



Podcast in higher education: Students usage behaviour

Simon Fietze

Faculty of Economics and Social Sciences

Helmut-Schmidt-University/University of the Federal Armed Forces Hamburg

At German universities, podcasting is still a relatively new method of teaching and learning, on which only few studies are available so far. The present report aims to describe students' usage behaviour and their assessment of podcasting. The findings are based on a survey of students at the University of Flensburg. A total of 148 students took part at the two survey sessions. The majority of the surveyed students are inexperienced in the use of podcasts. The lecture podcasts were their first contact with this medium. Mainly a notebook is used to listen - at home - to the recorded lecture. The focus in this regard is on playing back or catching up on the lecture at a later point in time. The main purpose is to systematically prepare ahead of written tests. Slightly more than half of the respondents consider the opportunity to use podcasts to be no substitute for attending lectures. A factor in the success of lecture podcasts is that the students can reuse the recorded lecture. Podcasts are considered a possibility to assimilate the contents of lectures better and more efficiently.

Keywords: podcasting, higher education, recorded lectures, usage behaviour

Introduction

Podcasting is still a relatively new technology that, also in Germany, has found its way from the entertainment to the education sector in the last three to four years. Also German universities, for instance, are now showing a keen interest in podcasting as a teaching aid. This is reflected in, among other things, the fact that the number of podcasts publicly made available by universities and technical colleges has skyrocketed since 2008 (cf. iTunes list of podcasts, etc.). Interviews with German, Austrian and Swiss experts moreover have led to the finding that "the recording of academic lectures is widespread but not widely researched." (Breuer & Breitner, 2008, page. 26) In Germany, for example, 59% of the interviewed universities (also) use podcasts to record lectures etc. and to make them available to the students (Breuer & Breitner, 2008).

So far, only little research has been conducted into usage behaviour and the support afforded by podcasts for the students' learning process in Germany (Hermann et al., 2006; Hürst et al., 2007; Lauer et al., 2004). In most cases it relates to the description of pilot projects in conjunction with information on the use of podcasts in e-learning at universities (e.g. Edirisingha et al., 2007; Universität Zürich, 2006; Ebner & Walder, 2007; Muppala & Kong, 2007). Further, the use of podcasting in higher education in general is discussed, and advantages and disadvantages from the perspective of universities and students are given (e.g. Klee, 2006). Wichelhaus (2008), in a qualitative evaluation conducted at Osnabrück Technical College, examined the acceptance of media-supported lectures from the subjective perspective of students. The findings show, on the one hand, the value added by recorded lectures and, on the other hand, that the students broadly accept flexible and self-organised learning which is supported by podcasts. McKinney et al. (2009) examined the effectiveness of podcasts on the basis of a lecture. The test participants who prepared for their examination using the podcast obtained significantly better results than the group who physically attended. The best examination results were achieved by the students who took notes and listened to the recording several times.

There is an need for more knowledge in this area given the growing importance of podcasting and, to date, inadequate research into the use of podcasts, especially in higher education (in Germany). The aim of the present study is therefore to describe the usage behaviour of students and give their assessment of podcasting. For this purpose the following questions were formulated in advance as a basis for the research:

1. How do students use university podcasts? In which situations are the lecture podcasts used?
2. For what purpose are the lecture podcasts used? What influence does the availability of podcasts have on physically attending classes?
3. What characteristics of a lecture podcast do students consider important (success factors)?
4. What reasons do students have for not using podcasts?

Methodology and approach

After receiving a first evaluation and feedback from both students and lecturers on the produced podcasts, the University of Flensburg decided to broaden what was on offer. In the 2007 summer term, a total of seven lectures, and in the 2007/08 winter term eight lectures were recorded. All the podcasts related to lectures.

The same questionnaire was used for both survey phases and includes a total of six sections (Fietze & Matiaske, 2009; Fietze, forthcoming). The variables used are based mainly on an evaluation sheet developed by Prof. Alexander Klee of Flensburg Technical College. Further items were taken from the questionnaire developed by Rampf (2008) and adapted to the survey.

All in all, 148 students took part in the surveys on podcast usage behaviour. At the end of either term, all the students that had attended one of these 15 lectures were asked to complete a questionnaire about the use of the relevant lecture podcast, irrespective of whether they made use of it or not. In the period from 15 February to 31 March 2008, a total of 92 students completed the questionnaire, and in the period from 15 July to 31 August 2008, 54 questionnaires were completed. Both surveys were carried out using a password-protected online questionnaire.

Findings

Usage behaviour regarding podcasts in general

It can be said regarding the general podcast usage behaviour of the interviewed students that they are inexperienced in their use to some extent, and a large proportion of them had their first contact with this form of medium at the University of Flensburg (72.1%). More than a quarter (27.9%) had already used podcasts prior to the availability of the lecture podcasts. The majority of the students (59.9%) had been using podcasts for only six months or less, most of them being students who learned of the podcasts offered by the University of Flensburg. 21.7% already had broad experience, having been acquainted with and using this medium for more than a year. 18.2% of the interviewed students did not use podcasts at all. In the study conducted by Rampf (2008), for which 1,319 (mainly German) persons were interviewed about their podcast usage behaviour in 2007, the average time spent in using audio podcasts is 3.1 hours, and in the case of video podcasts 1.5 hours, longer per week than figures given by the interviewed students (2.8 hours/week). The number of regularly downloaded podcasts (8.6 audio podcasts and 2.2 video podcasts) given in the study of Rampf (2008) is more than twice that stated by the podcast users at the University of Flensburg (4.2).

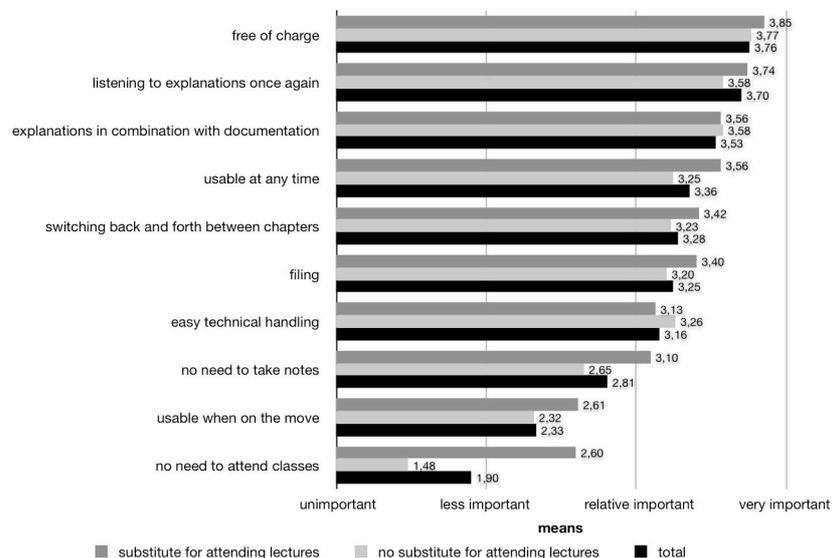
Usage behaviour regarding lecture podcasts

A clear picture emerges regarding the lecture podcast usage behaviour. Most of the students (72.8%) already used podcasts of their lectures or intended to do so (19.0%). Only a small group of students was unwilling to use lecture podcasts (8.2%). Notebooks that had the iTunes program installed were used the most frequently at home to download and play lecture podcasts. This is corroborated by previous surveys, which have shown that students use their laptops more frequently as a playing device than they do MP3 players or iPods (Deal, 2007). Students who listen to a recorded lecture thus select a situation very much resembling that of the actual lecture, where it is necessary to pay proper attention and possibly use other learning aids such as books or notes. The overwhelming majority of the interviewed students concentrated totally on the recorded lectures and carried out no parallel activities while doing so (77.8%). A minority of 14.8% also use lecture podcasts when on the move. The main reasons for using their availability include systematic preparation for written tests and examinations in connection with the attended lectures (80.7%), and the replaying of individual lectures (66.0%). For half of the interviewed podcast users (51.1%), having a recording of a lecture available did not mean no longer attending the lecture and using the recording as a substitute. The study conducted by Bongey et al. (2006) yields similar findings. 246 students were asked in connection with the podcasts' introduction how often, among other things, they attended classes. The findings show "that having podcast lectures available to students does not lead to large declines in class attendance." (Bongey et al., 2006, page 350). Nevertheless, podcasting

is being discussed as a strategy for remedying overcrowded lecture rooms and poor study conditions (Universität Zürich, 2006).

Evaluation of lecture podcasts

A further section of the questions was aimed at evaluating certain aspects of the lecture podcasts and their use for self-learning. The most important characteristic according to the interviewed students is that the lecture podcasts are made available free of charge (cf. Figure 1). The podcast users also rated as highly important that a recording of a lecture enables them to listen to a lecturer’s explanations during the lecture once again, and that they can use this directly in combination with the lecture documentation. Other characteristics of lecture podcasts rated to be rather important in the view of the students were that podcasts can be used at any time, in contrast to lectures, and that it is possible to switch back and forth at will between different chapters of the lecture. Easy technical handling is similarly important for the students, indicating that this aspect, among others, is of vital importance for acceptance on the part of the users (Hürst & Waizenegger, 2006). Not so important to the lecture podcast users was that this enables them to do without their own notes on the lectures. The possibility of mobile use was rated as less important, which was to be expected in view of the findings presented above regarding situations of use (listening to a podcast at home on a notebook, without carrying out any other activities). It was additionally explained above that for half of the interviewed students the recording of podcasts is not a substitute for attending their classes. 45.9% of the students, however, also agreed with this statement and make good their absence by using the lecture podcasts. The aspect of the recordings making it no longer necessary to attend classes is rated as less important, though, and comes last compared with all the aspects asked about (cf. Figure 1). When the assessments of the students from the two above-mentioned groups for which the purpose of podcasts is either a substitute for attending lectures (Substitute Group) or not (Lecture Group) are compared, the order of the aspects hardly changes. Only the easy technical handling of the podcasts is rated as somewhat more important than the other aspects by the Substitute Group. Also, the Substitute Group has higher average values for nearly every aspect compared with the Lecture Group (cf. Figure 1). It hence attributes more importance to these characteristics. This difference in assessment becomes especially evident for the aspect that podcasts make it no longer necessary to attend classes. Even if this podcast characteristic ranks in last place for both groups, the Substitute Group considers it on average to still be “rather important” (2.9), while the Lecture Group rates it as “rather unimportant” (1.48). This difference is also of significance statistically.



Source: Survey among students at the University of Flensburg, 2007 and 2008

Figure 1: Importance of lecture podcast characteristics

In the final section of the questionnaire the students were asked to assess the lecture podcasts with regard to their own learning behaviour and their usefulness in general. The interviewed students tended to agree that they are able to assimilate the contents of lectures better and more effectively by using podcasts (71.1%). The podcast users were almost undecided as regards the assessment whether they are able to assimilate the contents of lectures more efficiently and in a more time-saving way by using podcasts. It is a similar picture regarding the third statement “By using podcasts, my motivation and fun in learning increase while assimilating the lecture contents”. The average in this respect lies neither with complete agreement nor with disagreement.

The students generally regard lecture podcasts as a gain and valuable addition. 83.7% stated that they regarded podcasts which can be downloaded for their lectures as tending to be more important or very important. Only 11.8% consider their usefulness to be less important or even unimportant.

Reasons for not using lecture podcasts

Those students who stated that they do not intend to use the lecture podcasts made available by the University of Flensburg were asked about the different reasons that led to their decision. A total of 12, or 8.2%, of the interviewed students did not intend to use lecture podcasts. As the motivation to take part in the survey and evaluation of podcast availability is lower for those who are not users, it is to be expected that the number of non-users who took part would be lower than that of the users.

The findings concerning reasons for not using podcasts, however, reveal clear tendencies. The main reason of the interviewed students was that they find it difficult to motivate themselves to learn with the aid of podcasts. Also, the majority of the non-users (91.7%) concurred with the statement that learning with the aid of a computer and monitor is not to their liking. Even if the interviewed students do not want to download lecture podcasts, many of them (58.3%) nevertheless see a certain benefit in their availability. Further, the students do not regard the effort involved in software installation and use as being too high (58.3%), and neither the sound quality nor the quality of the graphics or lecture slides is rated as too poor (41.7%).

In summary it can be said that neither operation or quality nor a lack of benefit from what is on offer is the reason for not downloading the podcasts made available by the University of Flensburg. The reasons are rather to be found in the learning habits of the students for whom this form of knowledge assimilation via a computer is not to their liking or difficult to cope with.

Conclusions and future work

This study has provided valuable feedback on the usage behaviour of students and their assessment of podcasting. The surveys have revealed that the overwhelming majority of podcast users at the University of Flensburg first came into contact with the medium of podcasting when downloading lecture podcasts. Before, only few had known about and used the numerous audio and video files available for entertainment, information and educational purposes. Most of students listen to or watch the lecture podcasts with the aid of a notebook at home and, when doing so, rarely carry out other activities but focus on replaying the lecture or catching up on it at a later point in time. They use the available podcasts mainly to systematically prepare for written exams/tests. The students, however, attribute less importance to the circumstance of no longer having to physically attend actual classes because of the lectures being recorded. This disproves the fear of teachers and professors of lecturing to (almost) empty lecture rooms. All in all, the interviewed students emphasized that the lecture podcasts made available were a valuable addition as well as a teaching gain. It is thus little surprise that most students also see podcasts as a possibility to assimilate the contents of lectures better and more effectively. A study conducted by Evans (2008) arrives at similar findings and shows that “[students] are more receptive to the learning material in the form of a Podcast than a traditional lecture or textbook.” (Evans, 2008, page 491).

However, this knowledge also raises new questions, which cannot be answered with this study. Even if students are able to learn better with the medium Podcast than in the lecture and with textbooks, the use of this medium – additive and not alternative – is influenced by the respective learning type. As this study has pointed out, the students value the qualities of the Podcast differently – dependent of with which intention they use the offer and which experience they have in dealing with the medium. Further research on the different learning types and their learning behaviour is necessary. It has to be analyzed whether learning type and learning behaviour differs significantly from those students who do not use the lecture podcasts. In addition, only studies which link the achievements (e.g. exam mark) to the usage behaviour of students can lead to the conclusions that lecture podcasts lead to a better and more effective learning (cf. McKinney et al., 2009). Furthermore it is useful to integrate the overall evaluation of the respective lecture into such a study to control possible effects by the teaching quality. Further research will help to create a standard for podcasts in a university and aim the offer at the recipient – the students.

References

Bongey, S. B., Cizadlo, G. & Kalnbach, L. (2006). Explorations in Course-Casting: Podcasts in Higher Education. *Campus-Wide Information Systems*, 23(5), 350-367.

- Breuer, F. & Breitner, M. H. (2008). *Aufzeichnungen und Podcasting akademischer Veranstaltungen in der Region D-A-CH: Ausgewählte Ergebnisse und Benchmark einer Expertenbefragung*. IWI Diskussionsbeiträge 26, Universität Hannover. Institut für Wirtschaftsinformatik, Hannover.
- Deal, A. (2007). *A Teaching with Technology White Paper. Podcasting*. Carnegie Mellon. Office of Technology for Education, Pittsburgh.
- Ebner, M. & Walder, U. (2007). e-Learning in Civil Engineering - Six Years of Experience at Graz University of Technology. In D. Rebolj (Hrsg.), *Bringing ITC Knowledge to work. Proceeding of 24th W78 Conference Maribor 2007 14th EG-ICE Workshop 5th ITC@EDU Workshop*, 749-754.
- Edirisingha, P., Salmon, G. & Fothergill, J. (2007). *Profcasting - a pilot study and guidelines for integrating podcasts in a blended learning environment*. Paper presented at the Fourth EDEN research workshop, Castelldefels, Spain, 25-28 October 2006.
- Evans, C. (2008). The effectiveness of m-learning in the form of podcast revision lectures in higher education. *Computers & Education*, 50(2), 491-498. *DEVELOPMENT, DISRUPTION DEBATE - Selected Contributions from the CAL 07 Conference*.
- Fietze, S. (forthcoming). *Podcast in Higher Education: An Evaluation at the University of Flensburg*. Danish-German Research Papers. International Institute of Management, University of Flensburg and Department of Border Region Studies, University of Southern Denmark.
- Fietze, S. & Matiaske, W. (2009). *Podcast in der Lehre: Bericht über die Nutzung an der Helmut-Schmidt-Universität*. Bericht Nr. 20, Werkstatt für OPF, Berlin. <ftp://hermes.unibw-hamburg.de/werkstatt/berichte/bericht20.pdf>
- Hermann, C., Hürst, W. & Welte, M. (2006). Informatics Education Europe – The eLecture Portal: An advanced Archive for Lecture Recordings. *Informatics Education Europe Conference*, Montpellier, France. http://ad.informatik.uni-freiburg.de/centrep/data/files/hhw2006_IEEpaper_final.pdf
- Hürst, W. & Waizenegger, W. (2006). An Overview of different Approaches for Lecture Casting. *Proceedings of IADIS International Conference Mobile Learning 2006*, Dublin, Ireland. http://ad.informatik.uni-freiburg.de/~huerst/Publications/2006_ml.pdf
- Hürst, W., Welte, M. & Jung, S. (2007). An evaluation of the mobile usage of e-lecture podcasts. *Proceedings of Mobility 2007*, Singapore. http://people.cs.uu.nl/huerst/Publications/2007_mobility.pdf
- Lauer, T.; Müller, R. & Trahasch, S. (2004). Learning with lecture recordings: Key issues for end-users. *Proceedings of the 4th IEEE International Conference on Advanced Learning Technologies*, Joensuu, Finland.
- Klee, A. (2006). Zeitgemäßes Instrument - aber keine Wunderwaffe. Podcasting als innovativer Ansatz in der Hochschullehre. *Forschung & Lehre*, 10, 578-579.
- McKinney, D., Dyck, J. L. & Luber, E. S. (2009). iTunes University and the classroom: Can podcasts replace Professors? *Computers & Education*, 52(3), 617-623.
- Muppala, J. K. & Kong, C. K. (2007). *Podcasting and its use in enhancing course content*. The Hong Kong University of Science and Technology. Department of Computer Science and Engineering.
- Rampf, B. (2008). *Gemeinsamkeiten und Unterschiede von Podcastnutzern*. Diplomarbeit, Ludwig-Maximilians-Universität München. Institut für Kommunikationswissenschaft und Medienforschung, München.
- Universität Zürich (2006). *Bildung für unterwegs: Bildung für unterwegs: Evaluationsresultate der Semester 04/05 und 05/06*. [Online; status 21 April 2009] http://www.getinvolved.uzh.ch/pdf/Evaluationsresultate_Semester_WS_0405_und_WS_0506.pdf
- Wichelhaus, S. (2008). *Weg von der klassischen Frontalvorlesung - Evaluation von Akzeptanz und Lernunterstützung durch Podcasts als integraler Vorlesungsbestandteil*. <http://usability.fh-osnabrueck.de/hybrideslernen.html> [Online; status 28 April 2009]

Author: Simon Fietze, Research Associate, Helmut-Schmidt-University/University of the Federal Armed Forces Hamburg. Faculty of Economics and Social Sciences, Chair of Business Administration especially Leadership and Labour Relations, Holstenhofweg 85, 22043 Hamburg, Germany.
E-Mail: fietze@hsu-hh.de

Please cite as: Fietze, Simon (2009). Podcast in higher education: students usage behaviour. In *Same places, different spaces. Proceedings ascilite Auckland 2009*. <http://www.ascilite.org.au/conferences/auckland09/procs/fietze.pdf>

Copyright © 2009 Simon Fietze

The author assigns to ascilite and educational non-profit institutions, a non-exclusive licence to use this document for personal use and in courses of instruction, provided that the article is used in full and this copyright statement is reproduced. The author also grants a non-exclusive licence to ascilite to publish this document on the ascilite Web site and in other formats for the *Proceedings ascilite Auckland 2009*. Any other use is prohibited without the express permission of the author.