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Podcasts for efficient learning?

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Abstract

This poster reports the findings from a literature survey aimed at identifying documented effects of podcasting on learning and the learning environment in higher education. Three types of effects are identified and discussed: perceived effects, effects on performance, and effects on teaching practise.

Keywords

Audio and video, blended learning, efficacy of technology, learning objects, podcast, podcasting, teaching practice, user experience, vidcasting, video.

In the course of a few years, podcasting (including vidcasting, i.e. video podcasting) has become hugely popular in higher education. Not many seem to question the value of this new addition to the teacher's toolbox. There are both practical and political reasons for adopting podcasting as means of servicing students better and enhancing the image of an institution. As yet, however, there is not much solid documentation that the use of podcasts has a measurable, beneficial effect on the academic performance of students.

Discarding the many optimistic claims that tend to accompany any new teaching technology, an extensive literature survey was conducted to identify documented effects of the use of podcasts in university teaching (for references up through early 2009, see Heilesen, 2009). Given that the podcasting phenomenon dates back only to 2004, there is a natural shortage of longitudinal studies. Most studies report on podcasting experiments carried out over a semester or less. Thus, there are many immediate impressions and isolated assessments, and this is particularly problematic when dealing with evolutionary effects such as general improvements to the study environment. Documented effects of podcasting can be distinguished into A) perceived effects, B) effects on performance, and C) effects on teaching practise.

Perceived effects should be distinguished from assumptions about the possible effects of podcasting. This is not always easy, because assumed effects naturally provide the motivation for embarking on podcasting, and hence provide a frame of reference for the questionnaires and interview guides used in evaluating the effects of podcasting. Still, response patterns are sufficiently uniform to suggest some general observations:

- 1) Students readily adopt audio and video recordings as supplementary study tools. Notably, they do not seem to change work routines much. Thus, students do not drop classes in favour of recordings, and most prefer to listen to recordings in a concentrated learning situation that also includes a combination of books, computer, notes, and other learning artefacts. Reviewing material is the most common use. It should be noted that patterns of use may be changing, as most of the reports surveyed predate the wide availability of wi-fi that we see today.
- 2) Students generally consider podcasts as helpful in improving the study environment. They provide help in catching up with classes missed, thus reducing stress. And they make possible a self-paced acquisition of information, allowing for repetition, reflection, and supplementary information gathering.

Effects on performance often have been evaluated on the basis of questionnaires rather than on grades, thus yielding rather general response. Even if positive course ratings are important, the key question, whether or not students listening to podcasts perform better, can at best be answered tentatively. Looking at the various figures alone, not many studies are able to report on a significant effect attributable to the technology as such. Rather, derived effects seem to be at work, notably that repetition is helpful to memorizing facts, and that reviewing learning materials works wonders for the retention curve. A case could be made for audio-visual materials supporting a multiplicity of learning styles. But strangely, very few studies discuss learning styles at all.

Effects on teaching practise have been surveyed in a body of literature mostly predating the recent rise to prominence of lecture capturing. “Classroom podcasts”, being one of the main types of podcasts (along with administrative and special occasion recordings; Voegelé & Gard, 2006) can be distinguished into podcasts that are “substitutional” (i.e. documenting classroom teaching, as does lecture capturing; or replacing classroom lecturing), “supplementary” (providing summaries of classroom teaching or additional materials), or “creative” (productions by learners) (McGarr, 2009). Regardless of type, it may be observed that podcasts turn conventional classroom teaching into a “blended learning” environment. Classroom activities can be accessed across time and place, and given that some kind of software is required to store and make available the audiovisual learning objects (learning management system, blog, wiki, etc.), it is fair to say that podcasting technology has been quite influential in stimulating the use of information technology in education. Another general observation is that the introduction of podcasts into a teaching environment serves as a challenge to accustomed teaching practices.

In terms of *substitution*, the most radical solution is to “invert the classroom” i.e. replace all in-class lecturing with podcasts and devote class hours to activities actively engaging the students. In terms of pedagogy, such inversion represents a complete change from instructivist teaching to a constructivist approach to learning. Cases in point include lab work experimenting on the basis of the theoretical material introduced in the podcasts; or group discussions followed by student presentations on lecture content. A variant is to replace compact presentations of facts, theories and methods with podcasts to be reviewed before and after class, while time spent together is used for discussing and exemplifying the subject matter.

Supplementary uses may involve visualizations of cases and practice situations, as well as short presentations on themes known to be difficult for learners to understand. Such presentations may be mini-lectures. But they can also be turned into more engaging formats, such as discussions where two colleagues or a teacher and a student together develop a Socratic dialogue, or they can be turned into assignment where a student or a group of students are responsible for producing a podcast to be reviewed by the entire class. Feedback is another type of supplementary use. An audio-visual feedback to be reviewed at one’s leisure (and possibly repeatedly) affords students a more precise and detailed understanding of the teacher’s comments. Also, in language training oral feedback on written assignments is quite a powerful tool.

Creative use generally refers to letting the students play the active part in documenting project activities, producing presentations for the benefit of their peers, etc. Explaining a subject to others of course is one of the most powerful ways of learning. In addition, the audio-visual form appears to be highly engaging, and indeed, as video becomes an increasingly important means of communication, it has the derived effect of providing the students with useful media training.

To answer the question in the title: There is convincing evidence that the introduction of podcasts in a learning environment has a general, if not actually measurable beneficial effect, both in terms of improving the study environment and in stimulating reflection on a experiments with teaching formats.

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