the constructs comprehension and self-efficacy and yes/no questions regarding the perception of the efficacy of podcasts as a study tool. The order of the survey content was demographics, study habits and use of podcasts when studying, technology preferences and characteristics, podcasting as a comprehension aid, podcasting as an aid to student confidence, perception of the efficacy of podcasts as a study tool and student preferences developed in respect to length and volume of the podcasts.

Once the researcher had compiled a proposed draft of the instrument, it was reviewed by a number of parties and then field tested in a limited number of summer section courses. The proposed survey instrument was reviewed by an institutional researcher who had not participated in its development and read for clarity of expression by several faculty members in the college's Business Technologies instructional division. Following this, minor changes were made to the

wording. The resulting survey was piloted in the summer of 2008 at RCC in classes taught by faculty who had been employing podcasts for at least two semesters. The researcher worked exclusively with faculty who had experience podcasting to limit the impact that irregular and error inclusive deployment of material would have on the survey results. Three faculty persons administered the survey in four summer courses. These courses were from the Criminal Justice, the Medical Office Administration and the Accounting programs. All students in attendance the day the survey was administered were asked to participate. The faculty administering the survey asked the students to identify questions they did not understand and describe the difficulty experienced. A total of 29 students responded to the survey in the field test.

All response data was compiled in an Excel workbook. Descriptive statistics, chi-square measures of independence and p-value calculations were performed, as appropriate, with the data.

Result

The students who took the survey did not note prompts they could not understand nor did they suggest that responses which described their experience were missing from the instrument.

Table 1 compares the demographics of the field test sample and the college's general student population for the year 2008-2009. The students participating in the pilot of the survey instrument were skewed female, toward older students and toward unemployed students. However, none of the differences between the survey respondent group and the college's general population were statistically significant with the differences in five of the seven categories 50% or more likely to occur at random. While not a near replication of the college population composition, the sample should be considered a reasonable approximation of the college summer population. Other studies completed at the college indicate that the summer student population tends to skew female and older when compared to the overall student population (Preuss, 2008a).

Table 1

Demographics of students participating in the survey field test compared to those of the general student population

Category	Survey participants	General student population	P value
Gender			0.5099
Female	69%	60%	
Male	31%	40%	
Age			
<24 years	34.5%	55.3%	0.6228
25-34 years	31.0%	21.0%	0.1858
35-44 years	20.7%	11.8%	0.1425
45-54 years	10.3%	7.2%	0.5108
>55 years	3.4%	2.7%	0.7949
Employed			0.4935
Yes	58.6%	52.2%	
No	41.4%	47.8%	

The instrument field tested sought to gather information regarding student study habits related to podcasted material. The data related to these questions is in Tables 2 and 3.

Table 2

Student study habits

Category	Little or none	<2 hours	2-5 hours	>5 hours
Time spent weekly studying outside of class	0%	24.1%	55.2%	20.7%
	None	<25%	25-50%	>50%
% of study time spent in RCC computer lab	34.5%	24.1%	37.9%	3.5%
% of study time using own computer	13.8%	17.2%	48.3%	20.7%
% of study time spent listening to podcasts	13.8%	55.2%	31.0%	0%

Table 3

How students utilized course podcasts and where students listened to the podcasts

Category	Percentage	Category	Percentage
Podcast uses		Where or when listen	
Take/revise notes	50.0%	College lab	23.1%
Find information	34.6%	At home	76.9%
Prepare for class	3.8%	Driving	0%
Review after class	3.8%	Exercising	0%
Make up absence	73.1%	Housework	15.4%
Review for test	38.5%	Watching TV	0%
		Watching child	0%
		Study time	34.6%

The instrument field tested sought to gather information regarding student technology preferences related to podcasting. The data related to these questions is in Table 4.

Table 4

Student technology preferences related to podcasts

Category	Never	At least once a week	Two or more per week	<5 times a week
Frequency listen with computer	11.1%	40.7%	11.1%	37.0%
Frequency listen with MP3 player	92.3%	0%	0%	7.6%

Students were also asked if the MP3 player available to them was capable of displaying photographic or video images. 92% of respondents indicated that they did not have access to an MP3 player. 4% of respondents had access to an MP3 player but it could not display images. 4% of respondents had access to an MP3 player that could display images.

A question addressing student comprehension of course content and a second question addressing student confidence were part of the survey. These questions were included to obtain initial measures of the impact of podcasted lectures on student perception of their comprehension of course material and their confidence as a student. The results for these questions appear in Table 5.

Table 5

Student report regarding podcast impact on comprehension and confidence

Category	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Helped understand/ remember facts/concepts	0%	8%	12%	28%	52%
Increased confidence as a student	0%	0%	48%	8%	44%

Students were also asked to express their opinion regarding the efficacy and efficiency of using class notes and part of the text or podcasts to study. These questions were parallel statements with forced yes or no answers. The results are in Table 6.

Table 6

Student report regarding efficacy and efficiency of podcasted lectures as study tool

Category	Yes	No
Reviewing notes or text is an effective study tool	96%	4%
Podcast effective study tool	96%	4%
Reviewing notes or text is a quick study tool	92.3%	7.7%
Podcast quick study tool	72%	28%

Students were also asked to express their opinion regarding the length and content of instructional podcasts. These questions were multiple choice. The results are in Table 7.

Table 7

Student preferences regarding podcast length and content

Category	Percentage	Category	Percentage
Best length podcast		Best pattern podcasts	
<5 minutes	0%	Review material	48%
5-10 minutes	20.8%	Course lectures	44%

Up to 15 minutes	12.5%	Supplemental material	8%
Lecture length	66.7%		

Discussion

The survey field tested was deemed an adequate and appropriate instrument. This conclusion was reached based upon evidence of clarity, a lack of ambiguity and sufficient scope (Ary, Jacobs, Razavieh & Sorensen, 2006). No students indicated difficulty understanding the prompts or responses. No students noted a need to add responses that provided a better description of their experience. And, the completed questionnaires did not include participant error. However, one deficiency was identified on the instrument. The field tested survey had no prompt regarding the race/ethnicity of the participant, an important consideration when determining whether the sample was representative.

The population surveyed was an approximation of the college population in terms of gender, age and employment. It reflected variance from the overall student population common in summer enrollment. However, the variation exhibited was not statistically significant and in nearly all cases was 50% or more likely to have occurred at random (Table 1).

Survey results indicate that the majority of respondents employed computers when studying outside class, that more than 86% of the respondents included podcasted lectures as part of this study time (Table 2) and more than 75% of students surveyed committed in excess of 2 hours a week to studying outside of class (Table 2). This study time included regular usage of college computer labs and personal computers as 41% of students reported lab computer use that exceeded 25% of their study time while 69% reported using a personal computer during 25% or more of their study time (Table 2). The result was that 86% of the students reported utilizing the podcasts during study time (Table 2). Approximately 89% of the students listened to the lectures on a computer but the limited number of students who utilized MP3 players listened frequently, five or more times a week (Table 4). These figures are corroborated by the reporting of where and when respondents listened to the podcasted lectures (Table 3) and the data regarding the use of and characteristics of students' MP3 players.

When listening to the podcasts, students appear to recognize their potential to address the needs of the individual. The most frequent use of the material was to "make up" a missed class (Table 3). The opportunity to listen to what transpired in the classroom is invaluable in this respect. Taking or reviewing notes, preparing for a test and finding information, in that order,

were the second, third and fourth most frequent uses students made of podcasted lectures (Table 3). Not only do students recognize the potential of podcasted lectures, unrestricted access to podcasted lectures appears to be valued by students as it is frequently utilized and utilized to keep abreast of or improve comprehension of course content.

The survey respondents indicated that students believed that listening to podcasted lectures improved their comprehension and their confidence as a student. 80% of the students agreed or strongly agreed with the statement "The podcasts I listened to helped me understand and remember facts and concepts" (Table 5). No students strongly disagreed with this statement, only 8% disagreed and 12% were neutral (Table 5). No students strongly disagreed or disagreed with the statement "Listening to podcasts increases my confidence as a student," 48% of the students reported being neutral regarding this statement and 52% agreed or strongly agreed with it (Table 5).

Students in the survey pilot found the use of podcasted lectures as effective as their notes or text when studying but considered their use less efficient. The same volume of students, 96%, reported that they found reviewing their notes, text or podcasts an effective study method (Table 6). However, 92% of the respondents thought reviewing notes or the text was a quick way to study while 72% thought the same of podcasted lectures (Table 6).

In addition to the preference for using a computer to access podcasts noted above, students expressed preferences in respect to the content of podcasted lectures and their length. The most popular type of content was review material followed closely by course lectures, 48% and 44% of respondents (Table 7). Only 8% of respondents desired supplementary material as podcasts (Table 7). Two-thirds of the students felt that lecture length podcasts were to be preferred with the next highest total, just under 21% of the students, advocating five to ten minute podcasts.

The preferences expressed by the respondents point to access to the classroom content and efficiency being motivating factors in the use of podcasts. First, over 73% of the students reported using a podcast to gather information from a missed class while 50% reported use to revise or take notes (Table 3). This indicates a strong interest in and need for access to the classroom discourse. However, the students expressed a stronger interest in review material than course lectures (Table 7), a preference that would impact the ability to "make up" a class but which emphasizes efficiency in preparation.

The survey results included interesting trends. Students employ computers to access podcasts. This mitigates against a “digital divide” as students have access to computers on campus and many of the survey respondents indicated use of these. Second, podcasts are considered valuable resources but did not replace more traditional sources of course information. The podcasted lectures were utilized by many students but did not become the predominant source of information for any of the pilot study respondents. Third, many students believed that the podcasted lectures aided their comprehension and increased their confidence as students. Finally, respondents indicated a marked preference for lecture length material but wanted both course content and review material made available to them. There was little interest expressed in having supplementary material produced for podcast.

Recommendations

In light of the results of this field test of the survey instrument, the following recommendations are made:

1. It is recommended that instructional podcasting be continued and expanded at the college.
2. It is recommended that data regarding racial background be gathered on the survey.
3. It is recommended that the survey instrument be administered to significant portion of the student population in a fall or spring semester.

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