

Investigating learner interactions via ubiquitous access

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ABSTRACT

This short paper is an account of the first steps in a research into how does mobile accessibility impacts the learner interactions (social versus cognitive presence) of adult learners in an informal, open, online course. The research is set up as a mixed methods study, combining two types of new educational learning/teaching formats to investigate a possible diversification in learner interaction. The two learning/teaching formats are: 1) the open, online course which embeds social media as a way to enhance peer-to-peer interactions, specifically the Massive Open Online Course (MOOC) format, and 2) mobile learning (mLearning). The reason for combining these two contemporary educational approaches is to investigate whether or not learner interaction is impacted by enabling mobile access to a MOOC. The learner interactions will be investigated making use of an adapted Community of Inquiry (CoI) framework which focuses on learner interactions. The learner interactions under investigation using the CoI will be: social presence (personal interactions between course participants) and cognitive presence (cognitive, academic or intellectual interactions between participants). This short paper provides an overview of the research problem, its background, a shortened literature review and the methodology used. During mLearn2012 the research will have reached a first analysis and these first analysis will be shared by the participants of mLearn2012.

Author Keywords

Mobile learning, mLearning, mobile devices, Community of Inquiry, open education, collaborative learning, learner interactions

INTRODUCTION

Since 2005 the worldwide rise of mobile devices, social media and learning that is facilitated by new mobile and social technologies, has grown exponentially (Johnson et al., 2010). With the recent rise of new educational forms (both instructional and technologically) new research is emerging to study the impact and dynamics of these new technologies and ways of instruction. de Waard et al. (2011a) indicated that combining technologies that embrace the complexity of knowledge production with pedagogical formats that allow learners to build knowledge by means of filtering that complexity, will allow a new educational balance to emerge. In this case the CoI framework will be used to analyze part of the complex learner interactions taking place in a contemporary, new ubiquitous learning environment.

PROBLEM

What happens to learner interactions if an already social media rich massive, open, online course (MOOC) is made accessible to mobile devices for the purpose of mobile learning (mLearning)? Will there be a diversification in the learner interactions that take place based upon the fact that part of the learner group uses mobile devices to access the course? How do these interactions relate to each other while using the Community of Inquiry (CoI) framework? Is the fact that the open, online course embeds social media the real impacting factor on increased/decreased learner actions?

This research will look for well-founded answers to these questions.

PURPOSE AND SIGNIFICANCE OF THE RESEARCH

The purpose of this sequential explanatory mixed methods study will be to come to a grounded theory on how mobile devices access does or does not increase learning interactions in an open, online course environment that is social media rich. As such the focus will not be on the affordances of adding mobile accessibility to the course which has been researched before, but will look at learner participation in the course: dialogue, collaboration, informal learning and networking, communication with social media tools. As learner interactions are at the core of this research, this study looks into collaborative learning. The growing importance of collaborative learning is supported by mLearning, constructivism, connectivism and its practical implementation the MOOC by all of their ability and focus on communication, more specifically dialogue, to construct knowledge and create collaborative networks as described by de Waard et al. (2011 b). MOOCs lend itself for research in many areas, including research in the areas of learner motivation, engagement, social presence and instructor presence (Koutropoulos et al., 2012).

The main significance of this study lies in the fact that no existing studies have explored the learner interactions of adult learners that access open, online course resources, activities and dynamics with mobile devices compared to adult

learners that do not make use of mobile devices to access a social media enhanced course. Knowledge and understanding of the factors affecting learner participation in ubiquitous learning environments may provide additional insight into ubiquitous, open, online design to create an optimal learner course environment. Knowing the impact of ubiquity on mobile and non-mobile learner participation, can also result in guidelines for adult learners to increase their success rate for completing such courses. It might also be able to reduce the drop-out rate for these type of online courses.

THEORETICAL FOUNDATION THROUGH LITERATURE

While looking for a possible research subject, a literature search was done to get an idea of contemporary challenges with regard to mobile learning and learning aspects. This resulted in a set of challenges put forward by a number of mLearning and Community of Inquiry (CoI) researchers that are relevant to the study at hand.

mLearning challenges

Peng (2009) indicated the need for researchers “to conduct research on the effects of ubiquitous computing” (p. 11). However this challenge covered too much ground. Gill Clough (2009) focused on informal learning and based on her research she concluded that “future research into mobile learning needs to take account of the role of mobile technology in supporting collaborative and constructivist learning over a wider geographical and social context” (p. 131). Her focus on a wider geographical and social context can relate to the MOOC format as these types of courses have attracted and will attract a global audience with a diverse professional and personal background (Fini, 2009).

Kukulka Hulme et al. (2009) stated that “research attention should be directed at identifying those simple things that technology does extremely and uniquely well” (p. 9) and they cited Roschelle (2003) adding that it is equally important “to understand the social practices by which those new affordances become powerful educational interventions” (p.268). In addition Kukulka-Hulme et al. mentioned that “moving the focus away from the mobile technology and towards the social practice it enables, allows for a different conceptualization of mobile learning” (p. 9) and they concluded saying that researchers in mobile and ubiquitous learning will be keen to tackle the new challenges arising from learner activity across multiple virtual and physical contexts, spanning formal and informal learning.

Looi et al. (2010) brought learner curiosity and social spaces together when he mentioned that “the challenge is to enable learners to learn whenever they are curious and seamlessly switch between different contexts, such as between formal and informal contexts and between individual and social learning, and by extending the social spaces in which learners interact with each other” (p. 1). Hence, it will be interesting to look at an informal learning environment that allows different social learner interactions to take place.

Frohberg et al. (2009) screened 1469 publications (570 papers of mobile learning conferences and 887 papers of journals) and categorized 102 mobile projects that were happening up to 2007. They came to the conclusion that “although a significant number of [mobile] projects have ventured to incorporate the physical context into the learning experience, few projects include a socializing context” (p. 1) and they went on stating that “despite the fact that mobile phones initially started as a communication device, communication and collaboration play a surprisingly small role in Mobile Learning projects” (p. 1).

The fact that experienced adult learners would be the target population of the study, also had an added bonus when looking at mobile projects from the past. Frohberg et al. (2009) concluded that “there is hardly any conventional support for learners that have already reached a trained level and who want to advance. In their continuously evolving context, they have a lack of means and instruments to reflect and process their knowledge, to record and share their insights with others who are not physically present, and to create material to work with in a self-reflecting or cooperative process. To position Mobile Learning in this niche would facilitate an innovative learning support that was not possible before and thus establish an immediate value” (p. 16).

CoI challenges

Next to the challenges put forward by mLearning researchers, there is also research to be done in the realm of the Community of Inquiry (CoI) framework. The CoI is of interest to analyse and interpret learner interactions, as such the CoI will be used for the purpose of qualitative data analysis in this research for it enables learner interactions that populate qualitative data to be meaningfully analyzed according to the type of interaction taking place. The CoI framework is a process model that provides a comprehensive theoretical model that can inform research on online learning. It assumes that effective online learning requires the development of a community (Rovai, 2002; Thompson & MacDonald, 2005; Shea, 2006) that supports meaningful inquiry and deep learning. Specifically with regard to online interactions that relate to the cognitive presence Swan et al. (2008) mentioned a research gap: “cognitive presence may be the least researched and understood of the three presences [covered by the CoI], yet it is cognitive presence that goes to the heart of a community of inquiry” (p. 5). Part of the analysis done in this research will look at both social and cognitive interactions undertaken by course participants that do and do not use mobile devices to interact in an open, online course. This analysis is part of phase 1 and will also be investigated further during phase 2.

Given all these research challenges and suggestions, it is the researcher’s belief that this study will add to the overall knowledge of the distance education field.

METHODOLOGY

This study will use a sequential explanatory mixed methods design, which is a procedure for collecting, analyzing and “mixing” both quantitative and qualitative data at some stage of the research process within a single study, to understand a research problem more completely (Creswell, 2009).

Research environment

MobiMOOC2012 (<http://mobimooc.wikispaces.com/>) will be a mobile accessible MOOC focusing on the topic of mLearning that will last for three weeks with a tree like course sequence (i.e. first week only one module, second week three modules, and during the third week participants will be able to choose between six mLearning topics to focus on). The course will be running from 8 September until 30 September 2012. The format of the course is an adapted design derived from the Massive Open Online Course or MOOC format. This format uses a lot of social media tools and has a big focus on peer-to-peer participation and collaboration.

The amount of participants entering the course is not known, as the course is open to all and the free registration has only started in mid April 2012. Looking at the previously organized MobiMOOC2011, a population of approximately 500 participants can be expected.

Target population

The population of this study is delimited to the participants of MobiMOOC2012. The researcher of this study hopes to be able to identify a total study population of between 60 – 80 learners (depending on the amount of participants willing to sign up for the research via the consent form) for the first quantitative phase of the study, divided over two groups:

- MobiMOOC participants that will use mobile devices to access and interact with other participants during the course.
- MobiMOOC participants that will not be using mobile devices to access or interact with materials or other participants during the course. These participants will be using a fixed computer or laptop with an internet connection to connect to the course locations.

The assignment of MobiMOOC participants to either the mobile device using group, or the not-mobile device using group will be done on basis of the mobile device definition used for the purpose of this research. In order to divide the sample group into two groups, an indicative question will be put into the survey that will allow the researcher to set-up a mobile and a non-mobile sample group for both phases of the research. If Ethics approval is gotten in time, the sample population for this study will be approached two weeks prior to the beginning of the course (i.e. 27 August 2012) with a request to be part of the research at hand. This request for participation will be sent as a general announcement to the complete MobiMOOC participant group, with a clear link to the research consent form that accompanies this research study and a request to return the consent form before the actual start of the course.

Research design

This study will use a sequential explanatory mixed methods design. In a first phase statistical, quantitative results will be collected from surveying a sample of the MobiMOOC participants (divided in two groups, one group that will use mobile devices to access and interact with the course, and the second group who will not be using mobile devices to interact or connect to the course). In addition to the survey an analysis of the interaction frequency of both target groups will be conducted. After this first phase the second phase will start with 20 - 24 purposefully selected individuals that will be interviewed related to their learning interactions in order to come to a grounded theory on the impact of mobile device access on learning interactions in an informal, open, online course.

RESEARCH RESULTS SHARED AT MLEARN2012

At the time of mLearn2012 the first set of data will have been analysed and ready to be shared with an academic audience. The results will give an overview of the qualitative data and the differentiation of learner interactions following the CoI. The qualitative data shared will reflect potential differences in learner interactions for learners using mobile devices for learners and participants who do not engage in the course with mobile devices.

CONCLUSION

The first steps in the search for the potential impact of mobile accessibility on learner interactions in an open, online course will be of interest to the mLearning community, as it focuses on the currently less researched area of social interactions in a mobile learning environment. As the researcher highly values the thoughts and ideas of peer mLearning researchers and mLearning experts, it will add to the overall research when the first results of the study will be shared and commented by the participants of mLearn2012. In addition the first findings will enable researchers focusing on similar areas to add to their research, or exchange notes on the subject.

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