

Podcasts for Expansive Learning: A Case of Reflective Student Stories

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ABSTRACT

Most educational opportunities offered by mobile devices which are used by students for entertainment, such as iPods and mp3 players, have not been fully exploited. Although social uses of mobile devices among students is increasingly common, there has been little evidence to demonstrate how socially pervasive devices contribute to student learning. One of the phenomenons changing the higher education landscape is podcasting. However, despite the growing adoption of podcasting in education, not much is known about effective integration of podcasts at pedagogical level to have meaningful impact on student learning. This paper reports on a two-year project that explored the use of podcasts to mediate reflection. The paper draws on expansive learning as espoused by Engestrom to illustrate how podcast mediated tasks escalated learning among students at a higher education institution. The paper analyzed students' reflective stories using deconstruction analysis. The paper concludes that effective educational uses of podcasts require that learning activities are designed for reflection and podcasts used to scaffold the reflection process.

CATEGORIES AND SUBJECT DESCRIPTORS

K.3. [Computers and Education]: Computer uses in education Language– *collaborative learning, computer-assisted instruction, and computer managed instruction, C5 Computer System Implementation-portable devices.*

GENERAL TERMS

Emerging Technologies, Deep Learning, Story-telling method

KEYWORDS

Podcasting; Expansive learning; reflective learning

1. INTRODUCTION

Anecdotal evidence shows that most students use portable devices for entertainment. Mobile devices are used for entertainment, iPods and mp3 players for listening to music and mobile phones for maintaining social networks. It therefore stands to reason that portable technologies are ubiquitous among students but these have not been fully exploited as teaching and learning tools. The convergence of entertainment devices, social practices, and emerging technologies provides useful teaching and learning opportunities. This paper focuses on one such opportunity, use of podcasts to scaffold expansive learning. Learning and reflection are like two sides of the same coin, as one cannot exist without the other. Accepting this argument, it follows that through scaffolding reflections; students can widen their perspectives on a given task and enrich their learning experience. Thus, reflection allows learning activities to continuously evolve and transform hence creating a dynamic learning process or an expansive learning process. Expansive learning is a method of grasping the

essence of an object by tracing and reproducing theoretically the logic of its development, of its historical formation through the emergence and resolution of its inner contradictions [1]. It can be inferred from [1] that podcasts produce a way of grasping the essence of its (podcast) content engaging with the contextual underlying assumptions of the speaker and resolving the inner contradictions of the listener. To the extent that podcasts are one way communication (i.e. speaker to listener) both the subject matter (content) and the speaker's audience assumptions are recipes of the listeners' inner contradictions being continuously resolved during the listening process. Thus, augmenting reflective learning through design of learning tasks that scaffold students listening to podcasts has potential to lead to a deeper learning experience because of the sequence of epistemic actions evoked during the listening to podcasts.

An ideal-typical sequence of epistemic actions in an expansive learning cycle is described as follows [1]: The first action is that of *questioning*, criticizing, or rejecting some aspects of the accepted practice and existing wisdom. The second action is that

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of *analyzing* the situation. Analysis involves mental, discursive, or practical transformation of the situation in order to find out causes or explanatory mechanisms. Analysis evokes “why?” questions and explanatory principles. The third action is that of *modeling* the newly found explanatory relationship in some publicly observable and transmittable medium. This means constructing an explicit, simplified model of the new idea that explains and offers a solution to the problematic situation. The fourth action is that of *examining the model*, running, operating, and experimenting on it in order to fully grasp its dynamics, potentials, and limitations. The fifth action is that of *implementing the model*, concretizing it by means of practical applications, enrichments, and conceptual extensions. The sixth and seventh actions are those of *reflecting* on and evaluating the process and *consolidating* its outcomes into a new, stable form or practice.

Expansive learning is an outcome of reflection as Engestrom [2] put it succinctly:

...the new activity structure does not emerge out of the blue. It requires reflective analysis of the existing activity structure – one must learn to know and understand what one needs to transcend. And it requires reflective appropriation of existing culturally advanced models and tools that offer ways out of the internal contradictions.

It can be inferred from [2] that the challenge is learning to know and understanding what one needs to transcend when listening to podcasts. This challenge cannot be left to students and learning opportunities are missed if not scaffolding happens. The thesis of this paper is that podcasts are tools for reflection but do not by themselves guarantee reflection. There is therefore a need for reflective appropriation of podcasts within an expansive learning cycle if a user is to use podcasts as tools for resolving the emerging inner contradictions and have an enriched learning experience. To this end, podcasts are considered in the context of three interacting contexts of an expansive learning cycle [3]: criticism; discovery; and application. The context of criticism highlights the power of resisting, questioning, contradicting and debating. The context of discovery highlights the power of experimenting, modeling, symbolizing and generalizing. The context of application highlights the power of social relevance and embeddedness of knowledge, community involvement and guided practice. In all three contexts, reflection has the potential to benefit from podcasts. In particular questioning, contradicting and debating are reflective instruments that are either an outcome of reflection or prompt reflection. Questions can serve as prompts to enable a student to discover their own contradictions or misunderstandings. Podcasts can thus enable students to think deeper on their actions such as presentation style and confidence in responding to questions. Experimentation or modeling reflection is a post event activity and allows a person involved to think about the processes after the event. The social relevance and community involvement is critical as it underscores a need for learning communities in shaping reflections and for fostering knowledge creation. One way of achieving a learning community is through making student podcasts public to the class and designing tasks that require students to reference each others presentations. Podcasts has great potential for allowing students to articulate their understanding of ideas and concepts, and to share the outcome with the audience they value, such as their peers [4]. Students’ peer groups serve as supportive learning communities

because in such groups students have a shared objective of coming together to collaborate and learn together [5]. Thus, the aim of this study was to explore how podcasts could be used to scaffold expansive learning for students’ learning communities.

2. PODCASTING OVERVIEW

The word podcast is a hybrid of ‘iPod’ and ‘broadcast’ and is a method of distributing audio files over the Internet using Really Simple Syndication (RSS feeds). RSS is commonly used for delivering summaries (feeds) of news stories. An RSS contains an index of items or episodes in the series, including title, date, description, and also specifies the multimedia enclosure (i.e. the link to the file, its size, and content type). The podcaster makes available the RSS feed which a user subscribes to using a podcatcher or an aggregator. Without subscription to an RSS feed, a user would download audio files from a website and play them using a media player. However, listening to podcasts through downloads requires that a user visits the sites where podcasts have been posted. In this regard, podcatchers take responsibility of checking for updates from all subscribed sites whereby allowing a user to ‘stay in one place’ while being notified about latest podcasts from subscribed sites. One of the reasons podcasting is having a major impact on education is the ability to make up-to-date content available immediately to large audiences via downloads or subscription-notification systems [6]. The caution here is that, like other technologies, podcasts not a panacea of all higher education challenges [7]. However, the potential of podcasts in education lie in the availability of easy to use free software such as Audacity¹, which support both the generation and distribution of podcasts on the producer side, and tools for subscribing to podcasts and downloading them to mobile devices on the consumer side. Other reasons for the increasing popularity of podcasting is the increasing availability of tools that support easy production, hosting, distribution, subscription, automatic download and upload (to a mobile players) [8].

3. PODCASTS FOR EDUCATORS

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The number of institutions using podcasts, especially in the United States and the United Kingdom is growing. For example, Duke, Michigan, Purdue, Stanford, and UC Berkeley make podcasts of undergraduate lectures and publish them on the Web for enrolled students to access [11]. Publishing audio lectures is one of the common uses but not the only use. There are four ways in which podcasting will affect the education landscape [12]; firstly, podcasts will extend classroom learning beyond threaded discussion boards or physical class discussions; secondly, podcasts will be used by students to plan and prepare cooperative projects with peers; thirdly, throughout the semester students will use podcasts to extend, expand, or clarify virtual or physical

¹ <http://audacity.sourceforge.net/>

classroom discussion; fourthly, students will listen to podcasts for extended professional community development. Pedagogical uses of podcasts are broadly classified in the areas of lecturing, tutoring, and remediation [6]. Some practical uses of podcasts include a student listening to a podcast during a bus ride to the university so as to refresh a lecture before meeting two of her friends to do their homework; three students doing homework together and one of them remembers a quote a teacher made during the lecture, they quickly look it up and listen to the respective part of the lecture [8]. James Hilton², an Associate Provost at the University of Michigan has referred to podcasts as a technology poised to disrupt how higher education operates in a new knowledge economy. Others use podcasts to promote collaborative knowledge sharing through students having a shared task to script and create educational podcasts for their peers [4].

In the United Kingdom, the Informal Mobile Podcasting and Learning Adaptation Project (<http://www.impala.ac.uk>) has been exploring the use of podcasts in Higher Education since 2006. The IMPALA project has developed a podcast pedagogical model³.

This paper takes the view that podcast mediated learning tasks fosters reflection and leads to expansive learning. The project reported in this paper, set out to answer the question: How do podcast mediated tasks scaffold expansive learning? In the quest to explore the question, a project was conceived at the University of Cape Town. The project ran for two years, in 2007 with 5 students and 2008 with 17 students.

4. METHODOLOGY

In this paper, an interpretive research approach is used. An interpretive paradigm is informed by a concern to understand the world as it is, to understand the fundamental nature of the social world at the level of subjective experience [13]. The social world was a community of 5 learners in 2007 and 17 in 2008. The 2007 course was used as a pilot. The focus of this paper is on the 2008 cohort. Learners were registered for a post graduate diploma course. None of the participants had used podcasts prior to coming on the course. Participants brought to the course varied experiential knowledge drawn from diverse contexts viz; primary, secondary, higher education, and government; discipline based experience from disability, health sciences, administration, and ICTs; ICT experience ranged from support services, networking, and systems administrator. Exposure to learning management systems was limited to proprietary systems. The significance of this was that student discussions were rich and students learnt from one another whereby fostering expansive learning.

Reflection was an integral part of the course and podcast mediated tasks were designed and integrated in learning activities. The course was organised as follows: Tuesdays (16:00 – 19:00) were dedicated to guest lecture presentations; and Thursday (16:00-19:00) were for student seminars. The three contexts of expansive learning were used as follows: *Context of Criticism*: during student seminars, individual students gave presentations on their understanding of an assigned article and peers asked

questions which required spontaneous responses. The aim was to empower students to defend their positions and answer questions from peers; *Context of Discovery*: the post event activity required students to listen to the podcast of their presentation for self-critique and to reflect on their spontaneous handling of questions asked by peers. This involved reliving both their presentation and the presentation of others whereby learning from peers. *Context of Application*: to make the process of discovery worthwhile, students were required to write a two page reflective piece which had to be submitted for assessment.

The design of podcast mediated learning tasks was influenced by the Pedagogical Model proposed by the IMPALA project which postulate that good practice in using podcasting is to integrate podcasts in a learning management system (LMS) and to offer students 24/7 access to learning materials. As most of the students did not have 24/7 Internet access outside the University, the researcher was mindful of issues of access. The value of podcast is increased when podcast content supplement other learning activities. In view of this, a learning management system (Sakai⁴) was used in addition to podcasts mediated tasks. Needless to say, podcasts were distributed through the LMS. Tasks were derived from and linked to guest presentations students listened to in face-to-face sessions. Learning resources including podcasts were placed in the LMS from where students either downloaded to mobile devices or listened to from their desktops. Students engaged with assigned readings, attended guest presentations, and were assigned tasks that required them to reflect on the relations between theory and practice as espoused in the academic readings and guest lectures. The podcast mediated task was assigned to students after each student had given an oral presentation to the class, and engaged in a question and answer session with peers. The task on which this paper is premised is shown below:

Task 1: Write a short piece on your reflections of the course so far. Draw from the presentation you gave during the student seminar. (NB: *Students had given presentations and answered questions from peers*). Cite three people from the class and discuss how your reflections are impacted on by the reflections of your peers.

Students had narrated their reflections on the course thus far. A podcast of each reflection was generated. Podcasts were posted on the LMS. The task required that students cite at least three other students' reflections. Thus the objective of the task was two fold: i) to allow students to reflect on how they presented and how they responded to questions from peers ii) to allow students to expand their views by taking into consideration the views of at least three other students. To accomplish the assigned task, students had at their disposal podcasts of their presentation and those of other students. Although it was not compulsory that students listen to peers' podcasts, it would have been difficult to accomplish the task without listening to them. The deliverable of the task was a written text. All podcasts were designed for reuse and involved a single session in case of guest lectures and single sessions with multiple presentations as was the case for student seminars. Although student seminars had an informal feel to help students

² http://connect-cdn.educause.edu/files/active/0/E05-James_Hilton.mp3

³ <http://www.impala.ac.uk/outputs/model.html>

⁴ <http://sakaiproject.org/>

relax, discussions were serious. The class size remained the same at 17. The average class attendance during the semester was 15.

5. OBSERVATIONS

The research method of story was used to solicit students' experiences of using podcasts. Story telling is a valid research method and in many respects could be compared to precedent cases used in the judicial system [8]. Just as in the courtroom, stories take the form of reflection in the presence of peers to make sense of their situation. Individuals, in a story telling process, retain a part of the story line, a bit of interpretation, story performance practices, and some facts that confirm a line of reasoning [8]. In this case, the story telling process is recursive as stories about student podcasting experience is also podcasted, leading to a new podcasting experience. Podcasts were the third most used tool in the LMS during the semester under study (see Table 1).

Table 1: Use of tools in the LMS

Resources / dropbox	87.4%
Forums / messages	5.2%
Podcasts	3.3%
Chatroom	1.7%
News	1.2%

There were 17 stories, each narrating different ways students experienced tools used during the course. For the sake of brevity, extracts from five stories are analyzed. These stories were chosen as they represented voices that were echoed in different ways by other students. The discussed stories give insight into the relationship between task mediated podcasts, expansive learning and cognition. This is particularly important because expansive learning can only be inferred at cognitive level.

5.1 Deconstruction Analysis

In the following story, a student (who is also a school teacher) narrates her experience of listening to podcasts which were integrated into the learning process. She mentions that it was the first time to have listened to audio in that way. The task required that every student listen to their presentation paying special attention to how they answered questions from peers; and to listen to at least three other students and citing why chosen peer's views were important.

Story 1: I have never used multimedia to playback a presentation session and to playback and write an assignment based on what I listened. Playing back several times peers' reflections with an aim of selecting some for citation in this assignment was an experience I would value when I do my research work in the second year of this course.

In telling Story 1, the student appears to have gained so much interest in podcasting that she decided to pursue further research on the topic. This suggests that the *context of discovery* was created. Listening to a playback and writing an assignment is consistent with the *context of application*. As a consequence of having special focus on using podcasts to scaffold expansive learning, students told stories about subsidiary skills they acquired.

Story 2: One of the things I have learned is how to download a podcast onto a mobile phone. This can be done either using a data cable or via Bluetooth. I am quite

familiar with downloading music and images from a computer using a data cable but I had no idea you could download voices as well. This is probably because I never made this connection: texts, images, sound (either as music or voice) and video are all data stored in different forms.

Of interest in Story 2 is that the student reflected on her prior skills on data transfer using Bluetooth but had not realised that the process of exchanging audio files were not different. This is a case of the *context of application* having been realised. Another student explains how he learnt by listening to peer's podcasts.

Story 3: As I listened to the podcasts, I realised that I too would learn a lot from the class because the sessions are all interactive. The importance of interaction in the learning experience should not be down played. Listening to the podcasts, I found myself agreeing with some of what my friends had said. At times I was thinking: "I totally agree with that" and at other times, I found myself thinking "That's a different way of looking at the situation or I never thought of that!" Its amazing how one's views can be coloured by those the people one interacts with.

The use of podcasts seems to have mediated expansive learning. This implies that there was a *context of discovery*. Story 3 tells of how his views were transformed through listening to peers' podcasts. The internal conversation that occurred suggested that a *context of criticism* existed. In the next story, the student recalls how podcasts allowed him to revisit a lecture and engage with it.

Story 4: ...the podcasts are more interesting and easy to use in diverse socio-economic situations because they can be used in different ways. And to learn that learners revisit a previous lesson and critically engage with the lesson afterwards was quite exciting to me. I could not believe until I had an opportunity to download some podcasts from the internet and listened to them. I was able to follow the seminar in a deep and critical way than the seminar time.

The significance of Story 4 lay in the way the student saw the application of podcasts to serve the needs of students from diverse socio-economic backgrounds (i.e. *context of application*). The critical engagement with a lesson in the absence of the lecturer or peers suggests that a safe *context of criticism* was created. The disbelief and subsequent positive experience testifies to a *context of discovery* having existed. The final story to be considered is one where a student saw possibilities of podcasts beyond the experiences exposed to in class.

Story 5: What she said actually made me realize that OBE⁵ can greatly benefit from the use of ICTs. Podcast is the best tool for OBE. It can help learners to reflect on their participation during group work and project making. It is a good tool to use for groups to give each other feedback during class debates. It is learner friendly.

In this story the student expanded her imagination having listened to podcasts from peers. The student adds that podcasts could be useful for group feedback. This suggests there was a *context of discover*. To the extent that the story goes further to

⁵ Outcome Based Education

mention OBE as a possible application area of podcasts is evidence that a *context of application* was created.

6. DISCUSSION AND CONCLUSION

The research question that premised the study is revisited with the view to determining the extent to which it has been answered. The question sought to investigate how podcast mediated tasks can scaffold expansive learning. The analyses of student stories show that the three interrelated contexts of expansive learning viz. the context of criticism, context of discovery, and the context of application were mediated through podcasts. The learning community involved 17 students who had respect for each others views and had a shared objective which fostered a sense of purpose for the group. The learning tasks were designed to allow individual students to reflect on their learning and listen to both their own podcasts as well as other students'. While each student was focused on their individual learning, each contributed to community knowledge and drew from it. This finding is consistent with [10] who report the need to destigmatise collaboration and argue that finding out from or gaining advice from other people or to use information from other sources not already in ones head, was not cheating. This view on collaborative learning is supported by the observation that students learnt from creating and sharing podcasts with an audience they valued such as their peers [4].

It is worth noting that although students had opportunities to ask peers questions during face-to-face sessions, some questions or comments for presenters arose when listening to podcasts (as is the case in Story 3). Sometimes the student would agree or disagree with the presenter while listening to a podcast. This post presentation engagement suggests two things: i) the context of criticism extended beyond time and space of a traditional classroom; ii) the needs of slow learners or struggling students who need more time to understand or follow a discussion before they can engage or make a contribution were served. It follows that podcasts scaffolded expansive learning beyond the limitations of traditional classrooms.

This paper has described the phenomenon of podcasting, its general uses in higher education, pedagogical models of using podcasts; has shown how devices students use for entertainment are being recast for educational uses; has illustrated pedagogically how expansive learning can be scaffolded; demonstrated use of reflective story telling as a teaching strategy; augmented story telling with reflective learning; and illustrated ways that podcasts can be used to scaffold expansive learning. The conclusion is that podcast mediated reflective learning can scaffold expansive learning. However, podcast mediated tasks need to be designed if podcasts are to have any meaningful impact on teaching and learning.

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