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The Role of a Mobile App for Listening Comprehension Training in Distance Learning to Sustain Student Motivation

Timothy Read
(UNED, Madrid, Spain
tread@lsi.uned.es)

Agnes Kukulska-Hulme
(The Open University, Milton Keynes, United Kingdom
agnes.kukulska-hulme@open.ac.uk)

Abstract: In this article the importance of listening comprehension for language students is discussed and the possible benefits of using a mobile app to motivate its practice and development are considered. The Audio News Trainer (ANT) is presented as an example of this type of app that uses the news domain as the source of audio recordings. Three research questions related to the use of this app are outlined regarding the effectiveness of the news domain for motivating the practise of listening comprehension, whether social media (such as Facebook) can increase the motivation, and how the students' exposure to the target language can be prolonged here. An experiment is undertaken that provides data (obtained by interaction with the app and from pre- and post-questionnaires) which appear, based upon initial analyses, to support both the use of ANT to motivate the prolonged practise of listening comprehension and also the potential of social media-based interaction in second language learning nowadays.

Keywords: Audio News Trainer, ANT, Listening Comprehension, Student motivation
Categories: Technology Enhanced Learning

1 Introduction

Listening plays an important role in communication, occupying approximately 40-50% of the total time spent communicating (cf. speaking 25-30%, reading 11-16%, and writing 9% [Gilman & Moody, 84][1]. It is key for our daily survival and, as [Ghaderpanahi, 12] notes, arguably the first language skill we learn, since children are able to listen and respond to language well before they can talk. [Vandergrift, 11] argues that it is possibly the most important skill for second language learning since it facilitates the internalisation of the rules of language and the emergence of other language skills.

The teaching of listening comprehension in a foreign language typically revolves around helping students to establish a series of strategies that can be applied to the listening task before, during and after it takes place [Rost, 02; Vandergrift, 04; Flowerdew & Miller, 05; Vandergrift, 07; Gilakjani & Ahmadi, 11; Yamada *et al*.,

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11]. [Gilakjani & Ahmadi, 11], for example, argues that activities undertaken prior to listening help activate prior knowledge and provide supporting context; those undertaken while listening help students focus on key information in the formation and validation of predictions; and finally, subsequent activities help by extending the listening and encouraging interpretation and reflection. Research shows that students who are effective listeners successfully apply these strategies while less effective ones still try to translate what they are hearing and make less use of them [Vandergrift, 11]. Teachers in face-to-face (henceforth, F2F) language classes have a clear role in helping their students develop these strategies (if they know how to [Lotfi, 12]) and providing them with large numbers of suitable, authentic listening activities and opportunities to check their comprehension. Support should be provided as scaffolding (which is decreased as progress is made [Guikema, 09]).

It is evident that developing listening comprehension requires extensive practice. Students on distance-learning programs have difficulties achieving such practise. Geographical separation of teachers and students (and also between students) combined with the unbalanced ratio of students to teachers on these courses (for example, 15,000 to 7 on some courses at UNED - The Spanish National Distance Education University; *Universidad Nacional de Educación a Distancia*) have significantly restricted the opportunities available for interaction and the possibilities of students to work on their oral and aural competences. Given the widespread access that students have these days to the Internet and the large number of educational resources available online that could be used to develop listening comprehension, there are interesting possibilities available for distance-learning students. However, given the need for prolonged student practice, different approaches to applying these online resources that have been reported in the literature have achieved arguably limited success since the students often work well in the short term but lose interest in continued practice [e.g., Berk & Cebeci, 05; Cebeci & Tekdal, 06; Robinson & Kazlauskas, 10; Kazlauskas & Robinson, 12]. The authors of this article argue that prolonged listening comprehension practise could be achieved for distance learning students if the right technological and methodological approach is followed.

2 Mobile Assisted Listening Comprehension

Mobile devices such as smartphones and tablets have been argued in the literature to be effective for language learning [e.g., Sharples, 00; Kukulska-Hulme, 06; Nash, 07; Kukulska-Hulme, 09; Kim, 11]. [Lan & Sie, 10] summarise research on the benefits of mobile devices for learning to highlight the possibilities to improve communication, increase learning opportunities, encourage active learning, enhance learner feedback, emphasize task time, and provide easy access to content. Furthermore, [Burston, 11] argues that students consistently view the use of mobile technology in a positive way due to its 'anytime, anywhere' possibilities. Mobile Assisted Language Learning (henceforth, MALL) has been shown to motivate students, thereby increasing the time they are actually exposed to the second language away from the classroom [O'Malley *et al.,* 03; Roschelle, 03; Furuya, Kimura & Ohta, 04; Kukulska-Hulme, 05; Thornton & Houser, 05; Kang & Kim, 07; Kukulska-Hulme, 09; Huang & Sun, 10], enabling them to carry on learning [Jones *et al.,* 06;

Naismith *et al.,* 05; Facer *et al.*, 04], and to some extent integrate the learning process into their everyday life [Price & Rogers, 04].

There are many reasons for such a motivational effect including mobile device portability and the immediacy they offer to students [Norbrook & Scott, 03]. Specifically, studies show that the use of mobile devices can support the practice of listening and speaking skills [Demouy & Kukulska-Hulme, 10] and many produce significant improvements [Edirisingha *et al.,* 07; Kim, 13]. For example, [Azar & Nasiri,14] present data that support the effectiveness of MALL in second language listening comprehension, using audiobooks on mobile devices.

The most prevalent and widely explored technology for mobile listening comprehension reported in the literature is that of podcasts, ever since they started to be used in Japan in 2005 [Lomicka & Lord, 11]. In general studies reflect the way in which podcasts are used to support learning in higher education [Chinnery, 06; Dudeney & Hockly, 07; Maikat *et al.,* 07; Rosell-Aguilar, 07; Lee *et al.,* 08; McGarr, 09], and how popular they are with language students [Chan, *et al*., 07; Li, 10; Menezes & Morera, 09]. However, podcasting for second language acquisition is not without its critics in the literature. For example, [Hasan & Hoon, 13] note problems related to their use, such as the amount of time required to set up and prepare podcasts, that supplementary (non graded) activities are often ignored by the students, and that for effective improvements in listening comprehension, pedagogic theory is important, something not explicitly present in the use of most podcasts. Other research shows that students used podcasts as part of their study periods and did not multitask with other tasks, going against their mobile nature [Lee & Chan, 07; Evans, 08; Copley, 07].

While it is clear that MALL may in some circumstances motivate students to learn, and certain techniques like podcasts are a useful tool, results of research until now are arguably limited since if the students are left alone to practise, they are unlikely to continue over a sustained period of time. This is particularly true for students working at a distance who are prone to abandon learning activities if they do not feel them completely relevant to their overall goals.

3 The Audio News Trainer

Building upon these results, it can be argued that not just any MALL app can be used to facilitate the training of listening comprehension for students in distance education. The authors' second language teaching experience suggests two specific factors that need to be included in a MALL app to potentiate and sustain learning over time, namely the domain from which the content being listened to is selected and the possibilities for social interactions and activities.

Firstly, the selection of a subject domain that the students find interesting and engaging is important: audio news may make an effective domain for listening comprehension since it presents a wide range of information relevant to most people's interests and everyday life. [Ghaderpanahi, 12] provides data that supports the need for spoken materials relevant to students' experiences and interests. Secondly, given that learning can be particularly effective when it includes social activity [Breen, 85; Ellis, 03], then the presence of open social interaction related with the news recordings could potentially increase student motivation. To explore the effectiveness

of a mobile app that includes these two factors to facilitate prolonged listening comprehension the following research questions have been formulated:

1. Is news an effective domain for practising listening comprehension in the target language learning in terms of motivation?
2. Does use of social media amplify the effect?
3. Can a mobile app designed for listening comprehension training be intrinsically motivating for prolonged exposure to the Target Language?

To help answer these question the Audio News Trainer (or ANT) mobile app has been developed in a collaboration undertaken between researchers in the ATLAS research group at UNED and the Institute of Educational Technology at The Open University. ANT is a MALL app for training aural English comprehension that uses different sources of audio news recordings. Three different news sources are used corresponding to simple, medium, and harder to understand recordings, based upon factors including speech speed and accents. These sources are not directly included in the app but are harvested as RSS from online sources, configured by the students (following instructions given by the research team) in the app as part of the setup process, in the same way a user would set up any online audio listening or podcasting software. The structure of the app can be seen in figure 1 below. The difference in the difficulty of the audio news is shown using a traffic-light representation of green, yellow and red, as can be seen in Figure 1.

Listening strategies are provided to help the students undertake the listening activities in a scaffolded way. Some simple general questions about the conditions in which students have carried out the listening and what they have understood are also included to facilitate reflection following each audio. All student interactions with ANT are logged. There are currently two versions of this app: an individual learning one, which only contains the closed questions in the app on the listening process and what a student has understood, and a social learning one, which enables subsequent activities to be undertaken on the Facebook app page. This scaffolding structure reflects the importance given in the literature to including activities following listening to reinforce learning in a pro-active manner. [McBride, 09] notes that in these activities, students can be expected to provide an outline of a given audio and answer general questions but not provide answers to questions about very specific details, the understanding of which is argued to have more to do with memory than with listening comprehension [Shohamy & Inbar, 91].

In the social learning version, as well as having the questions present in the individual app, there is a text box where students have to write a brief summary of what they have understood (or not), which upon completion is posted automatically to the Facebook app page. For users of this version of the app, subsequent social learning activities are undertaken around the posts in Facebook, to explore how such activities reinforce and extend learning. The social learning guide that the students were given at the start of the experiment encourages them to click on “Like” if they agree with another student’s summary and add a comment if they wish to add anything to the summary (for example, to share a different perspective on the news item). They are also encouraged to search for supporting material on other social media or Web sites that they can link in to a given summary on the Facebook page.

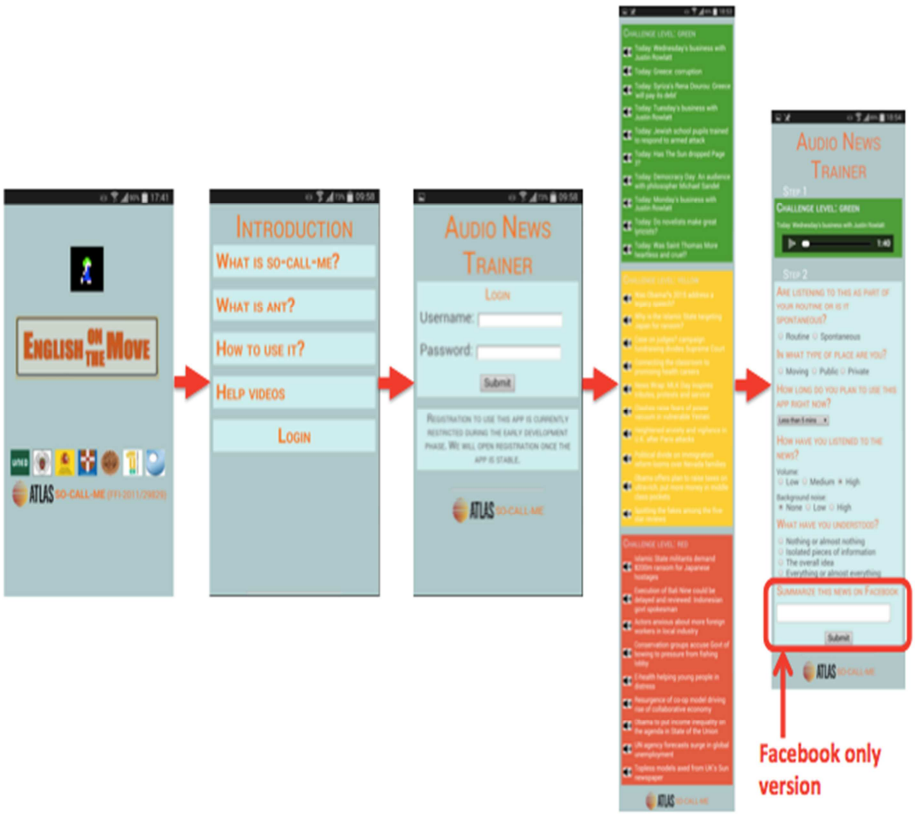

Figure 1: Audio News Trainer App Structure

4 Experimental design

In this 'experiment', or innovative intervention, started in November 2014 and concluded in January of 2015, the students participating were studying English as part of the mandatory university entry courses that all students have to complete before being allowed to study at UNED. As such, the profile of the students was very heterogeneous with self-reported English language competences that ranged from A1 to C1 (using the nomenclature of the *Common European Framework of Reference of languages* [Council of Europe, 01]). Initially a call for participation in the project was placed in one of the general course forums and interested students were given a period of a week to fill out an online registration form. Participation was voluntary and use of the app was not a formal part of the course.

In total 90 students signed up and were randomly divided into two groups, one for each version of ANT (termed the individual and social learning groups). The students were then sent a welcome email message that explained how to use the app, together with a link to the app, so that it could be downloaded directly to their mobile device, a

set of three RSS links for the green, yellow and red levels, links to a user manual for the app, two videos on YouTube explaining how it works and providing listening strategies, and each student's login and password. The group that would use the Facebook enabled version of the app were also sent indications of the social learning activities that would be undertaken following posts to the social network by the app.

Over a period of ten weeks (from 10/11/14 until 18/1/15) the students were allowed to use the apps and the project team answered questions from the students on a range of topics from installation/configuration problems through to methodology questions. Research data were obtained during this experiment through questionnaires and app activity logging. Two questionnaires (both containing 28 questions) were given to the students. Firstly, as part of the sign-up process the students were given a pre-questionnaire about language level, learning styles, news habits, preferences, expectations, and so on. Secondly, as part of the finishing process, leading to presentation of participation certificates to the students, a post-questionnaire was given. It had been formulated to enable some data comparison with the one given previously. Data was logged directly from the app on the project server to capture the way the students used it, including what news items were listened to, the answers given to the questions present in the app, and whether a summary had been sent to the Facebook page. The Facebook page itself provided a log of student interactions, both posts directly from the app and follow up activities directly on the social network, adding 'likes' and related comments and contents.

5 Analysis of the results

We report here the results from the ANT Individual Learning Group and the ANT Social Learning Group. Of the 45 students registered in the ANT Individual Learning Group, 9 actually used the app to listen to a total of 121 news recordings over the experimental period. Only 3 of them continued to use the app constantly during the eleven weeks. However, when asked at the end of the experiment if they would like to continue to have access to the app now that the experiment was over, all but 2 reported that they would. The students who declined the offer reported that they were unable to continue, one for "personal reasons" and the other due to lack of free time. Initially, almost all of the students had reported that they expected to dedicate 30 minutes or more a day to using the app. Subsequently, they reported that they had only used it for up to 10 minutes (consistent with the app logging data). The reasons given for this difference were varied, essentially reflecting difficulties in finding time for professional or personal reasons. Regarding the suitability of news for listening comprehension, all the students reported that they had enjoyed the domain and that they would continue to listen to the news in the target language as part of their language learning, even if the app was not available.

A key question here is why only 9 of the 45 students in this group actually used the app. Since the 36 students who did not even try the app also did not answer the post-questionnaire, there is no data to directly address this question. However, this result confirms and reproduces previous experience of working with distance learning students, where participation levels in supplementary learning activities are typically very low, although initially expectations are usually high. Signing up for an experiment only requires a student to fill out an online questionnaire whereas actually

taking part requires the student to download and install the app, configure it for the news sources and then read preparatory documentation on how to use it and how to undertake the learning process.

Of the 45 students registered in the ANT Social Learning Group, 33 actually used the app to listen to a total of 654 news recordings. Subsequently, 429 summary posts were made from the app to the Facebook page, and a further 236 'likes' on news summaries and 116 comments were made on the news summaries on the Facebook page. As well as the actual number of active students in this group, in comparison with the individual learning group, almost all of the students used the app consistently during the experimental period and some of them were actually very pro-active in contacting the research team to request continued access to the app when the end of the experimental period approached. In a similar way to the individual learning group, the students in this group had also reported that they expected to dedicate 30 minutes or more a day to using the app (and Facebook subsequently), and in comparison with the other group, they actually had, in general, achieved this goal. They also reported that they would continue to listen to the news in the target language as part of their language learning, even if the app was not available.

In the ANT Social Learning Group, two additional observations can be reported here. Firstly, that the social learning required a "critical interaction mass" to be present on the Facebook page before the students actually felt comfortable with participating (i.e., it took a few days for the interaction on the social network to develop). Once they had started they were not concerned about anonymity and connected to the Facebook app page using their standard accounts. Secondly, as can be detected in other types of online social learning, some empowered students started to act as self-appointed monitors on the Facebook page, congratulating and commenting upon peer summaries, as if they were part of a teaching team.

6 Discussion and conclusion

In this article the importance of listening comprehension for language students has been discussed and the possible benefits of using a mobile app for this purpose have been noted. The ANT app was presented as an example of this type of app that used the news domain as the source of the audio recordings. Three research questions related to the use of this app were outlined that have driven the experiment undertaken subsequently. Using the results obtained, these questions can be considered here.

The first question regarded the effectiveness of audio news as a domain for practising listening comprehension in the target language in terms of student motivation. Or expressed in another form, we were interested to know whether audio news is motivating for students wishing to improve their oral comprehension. Answering this question based upon the results presented here must be undertaken with a certain degree of caution due to the small sample size and low participation in the individual learning group. However, given the enthusiastic responses in the questionnaires about the use of news and the students' intention to carry on using it as a listening medium, even if the app were not available, then the news would appear to be an effective domain for practising listening comprehension. To be completely sure a larger study would be required that contrasts listening to other sources of audio (for

example, audiobooks). Furthermore, just as our interest level varies during real news broadcasts on the radio or television, since certain topics affect us more or less than others, then in a future version of the app it might be possible to add a function whereby students can label the content of given recordings so that subsequently students can receive it categorised and only listen to categories that particularly appeal to them. Finally, it should be noted that students also positively value the way in which they can use background knowledge on the content of a given recording as a useful scaffolding element when trying to understand the recordings.

The second research question was whether motivation for use of the app can be increased by using social media to facilitate interaction between students in terms of activities related to the news stories. Both the data from the questionnaires, which show the popularity of this type of interaction, and the data showing how many students used the app and how many news stories were listed to and "liked" and commented on the Facebook page, clearly show the facilitation effect of the social media. However, careful study of the results also highlight some characteristics of this interaction that need to be studied in future research to enable such social learning to be fully exploited. Firstly, the interaction was essentially shallow in nature, being limited to clicking "like" and adding very short comments showing agreement (or not) and not actually including any profound reflections on the stories being covered (reflecting how Facebook is typically used). Secondly, even with the most powerful news stories (since unfortunately, in any given moment, the news is full of stories of suffering and tragedy), the students showed no emotional reaction. The comments were "cold" and related more to conceptual understanding than empathic identification with the people or situations present. This might have more to do with the way the learning activities were structured and the indications given, or even the students' fear of committing mistakes (in a social medium), but as any language teacher knows, when the students begin to "relax" and participate in activities in an engaged way, learning can be superior. This is related to possible learning outcomes from a listening comprehension activity and what it means to show evidence of comprehension (beyond a formal summary), and it is something that needs to be studied in future research.

Thirdly and finally, if it has been argued in the literature that mobile devices motivate students to learn, then is there any evidence here that using the ANT app has been intrinsically motivating for prolonged exposure to the target language? The data from the questionnaires show that the students typically did not use their smartphones or tablets to listen to news before the experiment and that as a result of this experience they would do so from now onwards, even if this particular app was not available. However, they did not typically seem aware that these devices, above and beyond the apps they could install, could provide them with a way to be listening to target language radio broadcasts as they were on the move in their everyday lives, thereby immersing themselves in a continuous practice context.

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