Using a Participatory Action Research Approach to Design a Lecture Podcasting System

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ABSTRACT

Although podcasting is popular in higher education, there is limited research on podcasting in developing institutions or resource constrained environments. There are fragmented implementations of podcasting projects by enthusiastic faculty but the tools used are often proprietary, imported from the West by administrators without any consultation with the lecturers who eventually use them. Similarly, many of these tools are used on a trial basis. The authors hypothesize that involving academics through user centered approaches to the design of educational applications will encourage them to use the tools. This paper reflects on a Participatory Action Research approach adopted in the design of a podcasting system. The research study incorporated a cyclical action model with four distinctive stages designed to guide the constituencies involved in the study to design, test, and possibly enhance the tool. The findings reveal some of the contextual phenomena that create both challenges and opportunities for a podcasting model.

Keywords: Higher Education Institutions (HEIs), Information and Communication Technologies (ICT), Mobile Learning Content Authoring Tool, Participatory Action Research Approach, Podcast, Podcasting System

1. INTRODUCTION

Despite use of podcasting becoming increasingly popular in higher education, there is inadequate research published to explore podcasting in developing Higher Education Institutions (HEIs) let alone the design of tools to support these tasks. Podcasting is defined as the authoring of, distribution over the internet and the subscription thereof to audio, video and other media files via feeds with clients such as iTunes (Malan, 2006; Lonn & Teasley, 2009). This definition depicts how podcasting is done in the developed world where internet connections are reliable and students have access to high-end mobile devices, i.e., iPods, iPhones and other smart phones. In this paper, we use a looser definition of Podcasting, i.e., a form of...
mobile learning in which audio/video content is authored and made available on the internet, using some server or shared storage space for downloading onto a computer and or transferred to mobile devices (possibly via data cables) for “consumption”.

This view provides a way of appropriating the affordances of podcasting to harness the use of Information and Communication Technologies (ICT) for development.

Research undertaken in the developing world involving the application of ICT within the fields of socioeconomic development, international development and human rights is referred to as ICT4D. ICT4D research generally covers domain areas such as agriculture, health, economics and education. In particular, educational applications for the developing world have been an active ICT4D research area over the last decade.

However, the majority of these applications have either been developed for the underserved populations, rural children and particularly for informal education scenarios (Kumar et al., 2010; Kam et al., 2008). Therefore, podcasting in developing HEIs presents an interesting study area because educators are slowly beginning to realize its benefits. Currently, there exist some fragmented implementations of podcasting by enthusiastic faculty but the tools used are imported from the West and are usually not adopted in the long term due to mismatches in needs and requirements. Communities are complex structures influenced by local customs, practices and various other constraints, such as digital divides, that designers must understand if they wish to build relevant contextual technologies (Kam et al., 2005). Moreover, literature from computer supported collaborative work (CSCW) (Maguire, 2001; Grundin & Pruitt, 2003), Information Systems (IS) (Heeks, 2002) and Human Computer Interaction (HCI) (Zimmerman et al., 2007) identifies that a common reason why systems fail is because the people who are expected to use them do not necessarily get to contribute to the design. Additionally, where possible, the opportunity to iterate or modify the technology, as uses and requirements emerge, is desirable.

The implementation of mobile education systems has not paid adequate attention to understanding the organizational contexts and environments in which they will be implemented (Mugwanya & Marsden, 2010). Therefore, too little attention is ultimately given to the design, implementation and evaluation of mobile education systems, despite advances in technology and a clear compelling case to support their utilization. There is a need within mobile-education research to invest in matching requirements more closely with design, while applying human centered design approaches (Mugwanya & Marsden, 2011). This paper explores how adopting a Participatory Action Research (PAR) approach gave rise to our first software prototype, and presents the challenges faced as well as future plans. We postulate that actively engaging with the end users throughout the stages of the project lifecycle improves the chances of the podcasting systems being successful. The rest of this paper is organized as follows: Section 2 presents some related work; Section 3 the first Participatory Action Research cycle; Section 4 the second participatory action research cycle; Section 5 the findings and reflections; Section 6 the lessons learnt while Section 7 presents the conclusions and future work.

2. RELATED WORK

Mugwanya and Marsden (2010) reveal that much mobile learning activity has involved the use of the following categories of tools namely: “hypertext and multimedia applications for content creation, video recording tools, artificial intelligence tools and natural language processing tools” (p. 24). However, lecturers (or end users of these systems) generally have little or no opportunity to contribute to their design. In addition, these tools are normally costly and are general purpose commercial tools not developed within developing (ICT4D) contexts. As a result, the systems do not necessarily adequately address users’ needs and are
Creative Teaching and Learning Strategies for Novice Users of Mobile Technologies
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