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Sounds for Study: Speech and Language Therapy Students' Use and Perception of Exercise Podcasts for Phonetics

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Currently little is known about how students use podcasts of exercise material (as opposed to lecture material), and whether they perceive such podcasts to be beneficial. This study aimed to assess how exercise podcasts for phonetics are used and perceived by second year speech and language therapy students. Eleven podcasts of graded phonetics exercises were produced and made available to the 36 students in the cohort, who then took part in two voluntary surveys. Surveys were completed by 26 and 30 students respectively. Responses show that students tend to listen to the podcasts on a computer at home, rather than on an mp3 player when on the move. Many students also listen to the podcasts with family and friends. Students report that they found the exercise podcasts very useful for their learning. They liked the ability to repeat the recordings many times and felt that there was improvement in their confidence in transcription and in their test scores due to using them. For this subject they would prefer exercise podcasts to recordings of lectures.

As part of their training, students of speech and language therapy must become expert phoneticians and learn how to transcribe. Phonetic transcription involves capturing the sounds of speech in written form using the International Phonetic Alphabet (IPA). As phonetic transcriptions of disordered speech will often form the basis of decisions about diagnosis and treatment for clients, a high level of competence and accuracy in this area is desirable. Indeed, the United Kingdom Health Professions Council Standards of Proficiency (2007) indicate that Speech and Language Therapists must be able to "analyse clients' abilities and needs using, where appropriate, phonetic transcription" (p. 9); however, the challenges facing the novice transcriber are considerable. These challenges are partly due to the composite nature of phonetics training. Students must master aspects of knowledge (how sounds are produced, what their acoustic properties are, how sounds contribute to meaning in languages) and skills (how to produce, perceive and symbolize a wide variety of English, non-English and clinical sounds) and transfer these to clinical practice.

In addition, students may find it difficult to practice and revise for phonetics. For most students, phonetics will be an entirely new area of study. Even if it has been addressed at A-level, or when learning another language, the phonetics training for speech and language therapy is considerably more advanced. As phonetics is not an area with which most non-specialists are familiar, it is usually not possible for students to get guidance from friends or family, and therefore specialist teachers are needed. Due to the inherent difficulty of the subject and to a lack of general knowledge about speech, phonetics is often considered to be a difficult and challenging subject.

One of the ways in which phonetics teaching and learning can be enhanced, and some difficulties with the subject overcome, is through the use of technology. Phoneticians frequently make use of technology in the classroom (e.g., Ashby, Figueroa-Clark, Seo, & Yanagisawa, 2005), through virtual learning environments (VLEs), and in terms of online, freely available tutorials and exercises (e.g., the SIPhTra project). Podcasting is one of the newest forms of technology to be widely used for learning and teaching (e.g., Panday, 2009, p. 251; Sandars, 2009). This technology allows media to be provided to students via the internet and optionally downloaded to mp3 players. Educational podcasting has increased in popularity over the last few years; it is the subject of a long-term investigation by the IMPALA project, which culminated in the first textbook about the technology by Salmon and Edirsingha (2008).

Podcasting for the teaching and learning of phonetics is attractive because it may help to overcome many of the difficulties students face with the subject. It allows students to practice transcription in a safe environment, which may help them surmount the notion that phonetics is a difficult subject. Being audio-based, podcasts are a welcome alternative to solely paper-based exercises, as students can work on data similar to that provided in class or in the clinic. Finally, phoneticians are well placed to make podcasts, as they are already experts in recording and working with speech. Thus, the quality of the recordings should be greater than those made by the "sound amateurs" described by Educase (2005). For all these reasons, it seems that podcasting is a tool that should be considered as an option for training students in phonetics.

Choice of Exercise Based Podcasts

For this study a series of podcasts was designed for second year undergraduate students of speech and language therapy. These students have studied introductory phonetics and phonology in their first year.

In their second year they extend their knowledge and skills to cover the vast majority of sounds that can be produced by the human vocal tract, and to begin to think about clinical uses of phonetics. The year culminates with the phonetics viva, which is the final official assessment of phonetics in the degree course. Because there are only 40 contact hours throughout the year, it is imperative that students are directed towards resources that allow them to practice their skills in their self-study time.

Each podcast recorded for this study contained exercise material aligned with the students' current levels of knowledge and skill. The majority of podcasts in an educational context consist of either the dissemination of practical information and news (Harris & Park, 2008, p. 548) or recordings of lectures (Sandars, 2009, p. 387), which can be used for revision or review. Despite the preponderance of lecture material in educational podcasts, Laing and Wooton (2007) advise new podcasters: "don't just record a lecture, unless you have a strong educational reason for doing so" (p. 8). This advice seems particularly appropriate for the current context, as the pedagogical rationale (Edirisingha, Salmon, & Nie, 2008, p. 155) is to develop competency in transcription skills.

Models of skills development (e.g., Dreyfus & Dreyfus, 1980 and subsequent works) suggest that students can progress from novice to practitioner by experiential learning (e.g., Kolb, 1984). By engaging with numerous examples and situations in which the skill is used, students begin to perceive more aspects of each situation, and subsequently choose which aspect to focus on and how to act (Dreyfus, 2004). The real challenge for learning phonetic transcription skills, therefore, is to practice what has been learned in class with new material. Therefore, because the aim here is to develop competence in a *skill*, a podcast of the lecture will not extend students' abilities in the same way as a podcast of new exercise material at a similar level of difficulty.

Another advantage of *exercise* podcasts may be to introduce a level of interactivity not found when lecture material alone is presented. Shantikumar (2008) notes that, although (traditional, lecture-based) podcasts have many advantages over other technology assisted learning methods, there is some loss of the interactive element (p. 4). Similarly, the report by Educase (2005) suggests that podcasts are "not designed for two-way interaction or audience participation." In addition, Pastore (2008) indicates that the main downfall of (lecture-based) podcasts for students is the lack of an interactive element with the tutor (p. 59). It is hoped that a podcast of exercises, rather than a repetition of lecture material, may go some way towards introducing a more interactive element to podcasts.

Whilst podcasting is a new and exciting technology, it is, as always, important to ensure that this initiative is of real benefit to students. As Sandars (2009) states, "evaluation of what works, and most importantly what does not work, is an essential for the further development of podcasts in medical education" (p. 389). In addition, "production of such tools is labour intensive, so to deem them worthwhile it is important to assess their impact on the target audience" (Shantikumar, 2008, p. 3). All new educational initiatives need thorough evaluation, including evaluations of student use and perceptions, which were utilized in this study.

The present study is novel as the podcasts are exercise- rather than lecture-based, and because podcasts were produced and evaluated for phonetics for the first time. The research aims were to determine how students used podcasts of exercise material for phonetics, and to investigate if students perceived such podcasts to be beneficial for their learning. Below the results of surveys about students' usage and perceptions of the podcasts are presented.

Method

Participants

Two surveys were completed by students in the second year of an undergraduate Speech and Language Therapy degree at a metropolitan university in the United Kingdom. Students had covered introductory phonetics and phonology in their first year, along with modules in linguistics, psychology and social and professional studies. In their second year they begin to consider clinical aspects of phonetics and phonology, completing modules covering speech disorders, developmental psychology, and language processing. The same cohort took part in both surveys. The cohort consisted of 36 students, of whom 26 took part in the first survey and 30 in the second survey as described below. Participants were all female (broadly reflecting the gender balance in the department and the profession), and aged between 19 and 45. Ethical clearance was gained from the university, and anonymity was insured by various electronic methods of data collection.

Measures

Both surveys contained a number of Lickert-type statements. The first survey, at the end of the autumn term contained 12 questions. It was released via the VLE, and, in addition to quantitative feedback, qualitative comments were also solicited. The survey was optional for students, but 26 out of 36 responded. Based on the responses to the first survey and lecturer

reflections on the podcasts, a number of follow-up questions were derived which formed the basis for the second survey. This second survey contained 11 questions and was conducted at the end of the spring term. It was delivered in class, immediately after the standard teaching evaluation for the module, using Public Response System handsets. Hence, for the second survey, only quantitative feedback was gathered. 30 out of 36 students were present in class on the day of the survey. All students were issued with a handset, but told that they did not have to respond to any questions that they did not want to. For all questions in the second survey between 27 and 30 students responded.

Procedures

Eleven podcasts consisting of exercises in phonetic transcription were recorded over the two teaching terms in the 2008/9 academic year, and students were surveyed about their usage of and feelings about the podcasts. Podcasts were released every normal teaching week (that is when there wasn't an in-class assessment, reading week, or guest speaker), as Edirisingha et al. (2008) suggest that regular issue of podcasts will encourage students to use them (p. 163). The podcasts were released on the VLE (Blackboard) and also via iTunes and Google Reader. A .pdf file of model answers was made available at the same time as each podcast to assist students in comparing their answers to a model and reflecting on the differences and similarities between the two.

The podcasts were audio only, rather than audiovisual. Audiovisual podcasts are becoming more popular, and have been used, for example to teach software use (Mount & Chambers, 2008). However, they were not used in this study for two reasons, one theoretical and one practical. The theoretical reason relates to the use of visual information for transcription. Whilst visual information can be used to help ascertain place of articulation and lip rounding, it is also desirable to be able to transcribe fine acoustic distinctions solely with auditory information. There is also, as yet, no experimental evidence that transcriptions made with visual information differ in accuracy or reliability to those made only with audio information. Practically, not all mp3 players can play video, especially of sufficiently high quality to be useful in such an exercise. Also, when in the clinic, students and practitioners will often need to be able to transcribe while also doing several other activities (such as managing assessment materials), so transcription from audio alone is desirable, especially as therapists will only rarely be able to video clients for later transcription.

Each podcast was around four to five minutes long. Evidence suggests that students can fail to pay attention once duration reaches around 10-15 minutes (Edirisingha et al. 2008, p.164; Sandars, 2009, p. 388), and Chan and Lee (2005) indicate that most students would prefer to listen for around 9-10 minutes (p. 66). As students were expected to engage with the materials and play sections several times in order to make their transcriptions, the total duration of work required for each podcast was around 10 minutes.

Podcasts were designed to be aligned with learning outcomes, the current stage of student learning, and upcoming assessments. In this way they were graded, as suggested by Edirisingha et al. (2009, p. 163) and became gradually more challenging over the course of the year. They included a number of different exercises like those used in class, such as substitutions performed in English words, nonsense word transcription, English phonemic transcription and intonation analysis. Thus, the podcasts were designed to allow students to practice a wide range of the transcription and listening skills needed for university assessments and clinical practice.

Results and Discussion

Survey 1

Full details of questions and responses for Survey 1 are shown in Table 1. When questioned at the end of the autumn term 69% of the 26 students who responded had listened to all four available podcasts, and the other respondents had listened either to 3 (12%), 2 (8%) or 1 (12%). This result indicates that answers to the remainder of the survey questions are based on the experience of a large number of students, most of whom have listened to several podcasts.

Students indicated overwhelmingly that they listened to the same podcasts repeatedly. Sixty-nine percent listened to each podcast they downloaded at least three times, and the remainder listened two or three times. Although designed to be listened to on only one occasion (but with several repetitions of each section for transcription) it seems that students were actually using podcasts several times for practice and revision. For future studies it would be useful to find out when these repetitions take place. For example it would be useful to know if the listenings happen in rapid succession or if students listened immediately when the podcasts were released, and then revisited them in later months for revision.

Several questions in the survey investigated how students downloaded and listened to podcasts. Sixty-five percent of students preferred to listen on a computer rather than an mp3 player, despite the fact that 81% owned an mp3 player. This is in line with the findings of Lane (2006), and Whitney and Pessina (2008), and supports Lane's assertion that "mobility

Table 1
Questions and Responses for Survey 1

Question	Response	Percentage
How many of the articulatory phonetics podcasts have you listened to?	0	0
	1	11.5
	2	7.7
	4	11.5
	5	69.2
On how many separate occasions do you normally listen to each podcast?	Just once	0
	2 or 3 times	30.8
	More than 3 times	69.2
What is your preferred way of listening to the podcasts?	On a computer	65.4
	On an mp3 player	34.6
Do you own an mp3 player?	Yes	80.8
	No	19.2
How do you prefer to access the podcasts	Through the VLE	53.8
	Through iTunes	42.3
	Through Google Reader	3.8
	Other	0
How easy have you found it to access the podcasts?	Very easy	53.8
	Fairly easy	46.2
	Not at all easy	0
Have you subscribed to the podcasts using a service such as iTunes or Google reader?	Yes	50
	No	50
How useful have the podcasts been for your learning	Not at all useful	0
	Somewhat useful	0
	Very useful	100
How does having access to podcasts affect your attendance at phonetics lectures?	I am less likely to attend the lectures	3.8
	The podcasts make no difference to my attendance	88.5
	I am more likely to attend lectures	7.7
Would you prefer a podcast of exercises of or the lecture?	I would prefer a podcast of the lecture	0
	I would prefer a podcast of exercises	100

may not be the driving factor behind student use" (p. 1). Intuitively it seems that this trend may be even more important for exercise-based podcasts, when students need to engage with the material rather than simply listening. Other driving factors behind podcast usage were investigated further in the second survey below.

Fifty-four percent of students accessed podcasts through the VLE, 42% through iTunes, and 4% through Google Reader. Numbers were split equally between those who had subscribed to podcasts and those who had not. This result indicates that it is worth the small amount of extra time and effort it takes for the lecturer to make podcasts available through iTunes and Google Reader, rather than only uploading them to the VLE. Not only do many students like to access podcasts through other applications, but the subscription service that these other applications provide is utilized by half the students, meaning that any new content will be automatically delivered to them as soon as it is made available.

Fifty-four percent of students indicated that it had been very easy, and 46% fairly easy, to access the podcasts. None indicated that they had found it difficult to access podcasts, and this is probably due to the clear instructions provided by the e-learning team at the University. At the start of term, students were provided with detailed instructions about how to download and subscribe to podcasts, including links to various programs and references on the internet.

Eighty-eight percent of students said that podcasts make no difference to their attendance at lectures. Only one person indicated that they were less likely to attend class, while two people indicated that they were more likely to attend. This is in line with the results of other authors (Brittain, Glowacki, Van Ittersum, & Johnson, 2006; Lane, 2006; Pilarski, Piotr, Johnstone, Pettepher, & Osheroff, 2008), which show that, even when students know a lecture will be provided as a podcast, the majority of students still attend the lecture. In addition, Pastore (2008) found that students do not

prefer a podcast to a live version of a lecture (p. 59), and Tynan and Colbran (2006) found that 63% of students using podcasts felt that they had encouraged them to keep studying the related modules (p. 830). From the results here it seems that podcasts of *exercises* are equally unlikely to reduce student numbers in class.

One hundred percent of respondents said that they would prefer a podcast of exercises to a podcast of the lecture. This is an interesting finding as it demonstrates the value of providing exercise material rather than simply recording class contact time. Although it is more time consuming for the lecturer to devise and record new exercises, the students clearly perceive the benefit of exercises over a recording of lecture material for this subject.

One hundred percent of the 26 students who responded to the survey said that they felt the podcasts were very useful (the most positive response of the four options given) for their learning. This compares favorably to Tynan and Colbran (2006) and Whitney and Pessina (2008) who report that around 65% and 93% of students, respectively, agreed or strongly agreed that the podcasts assisted their learning. The differences found in the results in the literature may be due to the number or type of podcasts students are exposed to, or to differences inherent across subjects and cohorts.

The qualitative statements made by students are revealing. Twenty-three students (88% of those who completed the first survey) commented about the podcasts. In line with Bongey, Cizadlo, and Kalnbach (2006) the prompt for further feedback did not suggest that the students should make either positive or negative comments, as students were simply asked to "please add any other comments about the podcasts that you would like to make" (p. 361). However, all the comments were positive. The most common responses contained praise for the podcasts such as "fantastically helpful" and "very beneficial and worthwhile." Three students indicated that they would like a podcast of the lecture *and* exercises, while one said that they did not want the lecture to be podcasted. A few gave concrete suggestions such as to provide "more practice exercises" or to create "more tracks between sounds," which will be helpful in future development. Students also noted that podcasts provided "a backbone to my revision," that they "helped…immensely for the Christmas exam," and "made a difference to my mark in the recent class test." One student also noted that "I don't do enough work for phonetics generally, but they [podcasts] are one way I know I'd do more."

Survey 2

Full details of questions and responses for Survey 2 are shown in Table 2. The majority (62%) of students who responded had listened to all seven of the second term's podcasts (14% listened to six, 7% to five, 3% each to two and three podcasts, and 10% to one), which is similar pattern to that found in Survey 1.

Ninety-three percent of students stated that they usually listened to their podcasts at home. Only 7% listened when travelling, and no one listened at university or elsewhere. This is roughly in line with other results in the literature (Brittain, et al., 2006; Rothwell, 2008; Tynan & Colbran, 2006), which specifically address where students listen to podcasts. Combined with the findings from Survey 1, which indicate that most students listen on a computer rather than an mp3 player, it seems that, for the majority of students across disciplines, the portability of podcasts is not their most attractive feature, as stated by Lane (2006). This issue was addressed in another question, when students were provided with three options and asked which they liked best about phonetics exercise podcasts. The options were "portability," "ability to repeat many times," and "ability to listen in a relaxed environment." The final two options were included as they had been mentioned in the qualitative responses to the first survey. Sixty-four percent of students chose the ability to repeat as the most important aspect of podcasts [mirroring similar results from Rothwell (2008) and Tynan and Colbran (2006)], 29% chose the ability to listen in a relaxed environment, and only 7% chose portability.

Once materials can be taken away from university, the possibility that others can share them becomes a reality. This is particularly the case with podcasting, as the audio material can be played at home, over speakers, so that whomever is present can hear it. While 36% of students listen to podcasts alone, for the majority there appears to be a social element to their usage (cp. Panday, 2009). Thirty-two percent listen with family not studying phonetics, 18% with other students of phonetics at their institution and 14% with friends not studying phonetics. Presumably the high numbers of students listening to podcasts with other people is linked to the strong tendency for students to listen to their podcasts at home.

Two questions investigated how students used the model answers provided for podcasts. Fifty-seven percent downloaded them at the same time as the podcasts while 39% waited until afterwards (4% downloaded the answers first). However, 93% waited until after listening to the podcast to look at the answers (3% looked first, and 3% looked while listening). This was how the answers were designed to be used, encouraging students to attempt exercises on their own first, before looking at the model and then comparing their results to it. Although no explicit instructions were given about this, it seems that students followed closely the pattern that is used in class, which is to look at the answers at the end of the exercise.

Table 2
Questions and Responses for Survey 2

Question	Response	Percentage
How many phonetics podcasts have you listened to this term?	1	10
	2	3
	3	3
	4	0
	5	7
	6	14
	7	62
Where do you listen to your podcasts most often?	At home	93
	When travelling	7
	At university	0
	Somewhere else	0
Who else listens to podcasts with you?	No one	36
	Other students of phonetics from here	18
	Other students of phonetics from a different university	0
	Friends not studying phonetics	14
	Family not studying phonetics	32
When do you download the answers?	At the same time as the podcasts	57
	Before the podcast	4
	After the podcast	39
	Not at all	0
When do you first look at the answers?	Before listening to the podcasts	3
	While listening to the podcasts	3
	After listening to the podcast	93
	Not at all	00
What do you like best about podcasts?	Portability	7
	Ability to repeat many times	64
	Facility to listen in a relaxed environment	29
Would podcasts have been useful in the first year?	Yes	89
	No	11
How much do podcasts aid your revision for tests?	Not at all	4
	A little bit	7
	Quite a lot	21
	Very much	68
Do podcasts help you to feel more confident in transcription?	Not at all	11
	A little bit	26
	Quite a lot	44
	Very much	19
Do you think using the podcasts helped you to get higher marks in tests?	Yes	76
	No	3
	Don't know	21

Additional questions aimed to gauge what students were gaining from using podcasts and how useful students find them. Eighty-nine percent of students said podcasts would have been useful in their first year. However, experience trialling podcasts with the first year cohort had revealed that uptake was significantly less than for the second year cohort. Likewise an HE Academy report (2009) cites evidence that students in the early years of university were less familiar with podcasts, and less comfortable using them, than other forms of information technology such as email and VLEs. However, the result from this survey, relying on the benefit of hindsight from more advanced students, indicates that it may be worthwhile persevering with podcasts in the early stages of degrees.

Nineteen percent of students said they felt "very much more" confident in transcription after using podcasts. Forty-four percent said they felt "quite a lot more confident," 26% said they felt a "little bit more confident," and 11% said they were not more confident

at all after using podcasts. In terms of revision, 68% of students said that podcasts aided their revision for phonetics very much, 21% said they aided revision quite a lot, 7% a little bit and 4% not at all. This clearly indicates that the majority of students felt the podcasts of exercises were useful in terms of revising for tests, and although confidence is affected, too, the results here were less striking. The somewhat less dramatic effect of podcasts on confidence is likely to be due to the nature of the material which the podcasts contain. The exercises closely followed the format of upcoming tests, so it seems reasonable for the students to assume that the benefits in using podcasts lay in revision. When asked about this, 76% said the podcasts had helped them get higher marks in tests (21% said they didn't know if the podcasts had helped, and 3% said podcasts hadn't helped). It is likely that podcasts more directly linked to clinical work would help to improve confidence in transcription still further.

Conclusion

The current project has investigated second year speech and language therapy students' opinions and usage of phonetics exercise podcasts. Of course this study relies on students reporting accurately their own thoughts and usage statistics. However, when a comparison can be made, the student responses seem to match with what has been observed by the lecturer. For example, attendance this year has been good with around 30/36 students attending class every week, further supporting the findings that podcast usage does not affect class attendance.

Students report that they think podcasts improved their marks in tests, but this is very difficult to verify objectively. Comparisons between cohorts are not especially illustrative as we have no way of knowing how the current cohort would have performed without the podcasts. Indeed, Bugos, Nelson, & Dixon (2009) indicate that, in one of their two pseudo-experimental settings, there was no clear link between performance and podcast usage (p. 44). Tracking the usage of individual students may also be unhelpful, as those students who are more motivated may be the very students who choose to use podcasts. The relationship between podcast usage and performance in assessments is clearly an area that needs further exploration as the use of educational podcasting increases.

A further issue to consider from the current study is how to transfer the highly positive results related to revision and perceived test performance into more robust improvements in student confidence. As suggested above, it seems likely that some additional podcasts using pseudo-clinical or real clinical data might help to improve confidence still further. This type of podcast is the focus of the next phase of this study.

The current study investigated speech and language therapy students' use of and perceptions about podcasts of phonetics exercises. Results indicate that the majority of students use podcasts and think that they improve their grades in tests and their confidence in transcription. Most students listen at home, on a computer, and often with family or friends. This indicates that podcasts for phonetics are not useful for their portability but for their ability to be used in a relaxed environment and repeated several times. Most students prefer a podcast of exercises to a podcast of the lecture for this practical subject, which is something that might be considered by lecturers in similar fields.

References

Ashby, M., Figueroa-Clark, M., Seo, E., & Yanagisawa, K. (2005). Innovations in practical phonetics teaching and learning. *Proceedings of the Phonetics Teaching and Learning Conference*, UCL.

Bongey, S., Cizadlo, G., & Kalnbach, L. (2006). Explorations in course-casting: Podcasts in higher education. *Campus Wide Information Systems, 23*(5), 350-367.

Brittain, S., Glowacki, P., Van Ittersum, J., & Johmson, L. (2006). Podcasting lectures. *Educase Quarterly, 3*, 24-31.

Bugos, J., Nelson, J., & Dixon, M. (2009). Podcasting: A method of enhancing course perceptions and performance in music appreciation. *International Journal of Instructional Technology and Distance Learning, 6*(1), 37-46.

Chan, A., & Lee, M. (2005). An MP3 a day keeps the worries away. *Proceedings of the student experience conference*, Charles Stuart University, 59-71.

Dreyfus, S., & Dreyfus, H. (1980). A five-stage model of the mental activities involved in directed skill acquisition. Unpublished report, University of California, Berkeley.

Dreyfus, S. (2004). The five-stage model of adult skill acquisition. *Bulletin of Science, Technology and Society, 24*(3), 177-181.

Edirisingha, P., Salmon, G. & Nie, M. (2008). Developing pedagogical podcasts. In G. Salmon & P. Edirisingha (Eds.), *Podcasting for learning at universities* (pp. 153-168). Oxford, UK: OUP.

Educase. (2005). *Seven things you should know about podcasting*. Retrieved from http://net.educause.edu/ir/library/pdf/ELI7003.pdf

Harris, H., & Park, S. (2008). Educational usages of podcasting. *British Journal of Educational Technology, 39*(3), 548-551.

HE Academy Committee of Inquiry into the Changing Learner Experience (2009). *Higher education in a*

web 2.0 world. Retrieved from http://clex.org.uk/CLEX_Report_v1-final.pdf

Health Professions Council. (2007). *Standards of proficiency - speech and language therapists*. Retrieved from http://www.hpcuk.org/assets/documents/10000529Standards_of_Proficiency_SLTs.pdf

IMPALA Project. (2006). Retrieved from the Informal Mobile Podcasting and Learning Adaptation website: http://www.le.ac.uk/impala/

Kolb, D. (1984). *Experiential learning*. Englewood Cliffs, NJ: Prentice Hall.

Laing, C., & Wooton, A. (2007). Using podcasts in higher education. *Health Information on the Internet, 60*, 7-9.

Lane, C. (2006). *UW podcasting: Evaluation of year one.* Retrieved from http://catalyst.washington.edu/research_development/papers/2006/podcasting_year1.pdf

Maidment, J. (2002). *System for interactive phonetics training & assessment* (SIPhTrA). Retrieved from http://www.phon.ucl.ac.uk/project/siphtra.htm

Mount, N., & Chambers, C. (2008). Podcasts and practicals. In G. Salmon & P. Edirisingha (Eds.), *Podcasting for learning at universities* (pp. 43-56). Oxford, UK: OUP.

Panday, P. (2009). Simplifying podcasting. *International Journal of Teaching and Learning in Higher Education, 20*(2), 251-261.

Pastore, R. (2008). Students' perceptions of podcasts in the classroom. *International Journal of Instructional Technology and Distance Learning, 12*(5), 55-62.

Pilarski, P. P., Johnstone, A. D., Pettepher, C. C., & Osheroff, N. (2008). From music to macromolecules: Using rich media/podcast lecture recordings to enhance the preclinical educational experience. *Medical Teacher, 30*(6), 630-632.

Rothwell, L. (2008). Podcasts and collaborative learning. In G. Salmon & P. Edirisingha (Eds.), *Podcasting for learning at universities* (pp. 121-131). Oxford, UK, OUP.

Salmon, G., & Edirisingha, P. (Eds.). (2008). *Podcasting for learning in universities.* Oxford, UK: OUP.

Sandars, J. (2009). Twelve tips for using podcasts in medical education. *Medical Teacher, 31*(5), 387-389.

Shantikumar, S. (2008). From lecture theatre to portable media: Students' perceptions of an enhanced podcast for revision. *Medical Teacher, 31*(6), 535-538.

Tynan, B., & Colbran, S. (2006). Podcasting, student learning and expectations. *Proceedings of the 23rd annual ASCILITE conference: Who's learning? Whose technology?* University of Sydney, 825-832.

Whitney, E., & Pessina, M. (2008). Does availability of audio podcasts enhance the classroom experience for first year dental students? Data on use and perceived benefits. *International Journal of Instructional Technology and Distance Learning, 5*(8), 27-32.

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