

Podcasting: Past Issues and Future Directions in Instructional Technology and Language Learning

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Abstract

Podcasting has been regarded as an innovative method in language learning and instructional technology which offers more flexibility and portability of language materials. The present study sought to investigate the role of podcasting technology in different domains of language learning and teaching by reviewing the previous research projects and offering new directions for future studies. Podcasting allows language learners and curriculum developers to broaden the learning style alternatives in a more friendly way by getting immeasurable access to teaching/learning resources. However, implementing this type of technology is not without its difficulties which are needed to be addressed more extensively. Various possible ways of utilizing this technology and different attitudes towards this are mentioned in detail. In conclusion, some future potential trends and recommendations are offered for those researchers interested in podcasting research.

Key words: podcast, podcasting technology, RSS feed, vodcast, subscription, videocasting

INTRODUCTION

Podcasting is viewed as a groundbreaking medium of technology which includes different application series such as video, audio, digital radio, digital TV, pdf files, and presentations. These podcasting services can be downloaded by a computer device or a mobile phone. Moreover, Podcasting has a range of different dynamics and ongoing educational functions. Currently, many institutions use podcasting system as a method to facilitate the teaching-learning delivery. In fact, what podcasting system actually delivers is providing RSS (Really Simple Syndication) feeds which are automatically updated by their subscribers. (McCombs & Liu, 2007). What podcasting offers particularly is the ease of application in which users can get access to the downloaded materials at their convenience. In many institutions, e.g. The University of Huston, a group of experts participated to ascertain the quality of educational podcasting service and its content delivery. Similarly, according to the report by Duke University (2005), Students

welcomed the use of podcasts in the classrooms and the principals were looking for the ways to expand the program further. However, the podcasting system of educational delivery is not popular in many institutions because of a fallacy which restricts the use of this pioneering technology to possessing iPods and Mp3 devices. The use of podcasting technology has been significantly increased since its birth. There are many reason for this growth. Campbell (cited in Brown 2003) attributed this growth to factors such as; the popularity of the amount of internet activities, the improvement in the broadband technology, and the fast progression of devices like Mp3 players and iPods. Students can always involve in the process of learning as Lim (2005) referred to this attribute as learning 'on the go'. Deal (2007:p3) summarized the process of creating, updating, uploading and receiving podcasts as follows:

1. Podcast creator produces audio/video files.
2. Podcast creator generates the RSS feed files.
3. Podcast creator updates the RSS feed files.
4. Podcast creator uploads audio/video files and RSS feeds to a web server.
5. Podcast creator notifies audience of the location of RSS feeds.
6. Listener adds the location of the RSS feed to podcast aggregator software.
7. Podcast aggregator downloads the most recent episodes based on RSS feed.
8. Listener accesses podcast episodes.

In this article the researchers tried to specifically focus on three major domains of podcasting system: 1. the required materials 2. It's learning styles and habits and 3. Effective learning through podcasting. Therefore, in the first part of review section, the effect of podcasting on instructional technology has been extensively discussed by stating the most important and updated works in this domain. In the second part of research, the impact of podcasting has been particularly investigated on language learning. Different constructive issues are mentioned in this section. Furthermore, the third section is allotted to attitudes and opinions towards this technology. For the result section, some feasible directions and recommendations are offered.

Significance of the study

Podcasting changes the study habits as many students no longer try to participate in traditional classes, but they prefer to get in touch with the course contents virtually (McCombs and Liu, 2007; Facer, Abdous, and Camarena, 2009). By implementing podcasting to classroom curriculum, a major sense of flexibility is enhanced as students will not miss any topic in case they dropped any session. Podcasting should be integrated with normal classroom activities as it is a great approach to promote collaborative learning styles. In fact podcasting makes education more portable. However, it does not

mean that it can replace real classes, but it can act as a medium to compensate the classroom attendance. Students can use this technology as a supplement of the real classes in which they can refer to the materials at any time they want. It clearly does not encourage absenteeism (Muppala & Kong, 2007). Therefore, the supplementary function of podcasting should be more encouraged than the substitutional. However, it is also preferable to think of a creative function of podcasting in which students are involved too. This technology can also be used as a tool to recruit new students (James Tower Report, 2006). McGarr (2009) stated that podcasting can be a fruitful way of incorporating learning materials into technological bases because of three major factors. It enhances learning; it increases flexibility, and it increases accessibility. In spite of all the previous efforts in the field of podcasting research, most of these works have focused on the overall students' attitudes and feelings, and the amount of students' participation. Identifying the potential aspects of "teaching-based podcasting" can help language educators to understand its real core competency (Harris and Park, 2007). Thus it is necessary to review the previous studies in order to understand the current position of this method today.

Limitations with the use of podcasting technology

The application of podcasting is not without its difficulties and downturns. As far as implementing podcasting requires downloading the materials from the internet, it requires sufficient internet connection speed. Whereas, mp3 format is the most prevalent file format, it cannot yield appropriate result for hearing impaired students. Likewise, many internet users try to do podcasting in an amateur way. As a result, the quality of speakers may not fulfill the requirements of the task. In an educational setting, professors who wish to deliver their works on podcasting should be trained about the technology requirements (EDUCAUSE Bulletin, 2005). The fact that students might not be familiar with using this technology is another problem in this area. Similarly, institutions, schools and universities should provide technical support for their users.

PAST ISSUES

Different kinds of podcasting materials

In many studies (e.g. McCombs & Liu, 2007; Friess, 2005; McGarr, 2009) different podcasting formats have been investigated. These types include the discrete podcast (audio-only), enhanced podcast (audio plus pictures), and video podcasts (vodcast). In a study by McCombs and Liu (2007), students viewed podcasting materials on their iPod and Mp3 players by 33 percent and on their computer devices by 67 percent. However, most of the students used it for less than 5 hours per week. Most of these students (around 34%) used podcasting in the duration of 40 minute commute between home and school. Vodcast were the most popular in the above-mentioned study but this format of podcasting is time consuming as it needs a lot of time for encoding, editing, and uploading materials. One of the challenges for the students in McCombs and Liu's study (2007) was

to find the best resources. Language educators are responsible to provide the best possible resources for the students to guarantee the quality of education. In a different report, Friess (2005) compared podcasting with video casting or vodcasting by discussing major complications related to videocasting like video recording capacities and whether adding video to the program will change the educational quality.

McGarr (2009) found that podcasting technology can be implemented in academic situations in three different ways: substitutional, supplementary and creative uses. Substitutional use of podcasting offers learners to review the recorded lectures in order to get a better insight of what has actually been stated in the classroom. On the other hand, supplementary use of podcasting offers providing complimentary materials to broaden students' understanding. However, the creative use is related to those podcasting services generated by students.

Berry (2006) attributed podcasting with "its portability, its intimacy and its accessibility." As the podcasting service clearly suggests the portability of this kind of technology, many people might think that the only viable devices are mp3 players or iPods. According to a report (Podcasting to hit critical mass in 2010, 2005), many people used their computers instead of their portable devices. It clearly emphasizes the point that podcasting is not restricted to special devices and rejects the fallacy of being highly equipped in this technology.

The effect of Podcasting on Instructional Technology

Podcasting can offer excellent support for educational and academic purposes. According to Hargis and Wilson (2005): "podcasting can promise a unique approach to improving foundational pedagogical approaches to information processing and conceptual learning" (page 6). Blaisdell (2006) discussed different conditions of podcasting in educational environment. Like many other articles, the study emphasized the significance of training students before introducing this technology to the instructional system. There are many challenges in this way e.g. language teachers and practitioners should make sure that all students are involved in the program and they have access to internet facilities. The students should be clear about how to use this technology too. Therefore, it is necessary to familiarize students and professors with this technology before implementing it.

The use of podcasting has also been investigated in K-12 setting (Swan and Hofer 2009). It is particularly important to evaluate the quality of each podcasting service in order to ascertain whether it matches the classroom setting and its activities. In another study, Brown (2006) predominantly focused on different applications of podcasting technology in higher education. He interestingly mentioned several reasons for using podcasting and offered fruitful solutions to the problems in this area. Because of the great advantages of podcasting in higher education like its portability and flexibility, many universities like university of California at Berkely incorporated the podcasting procedure to their medium of instruction. As mentioned in Brown (2006), in order to develop podcasting as

a medium of technology enhanced education in both universities and schools, several issues like controlling the quality, providing technical support for the users and delivering necessary training to the users must be taken into account.

Obviously creating and accessing podcasts is not an easy job for language developers and curriculum designers. Copestake (2006) provided useful information for creating and broadcasting podcasts. It includes valuable information for those who are fresh to this technology.

Podcasting expertise is not just about receiving classroom lectures via downloading. In a perfect example, Texas A & M International University (2007) incorporated podcasting to deliver news and information for students and alumni, and to provide information on the required softwares to use podcasting.

The issue of spending time over podcasting technology is of great importance. As Friess (2006a and 2006b) discussed different influencing factors on the success of podcasting technology in higher education, it is mentioned that time and effort should be allotted to maintain the quality of podcasting service. Likewise, the future of this innovative method is predicted to be bright and optimistic that many future talents can be discovered through podcasting in higher education.

Further useful information can be found in Read (2007), in which he offers some guidelines and solutions on how to implement podcasting in educational milieus. First and foremost, the technology should be easy to use. As long as every innovative method can sound threatening for the learners, the starting point of any podcasting service should not be complicated. It is however, necessary to investigate students' opinions about the system by continuously monitoring the shared materials.

Podcasting technology can be pedagogically advantageous for non-native students who may not be able to follow the pace of in-class lectures i.e. they have a great chance of getting the podcasting materials in order to obviate the potential problems related to the inability in comprehending the instructional materials inside the class (Muppala and Kong, 2007). In this regard, it is also argued that podcasting can reduce the level of anxiety (Chan and Lee 2005). William and Fardon (2007) carried out a research on Australian university students in order to investigate how students respond to the podcasting materials. Through a survey, it was revealed that 71% of students used it to review the classroom materials. However, 47% of participants stated that they used the podcasting service because of interference between their classes and 43% mentioned the family problems as the main reason for using this technology.

The effect of Podcasting on language learning

Numerous researchers (e.g., Abdous, Camarena, & Facer, 2009; Abdous, Facer, & Yen 2012; Allan, 2007; Chan, Chen, & Dopel, 2011; Chester, Buntine, Hammond, & Atkinson, 2011; Chan, Chi, Chin, & Lin, 2011; Chi & Chan, 2011; O'Bryan & Hegelheimer, 2007;

Lazzari, 2009) have studied the effects of podcasting on different aspects of language learning.

Abdous et al. (2009) examined the use of podcasting in second language classes as a supplementary tool to aid education. Students responded positively to incorporation of this technology to the curriculum and the results showed that by adding this service to instruction, students would have a chance to get the benefit of reviewing the classroom materials more. According to this study, podcasting has superior potentials if it is not considered merely as a reviewing device. Most of the students were positive that podcasting makes the course materials easier and more comprehensible. Moreover, the same participants mentioned that podcasting is a useful tool to get feedback from the teacher in order to complete the classroom assignments. The integrated versus supplemental use of podcasting has also been investigated by Abdous et al. (2012). The results comparing the two usage of podcasting were inadequate.

The practice of podcasting technology has also been used to develop vocabulary learning and improving memorization. In a study by Allan (2007), students extensively used the provided materials on their personal computers. The results of this study demonstrates that without proper guidance and encouragements of teachers, students remain to be lethargic towards using podcasting. The frequency of broadcasting materials is of prime importance as well.

Facer et al. (2009) found that incorporating podcasting technology into classroom milieu will result in improvement in all language skills as well as comprehension of vocabulary and grammar rules.

Podcasting can also help organizing the language materials in different educational contexts. Interestingly in O'Bryan, and Hegelheimer (2007) it is revealed that incorporating podcasting to the classroom instruction can have positive pedagogical results in a way that students can have access to the previous materials and their summaries as well as the outline of next class presentations.

The effect of podcasting as a medium of self-study practice, as a medium for test construction and as an integrated part of classroom activities has also been measured through experimental studies. In spite of positive responses from students, more research is needed to determine the educational value of this technology. (Hegelheimer, and O'Bryan, 2009). Likewise, a study by Lin, and Chen (2012) revealed that by sending podcasting materials to students' devices including their smartphones, listening abilities, the level of vocabulary and grammar knowledge have improved considerably. The result of this study was confirmed by post-test results after starting the experiment. However in a different experiment, Palalas (2009) revealed that implementing podcasting skill will result in rote memorization of vocabulary. In this work, despite positive feedbacks from students, little amount of peer connection was observed between participants. Palalas (2011) also found significant progress in listening ability of language learners using iPod Touch programs. In spite of this advantage, internet connection and the cost of devices

were regarded as the inhibiting factors. However, podcasting technology needs time to reveal its educational identity. Ducate and Lomicka (2009a) revealed that despite students' positive feelings towards podcasting but the "16-week long treatment" was probably not enough to improve the pronunciation level of students.

In another research, Perez, Vigil, Níkleva, Jimenez Jimenez, Lopez-Mezquita Molina, Del Pino Morales, and Sanchidrian Rodriguez (2011) conducted a study to investigate the adequacy of podcasting technique on listening comprehension proficiency and its greater impact when it is associated with Blogging. The results revealed that most of the participants were involved in cooperative online interaction. They also demonstrated satisfaction concerning the program. Dale (2007) underscored several strategies for podcasting to support language learning:

1. Engage the listeners by providing examples, photos and video materials. These features will enable learners to reflect on the podcasting materials.
2. Introduce it gradually to the learners. It might take some time to understand all potential areas of podcasting.
3. Use chapters to help learners understand different parts of the website.
4. Provide high quality audio and video materials.
5. Be cautious about the copyright
6. Provide technical supports to students who might have some problems using the podcast.

Likewise, Griffin, Mitchell, and Thompson (2009) showed that Synchronous use of podcasting with photo slide presentation and video files can yield far better results comparing to asynchronous use. Podcasting should not foster inactivity and it should not lead students to be passive. (Garrison and Akyol, 2009; Scutter, Stupans, Sawyer, and King, 2010). It is necessary to monitor students in order to see the podcasting effect on the amount of interaction. Educational-based podcasting undoubtedly maximize the amount of student-teacher interaction (Harris and Park 2008). In an interesting comparative study, McKinney, Dyck, and Luber (2009) found that students received podcasting service scored much higher comparing to those in a traditional class. It should not however, substituted for the real classes. Students can benefit from the real lectures and they can refer to the lectures at any time they like. Also, Fernandez, Simo, and Sallan (2009) stated that podcasting should be considered as a complimentary tool not a substitutional one. Additionally, it should maximize the amount of interaction between the teacher and the students, as well as among the students.

Learners' attitudes and perceptions towards podcasting

Learners' attitudes and opinions towards podcasting were mainly positive in which students believed that this equipment can be constructive and supportive if it mingles judiciously into language learning environment. (Martin and Beckmann, 2011; O'Bryan, and Hegelheimer, 2007). Analyzing students' knowledge about podcasting and their attitudes and opinions are of paramount significance. In many cases (e.g. McCombs and

Liu, 2007), it assures the quality of course content which is presented in the curriculum design. Furthermore, a successful use of podcast has revealed itself as a result of receiving constructive feedback from students. Most of the students responded positively towards integrating podcasting materials into course contents. As long as students use their portable electronic devices for listening to music and playing games every day, the same kind of strategy i.e. using podcasting method can be applied in order to motivate them to study and engage in a communicative and interactive teaching learning experience.

Chester et al. (2011) found that podcast users were reported to have a higher level of academic self-efficacy compared to non-users. By conducting a survey, they measured students' attitudes towards using podcasting service and they found some interesting reasons which students have provided on open-ended questionnaire. Those who used podcasting stated that it can help them revise for their exams, and revisit the complex materials. Additionally, it is really beneficial to compensate the classroom absence as they can recapture the materials at any time. However, non-users have also provided some reasons for not using the technology. For the main reason, they preferred face-to-face lectures to a virtual classroom. Furthermore, some of the participants casted doubt on how to use the files. Even some said that nobody has told them about the exiting files. It clearly highlights the significance of educating and training students on how to implement the podcasting technology. Moreover, the case study by Monk, Ozawa, and Thomas (2006) on Japanese students regarding the use of iPods in English language education confirms the fact that without training, students were remained oblivious to the educational purpose of podcasting.

In one study, it was made clear that the availability of podcasting technology is not enough to ascertain its educational benefits. Carefully selected materials should be included within a comprehensive plan in order to expect the desired purposes (Murphy-Judy, 2011). The amount of participation was also outstanding. As a result, 70% of Students were reported to use podcasting during and after the semester. In a similar study by Chan et al. (2011a), podcasting proved to be really useful for students learning German language. Students found this innovation convenient for language learning in general and test preparation in particular. Also, Mp3 devices were not considered to be the sole device for using the technology for example in Chan et al. (2011a), 70% of students received the materials from their personal computers rather than Mp3 devices. Equally in another study by Ducate and Lomicka (2009b), students were positive and satisfied with podcast-embedded education. In this query, almost all of the students received the podcasting materials on their Pcs. Therefore, it is a fallacy that using podcast has been restricted to particular devices like MP3s and iPods.

In a further study, Chan et al. (2011b), investigated students' attitudes towards podcasting. Two groups of Korean and Chinese L2 learners were selected. Different statistically significant results were found from two groups which can be attributed to different factors. The differences between the two groups were mainly because of: "1. Differences in the podcast objectives and learning motivation; 2. Relevance of podcast

design and topics; 3. Teacher encouragement; and 4. the experience of mobile learning.” (p. 327). In addition, it is necessary to match students’ needs and expectations with length and frequency of podcasting materials.

The use of podcasting technology also enhances students’ engagement in both language and culture-based tasks by stimulating collaborative activities in which students have a limitless access to their required information (Summerfield, 2011).

Troubleshooting is another facet for this technological innovation. Students can concentrate on the problematic areas by repeating the episodes. For instance, Muppala and Kong (2007) analyzed students’ responses to the integration of podcasting to language learning program. The amount of participation were satisfactory as 70% of students used the downloading materials. Most students particularly focused on those parts of the lecture in which they had problems with. This clearly shows that the technology can be considered as a great troubleshooting stratagem. As far as in this study students had the problem of matching the lecture sections with the related slides, some of them prefer to use the synchronous audio and slide show which undoubtedly, can be implemented only on computers. Podcasting can help students to read the materials again especially before the exams. As a result they become confident that if they ever encounter a problem, they can refer to their downloaded podcasts again. Therefore, the judicious use of podcasting expertise can offer valuable support for students with learning problems.

Some researchers (e.g., Baird and Fisher, 2006; Hargis and Wilson, 2005) claimed that this technology can help students to reflect on the language learning process. This can significantly result in monitoring the progress of the language learning process.

The online milieu has always been regarded as a major challenge for language teachers and educators as it creates a gap between learners involved in the learning experiment, the teacher and the rest of the class. Bolliger, Supanakan, and Boggs (2010) used three types of podcasting i.e. audio-only, with a still image, and video podcasting. They argue that podcasting is a great technique to minimize the distance between learners, teachers and the peers. As a result, students became motivated to pursue the language class.

In a different study, Lawlor and Donnelly (2010) emphasized the supplementary use of podcasting by mentioning some drawbacks about podcasting. The study even demonstrated that students were less likely to participate and interact in classes which were recorded for the purpose of podcast. It is concluded that the selection of podcasting materials should be carefully made. Podcasting have also proved to be interesting since some learners prefer to revise the learning materials via listening rather than mere reading materials. (Putman and Kingsley, 2009). Lonn and Teasley (2009) also confirmed that most learners use podcasting to review the previously mentioned ideas in the classroom lectures. The fact that students download the materials during the semester to revise the materials shows that this technology does not encourage them to miss the classes. However, there is doubt whether podcasting can improve the teaching style.

RESULTS AND FUTURE DIRECTIONS FOR FUTURE RESEARCH

As the speed of the internet has been a major challenge in downloading different podcasting materials (McCombs & Liu, 2007), it is strongly necessary to provide high speed internet connection for the students. Therefore, the students will not be hindered to receive interesting files with bigger extensions due to limitations on internet speed.

Based on the limitations in the previous studies, Language learners should be provided with:

1. Useful educational RSS feeds.
2. Clear and necessary instruction to use the feeds through a comprehensive course syllabus.
3. Motivation and encouragement to use the podcasting technology by raising their awareness on its educational benefits.
4. Outlining the podcasting materials by including summarized materials, and the outline of future class presentations.
5. Supplementary materials like graphs and figures for audio-only podcasts in order to understand the content of the lectures better.

Furthermore, as students have different learning styles and strategies, different formats of podcasting should also be provided e.g. video podcast, audio-only podcast, or enhanced one. These variations enable can enable students to accommodate their needs with different learning strategies.

As Lee and Chan (2007) previously mentioned podcasting facilities can significantly improve students' understanding of the subject matter, this type of technology-based education can be considered as a tool to clarify that particular subject matter. Students can always receive support about what they have learnt. Additionally, they can receive proper guidance on how to tackle the future problems.

Professors who wish to deliver their lectures through podcasting technology should also consider the quality of speech and the supplementary files as well. This needs careful selection of materials inside the class. Additionally, podcasting must motivate students to be more independent. The purpose of podcasting is for students to share learning experience with each other (Mansfield University Report, 2007). That means, student should continue their experience with their peers. More research is needed to measure the correlation between using podcasting technology and the degree of students' independence. As stated earlier, in order to motivate students, it is necessary to include a variety of different materials (O'Bryan, and Hegelheimer, 2007) Students will be more encouraged if they know the content of classroom materials and the content of future sessions beforehand. In this way; firstly, they can prepare themselves for future classes; and secondly, they would have a desire to follow the podcasting sessions. As previously mentioned in Putman and Kingsley, 2009), students will be more encouraged to use interesting podcasts, it is necessary to carefully devise websites for podcasting service,

free of background noise. Therefore, teachers should focus on those aspects which might attract students' attention.

Most students have mixed feelings about the use of podcasting and they generally believe that the only prevalent application of podcasting is to download and to listen to the music. As many researchers (e.g. Blaisdell, 2006; Brown, 2006; Monk et al. 2006) previously highlighted the significance of training students about the educational purposes of podcasting, it is obvious that implementing this kind of technology requires a clear and structured teaching style and teachers should start introducing it to students whenever they are ready. (Walls, Kucsera, Walker, Acee, McVaugh, and Robinson, 2010)

As length and the frequency of podcasting has long been debated by some researchers (e.g. Chan, Chi, Chin, and Lin, 2011), it is important to conduct comparative studies in which different podcasting lengths should be correlated with students' performance. Likewise, frequency of podcasting materials is another issue which needs to be investigated more thoroughly.

Future research should particularly focus on students' use of podcasting technology by finding their preferred ways of incorporating this into learning syllabi. It is necessary to monitor students by receiving feedback from them on how they use this technology. Obviously, the effective use of podcasting along with students' satisfaction should not hinder us to investigate its outcome on language learning proficiency. Teachers should meticulously control the impact of podcasting on language learning in general and students results in particular. More research is needed to analyze the effect of podcasting on students' scores.

It is necessary for the students not to miss the real traditional classes. Instead, they can benefit from both real lectures and the recorded podcasting materials for problem-solving purposes. More research is required to compare the result of students using the podcasting materials with those merely working on traditional lectures. It is also necessary to investigate whether podcasting has a similar effect on improving all different class.

The creation, updating, uploading, and maintaining the RSS feeds for podcasting production is not without cost (Morales & Moses, 2006). Universities and Higher education institutions can use this technology as a venue for their advertisements and introducing themselves, their curricula, and their prospectuses along with podcasting materials.

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