

Medical Podcasting in Iran; Pilot, Implementation and Attitude Evaluation

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Received: 20 Aug. 2011; Received in revised form: 10 Dec. 2012; Accepted: 29 Dec. 2012

Abstract- Podcasting has become a popular means of transferring knowledge in higher education through making lecture contents available to students at their convenience. Accessing courses on media players provides students with enhanced learning opportunities. Development of teaching methods able to cope with ever-changing nature of medicine is crucial to train the millennium students. Pharmacology education in Tehran University of Medical Sciences has been based on lectures so far; our aim was to implement a pilot study to evaluate the advantages and disadvantages of offering the course contents as podcasts as well as evaluating whether such program can be feasible in our educational program. 46% of students downloaded the podcast according to our download center. 48% favored usage of both internet and DVD-ROM concurrently. Overall 96% of students perceived that podcasting had a positive impact on their learning in pharmacology course. Our results indicate that most of attendants proposed the positive yields of podcasting despite low usage of it, mainly as a pre-class preparing tool.

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Acta Medica Iranica, 2013; 51(1): 59-61.

Keywords: Education; Internet; Pharmacology; Webcast

Introduction

The term podcasting was first introduced in 2004 combining two words “iPod” and “Broadcasting” which was chosen as the word of the year, later in 2005 (1). These days, podcasting gives the opportunity of listening to the courses and missed lectures as well as finding answers of specific questions and revisions. With the increasing need for distant learning, it seems that podcasting will become more popular; leading to a further importance in expressing its benefits and under-privileges (2).

Podcasting in higher education provides ease of access to trusted material by enabling students to download high quality multimedia files from Internet anywhere and anytime. Podcasting has been also a reliable Web 2.0 service for academics to socially distribute knowledge in a variety of medical fields from first year in medical school to continuing medical education courses (3-5).

Guides for recording and podcasting of lectures for medical students have been published to allow the

students to master this technology in their everyday studies. Digital records are mostly reserved in compressed audio file formats called MP3 that can be played with MP3 players, computers and most of the other digital devices. With today’s progress of MP4 files’ technology (so called as Vodcasting), MP4 players are also added to the podcasting to ensure a higher quality (6,7).

Certainly there are some associated disadvantages to be aware of, including diminished students’ attention, reduced professors’ cooperation and actions regarding ethical issues (2). The popularity of the instruments is critical, absence of which acts as a limitation for podcasting (8). Medical curriculum revisions in other countries show that integrated courses rely on self-learning and employing new technologies such as emergence of podcasting (9). Pharmacology courses were taken as a discipline-based curriculum in the third year of MD program until 2008 in Tehran University of Medical Sciences (TUMS); the oldest medical institute in Iran. Since 2009, after comprehensive medical curriculum revision, pharmacology courses became

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integrated into preclinical blocks for each body-organ. Method of pharmacology teaching has been based on lectures so far; however pharmacology was considered as a preferred subject of podcasting medium in previous studies (3).

In this study we have evaluated the advantages, disadvantages and attitudes toward offering the course contents to medical students as podcasts; for which, pharmacology course was chosen to implement the study. Moreover, to evaluate whether if implementing such program is applicable.

Materials and Methods

The content of our podcasts were produced by TechSmith Camtasia Studio v5.0.2 as “Serotonin; Introduction for the pulmonary pharmacology” block. This podcast was distributed by DVD-ROM among randomly chosen students to gather their points of view on developing this content for pharmacology education. The students of the attending bloc were randomized based on their card numbers. After receiving descriptive opinions concerning the quality of lecturer’s voice, time length of podcast and slide transition speed, we managed to produce our next podcast. Our next episode, “Histamine and H1 blockers”, was made available to students before attending the classes through their email service provider; due to the unfamiliarity with Web 2.0 services like RSS. After downloading the file, students were asked to see the multimedia before “Histamine and H1 blockers” class.

The rationale for choosing the mentioned course titles were cooperation of the attending professors. On the other hand there was also no preference on any

special topic. We were able to count the podcast downloads as a measure of podcast usage. The survey questionnaire was distributed among class participants acquiring their attitudes toward utilizing podcasts.

Results

Total 62 randomly assigned students of a unit class took part in our survey. As depicted in Table 1. Students were chosen by systematic randomization of their card numbers. A 46% downloaded the podcast according to our download center. Table 1B shows that 73% preferred to utilize podcasts before the classes in comparison to 27% who would use it as a revision.

Table 1C shows methods of accessing to podcasts: 8% of students, preferred only Internet access to the content of podcasts, 43% inquired only DVD-ROM while 48% favored both methods available concurrently.

Table 1D implies that 96% of the students overwhelmingly perceived that podcasting had a positive impact on their learning in pharmacology course.

Discussion

Our study provides primary results toward assessing students’ preferences using podcasts in Tehran University of medical sciences (TUMS). Initially it should be mentioned that specific research on podcasting is scant, probably since it’s a new technology and the instructors and students especially in the developing countries are not adequately familiar with the equipment.

Table 1. Pilot survey results A) Podcast Download B) Podcast Utility C) Access to Podcast D) Perceived Impact.

A) Podcast Download			
	Downloaded	Not-Downloaded	
Number of students	28	34	
Percent	46%	54%	
B) Podcast Utility			
	Pre-class Practice	Revision	
Number of students	45	17	
Percent	73%	27%	
C) Access to Podcast			
	DVD-ROM	Internet	Both
Number of students	26	6	30
Percent	43%	8%	48%
D) Perceived Impact			
	Positive	Negative	
Number of students	59	3	
Percent	96%	4%	

Podcasts have provided trainees a solid information resource on anatomy. Medical students acquired greater knowledge on specific surgical topics (hemorrhoids and hernias) when a podcast material was available for the subject as compared with traditional lectures, without a loss of satisfaction with teaching (10-12).

According to the report of Kennedy *et al.* in Australia, unrestricted accessibility to podcasts, was 97.3 % for cell phones, 85% for computers' ease of use, 85.9 % for memory sticks and 59.9% for MP3 players, nevertheless 32.1% had no access to MP3 players (8). In a British survey, 91% of students took part in podcasting project which represents the ease of accessibility (3). It has been suggested that availability of lecture recordings reduced stress and anxiety among first year medical students (4). In contrast, only 46% of our attendants downloaded the prepared podcast, insisting on the low usage of newer techniques in under developed infrastructures; 43% usage of more traditional techniques as DVD-ROM is in favor of this as well.

In our survey 73% of students preferred to use podcast before the classes, 27% use it as a revision. Results from the other investigation reported that 85% of students used podcasts for revision, 93% used it to revisit a lecture, 61% utilized it when they had specific question and only 22% of students employed it since they had missed a session on pharmacology course plan (3).

Though it's evident that portable technology is available, but the technological capabilities of our students and their ability to purchase it, is not completely ready to use podcasting in a large area of medical education. A limited 8 percent preference of Internet as the access route admits that. In addition, we mention their willingness to use digital learning network (DLN), which encompasses the lack of behavior of using podcasts, to be not related to their unwillingness, lack of knowledge or missing attitude. Moreover, another study not only insists on this called feasible willingness, but also reports of ascending favor in using podcasts when it's viewed in a medium of an interactive course (13).

As mentioned before, students believed that podcasting is an acceptable educational method (1). Our study confirms this abundant motivation of students in using podcasts. In conclusion, as a result, less than half of our attendants downloaded the prepared podcasts, admitting the low usage of newly introduced technologies and those who downloaded preferred older routes as DVD-ROM more than Internet, which insists

on low structural preparedness for implication of such issues though the basic technology may be obviously in access for everyone. However, 96% of attendants proposed the positive yields of podcasting despite low usage of it, mainly as a pre-class preparing tool.

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