Chapter 9
Using Podcasting and Digital Audio in Higher Education

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**ABSTRACT**

Audio and spoken word has always been an important component of teaching and learning in higher education. However, this remained an ephemeral component given that it is rarely captured for later use. Digital audio production and distribution has given a new means for facilitating the capture and preservation of this learning component for reuse. This chapter reports the authors’ experience with the use of digital audio in teaching and learning in higher education. The use of podcasting as a means of delivering online recorded audio of classroom lectures to enhance the course materials is discussed. Podcast production as a means of learning by students is then highlighted. Finally, the use of audio discussion forums as a means of communication is presented. Results from student surveys and reflections of the authors on their experiences with digital audio usage in the classroom to illustrate its advantages and disadvantages are then presented.

**INTRODUCTION**

The spoken word has long been the primary medium for learning and disseminating information and knowledge (Clark & Walsh, 2004). The emergence of other forms of communication and information dissemination including the printed word and electronic media has not diminished the primacy of aural communication. We need to look no further than the higher education environment where the face to face style of teaching still dominates as the primary means of instruction.

Podcasting has emerged as the premier push technology for delivering online audio content.
Listeners interested in automatically receiving updated content subscribe to a podcast, and, whenever new content becomes available, it is unobtrusively delivered to the users without their explicit involvement. Podcasting does not mean just putting audio content online. The advantage of podcasting is in its ability to automatically deliver content to listeners without their explicit intervention. Increasing availability of sophisticated and inexpensive audio recording and processing technologies has made it easy for individuals to produce and make available audio content online. The ubiquitous PC with its ability to capture audio and the increasing prevalence of audio (e.g., MP3) players with audio recording capability makes this process very convenient. Once the content is captured, it can easily be made available online for downloading in a few simple steps. This has significantly contributed to the growth of individuals making a large amount of audio content available through podcasts. Podcasting has also found increasing application in the higher education environment for many different purposes such as making available lecture audio recordings, audio and music clips relevant to a course. This chapter summarizes our experience with the use of digital audio podcasting in different courses and in different ways at the Hong Kong University of Science and Technology (HKUST). In particular experience in:

- developing and using tools for podcasting,
- using podcasting as a means of delivering online recorded audio of classroom lectures to enhance the course materials,
- using podcasting as an integrated tool across a curriculum,
- using podcasting as a means of motivating, stimulating and engaging students with rich resources and activities, and
- using podcasting to extend the classroom and create a mobile learning environment, are highlighted.

The terms hybrid learning and blended learning have been used to mean the integration of learning styles, tools, techniques and mechanisms, especially in the context of e-learning. Heinze and Procter (2004) define blended learning as learning that is facilitated by the effective combination of different modes of delivery, models of teaching and styles of learning, and founded on transparent communication amongst all parties involved with a course. This chapter discusses the pedagogical uses of digital audio combined with traditional classroom environments, thus fitting the general definition of a hybrid learning environment. The chapter includes the methodology, implementation and evaluation of this form of hybrid learning environment, which provides a useful case study for future research in the field.

First the use of audio in higher education is reviewed. Then some discussions on pedagogical aspects related to the use of audio and podcasting in higher education is presented. Then the authors’ experiences at HKUST which have involved the use of podcasting are presented. Finally conclusions and suggestions for future research are presented. This experience sharing is intended to provide an example of how the new technology can be adopted in teaching and learning.

BACKGROUND

The Importance of Audio in Learning

One question that begs examining in detail is why auditory learning is a useful approach. Gardner’s theory of multiple intelligences (Gardner, 1983) divides the way people learn into eight categories: musical, rhythmic, spatial, mathematical, interpersonal, intrapersonal, and natural. Audio definitely addresses many of these intelligences. A related issue is the three learning styles: visual, auditory and kinesthetic. See for example (Wikipedia, Learning Styles). Indeed, auditory learning is recognized as one of the most basic
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