

## The peripatetic learner - the role of mobility in the formation of collaborative learning spaces

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The earliest notion of a university came from people walking through the streets of Athens thinking about how the world works and trying to understand it. Apple Distinguished Educator Dr. William Rankin from Abilene Christian University (2012) reframes this notion of the peripatetic learner, originating from Aristotelian philosophy, to describe how mobile technologies have brought about a new way of thinking about education. The ability to be mobile has implications in reshaping future learning: to rethink the spatiotemporal structures of formal tertiary education means to understand both the affordances and challenges. The disruption of traditional pedagogies enables new forms of collaborative interactions to occur. This paper considers how to define a learning space that is no longer constrained by the physical classroom. By taking a technological perspective and a mixed methodology, it aims to evaluate practices of harnessing mobility and collaboration through existing or potential applications on the mobile platform.

Keywords: mobile learning, mobility, tertiary, education, collaboration, disruption, technology

### Introduction of concepts and literature

This paper introduces the critical concepts underlying the researcher's investigation of the potential applications of mobile devices and the impact of mobility on learning and teaching practice. Increasingly rapid developments in the field of mobile technologies have led to a growing interest in how such devices are being integrating into the field of education. Despite the fact that mobile devices are not designed specifically for use in learning and teaching, they have been embraced at all levels, from early childhood through to tertiary and higher academic study. Within the field of educational technology, the research addresses the implications of appropriating the mobile device in tertiary education, specifically, how to manage the inherent disruptions of establish practice. The objective of this research is to examine the role of the mobility in the formation of collaborative learning spaces, with the aim of evaluating best practices to overcome future challenges.

The area of 'mobile learning' has gained a lot of momentum in recent years and existing research provides current field of knowledge. This paper will use the definition suggested by Manuguerra and Petocz (2011) that refers to the next development of e-learning that has utilised the advantages of mobile phones and tablet computers as means of accessing content. When discussing the learning 'space', it is important to define it as separate from a 'place', which is a physical setting in which activities and experiences of living occur (Relph, 2007). This paper argues that the learning 'space' is no longer confined to any given 'place'.

Not long after its release in 2010, early adopters of the Apple iPad were already hailing the device as the 'game-changer' in education (Brown-Martin, 2010). Mobile technologies are quickly becoming seamlessly integrated in everyday life, and one of the biggest impacts it has had is in facilitating communication and connectivity. As this connectivity is brought into the classroom, it opens up possibilities for more collaborative pedagogies. The key topic of interest is this idea of the collaborative learning space. When referring to the affordances, this paper will use the definition provided by Dr. William Rankin (2012), where the mobile device brings together rich media, connectivity, and full access to the internet. When addressing issues of pedagogy, this paper will use the wide definition as the process through which one can acquire forms of conduct, knowledge and practice (Williamson, 2012). The term 'peripatetic' is used in reference to the teaching methods of Aristotle, teaching as he walked around the Lyceum: learning happen while moving from place to place and engaged in discussion about the world (Squires, 1999). This paper reframes the notion of the peripatetic learner in light of the affordances of modern technology that enables this same style of learning across contexts.

A range of academic papers and relevant texts were selected for this review and will used to examine the role of mobility and its implications. Key concepts to understand are mobility and disruption and the role they play in changing our conceptions of what a learning space is. 'A Theory of Learning for the Mobile Age' (Sharples, Taylor, & Vavoula, 2007) provides an overview of the current technological context that exists and how this context is informing educational practice. 'No Significant Differences Revisited' (Reeves, 2005) addresses the inherent issues that arise when evaluating the effectiveness of 'new' technology enabled teaching. Laurillard

(2008) examines 'The Pedagogical Challenges to Collaborative Technologies' seeking to exploit the collaborative potential of technology to enhance learning experiences. The literature will inform the research design and methodology by providing insight as to how these concepts can be applied to the technology to harness the potential of what mobility enables, rather than the negative conception of what is disrupted. This paper proposes that mobility has changed the notion of a 'learning space': it is no longer defined by the physical classroom. The research questions propose that the mobile device enables collaborative learning because their original purpose was to facilitate global digital communication (Sharples, Taylor, & Vavoula, 2007). By looking at this notion that the learner is mobile, the research seeks to best utilise mobile technologies to create these learning spaces and utilise their collaborative potential for more engaging learning experiences. This appropriation of technology ultimately results in a disruption of institutional structures so it is important to consider the effects of disruption and explore its implications.

The questions posed by the research are intentionally broad: the unpredictable nature of technology brings about many new phenomena and its course is unforeseen, therefore it is important to be open to unexpected results. Sir Ken Robinson (2012) highlights that it can't be predicted how technology will play against culture and how people will use it. He uses the example of the iPad: Apple opened up the facility for third party applications which has resulted in a vast range of apps for many possible uses. Though it is important to be informed by educational theory, this research offers a technological perspective by utilising the mobile development platform, as it is this platform which has enabled the iPad to be appropriated into the academic context. This paper provides a review of a concise selection of literature based on the key themes of the research concerns. The selected authors provide insight into the existing knowledge and provide discussion around the concepts which are central to the research questions. The findings from the literature will be used to highlight the implications for research design and methodology.

## **Existing knowledge and conceptions**

In a society where technological change is becoming exponential, there is growing interest in understanding the relationship between mobile technology and learning. As proposed by Sharples, Taylor and Vavoula (2007), the effectiveness of a new theory of learning depends on understanding this relationship. A Theory of Learning for the Mobile Age (Sharples, Taylor, & Vavoula, 2007) acknowledges that each era of technology informs educational practice. The current technological era is defined by mobility. As portable computers become ubiquitous, so too does knowledge. Learning is no longer constrained within the fixed time and space of the traditional classroom. The proposed criteria for a theory of learning for the mobile age offers relevant discussion into the key themes of the research questions posed by this paper. The authors propose that as we enter the age of global digital communication, the mobility of people and knowledge needs to be the focus of inquiry. In relevance to the research question, they put forward the argument that we can no longer assume that 'learning' takes place in the classroom mediated by a teacher. The most significant concept that emerges is that the appropriation of technology leads to new ways of learning and constructing knowledge. The technology enables us to be more connected and through our communications, we create "impromptu sites of learning" (Sharples, Taylor, & Vavoula, 2007) to share understanding.

Despite the growing interest in the use of 'new' technologies in education, it is not a new idea to evaluate their effectiveness by comparing it to the 'old' or previous methods of classroom instruction. In a review of these media comparisons studies, Reeves (2005) calls for design research as a way to move past the "no significant differences" phenomenon. The proposal addressed the need to better develop and implement online teaching and learning environments by focusing on the broad problems critical to education achieved through collaboration among researchers and practitioners. The text is key for informing the research design and methodological approach required to avoid falling victim to the 'no significant differences' phenomena. Reeves provides insight into the existing field of research and offers a more appropriate framework for conducting research in the field of technology enabled learning. The effectiveness of technology enabled learning is hard to measure as the results are highly qualitative. The most significant concept to emerge from the reading is that the need for pedagogical change to achieve significant educational differences from the technological innovations.

To better exploit the collaborative potential of technology, Laurillard (2008) argues that it needs to be used for more adding logistical value to existing teaching methods. The technology needs to create something new rather than emulating the existing role of the teacher. The article identifies that collaborative technologies weren't designed for use in learning and teaching so suggests a technology design process to find a better way to utilise them in this context. A human centered approach addresses the needs of the learner and teacher and looks to educational theory to understand the learning process. In relation to the research questions, the article looks to how the given collaborative potential of technology can be better utilised through a redesign of the pedagogical

framework. The collaboration becomes more than an exchange of ideas, rather, the construction of a shared understanding of a concept. The most significant concept to emerge from the article is that traditional methods need to be explored in relation to the next context. Theory of online collaboration can be examined in the context of formal learning theory as a way to build a pedagogical framework.

## **Impact of mobile learning: catalysts for change**

### **The role of mobility**

A key focus of the research question is how the ability to be mobile creates opportunities for new kinds of learning spaces by removing the physical constraints of time and space. These constraints are inherently imposed by institutional structures that dictate when and where learning takes place. Sharples, Taylor and Vavoula (2007) argue that learning occurs outside of the classroom as engaging with our surroundings enables the formation of “impromptu sites of learning.” They propose that mobility enables us to understand how knowledge and skills are transferred across context. Laurillard (2008) uses the example of a school field trip to highlight how learning activities move from being teacher driven to becoming learner centred. The article proposes that mobile technologies offer a richer learning experience by facilitating collaboration between students in site specific practices, bridging the gap between the physical distances. From a technological perspective, Reeves (2005) argues that in evaluating the effectiveness of educational technologies, the variance of hardware features is a factor often overlooked. That is to say, it also needs to be considered that unlike the physical learning space, the mobile one is subject to limitations of the technology.

In relation to the research question, it is evident from the literature that the notion of a learning ‘space’ is more ambiguous. As mobile devices blur the boundary between virtual and physical spaces by augmenting the physical with the virtual, our sense of place is altered. Aided by the prevailing medium of communication, electronic media transfers information around the globe in seconds (Relph, 2007); we are able to conceive of a learning space that is defined in broader terms that enables us to interact with remote people and places. With more learning taking place off campus, it becomes difficult to define learning spaces solely in terms of a physical building. It is suggested by the literature that the role of mobility is to form a ‘space’ that facilitates interactions with people and places beyond our immediate physical proximity.

### **Social, cultural, technological and pedagogical disruption**

The appropriation of the mobile devices into educational can be described as having a ‘disruptive’ effect. This disruption occurs when the new methods of technology enabled learning create tensions with existing pedagogies. The main issue is the need to restore balance when the physical elements of the classroom and curriculum are taken away. Introducing the notion of a more ambiguous learning space disrupts the conceptions of the traditional classroom and Laurillard (2008) identifies the need to explore traditional learning methods in relation to the new context. As proposed by Sharples, Taylor and Vavoula (2008), this context is a society defined by mobility. The technology only becomes valuable when utilised in light of this new context and the new conceptions of space. This disruption seems unavoidable as ubiquitous use of personal technology leads to new expectations of learning as, like the device, it needs to be personal, user centered, networked and mobile (Sharples, Taylor, & Vavoula, 2008). However, Reeves (2005) argues that there is not enough known about the demands of online learning or how to best execute educational objectives. To address this disruption of pedagogy, it is useful to highlight the interrelationship between technology and society. Bijker (1995) argues that there is a need to analyse technical change as a social process: the mobile device has been appropriated into the educational community, but through this appropriation, the future development of the technology is shaped by this integration.

### **Conceptions of collaboration**

One of the main affordances brought into education with the introduction of the mobile device is the networked capability which inherently brings about a more collaborative approach to learning. Collaboration is a common theme underlying the reviewed literature and provides insight into how it manifests within technology enabled learning. In proposing a theory of learning for the mobile age, Sharples, Taylor and Vavoula (2008) base their criteria on an approach that is centered around the learner, community and knowledge. Collaboration needs to be more than just an exchange of ideas, rather the construction of a shared understanding of a concept (Laurillard, 2008). When exploring mobility as a contributing factor to collaboration, the literature addresses the need for a pedagogical framework to truly utilise mobile technologies for collaborative learning. The collaborative potential of the device is easily lost when the mobile device is simply integrated as a tool for

traditional teacher driven instruction. Rather, the spatial environments in which the tools are employed need to be taken into consideration.

## Conclusion

This literature review set out to determine the current field of knowledge in the regards to the appropriation of the mobile device in tertiary education. Within the context of the research and in light of the technological perspective, the focus is on the modern 'peripatetic' learner: one who is mobile and gains understanding across contexts and through interactions with people across these spaces. The research aims to examine the role of mobility and the implications of pedagogical disruption brought about by the mobile device. One of the more significant findings to emerge is that though the collaborative potential of the iPad is recognized, the current applications add only logistical value that comes inherently with online learning. Working towards learning for the future, the research aims to go beyond these current applications and harness the power of mobility.

The future challenges of technology enabled learning are in the need for pedagogical change. It is evident that this change doesn't happen overnight and the introduction of technology enabled learning is still very new in comparison to long standing institutional structures. The aim is to be able to support the modern learner beyond the constraints of traditional instruction based pedagogy. To achieve this, it is important to explore that best possible way to utilize the technology in a balance between technology enabled learning and institutional requirements. The literature provides insight to the conceptions and approaches on how to conduct further research.

In light of the work that has been done already, there seems to be an opportunity to develop an interface, system, or software product through practice based research. By taking a technological perspective, the research aims to evaluate methods of harnessing mobility and collaboration, either through existing or potential applications on the mobile platform. The design of the research will address how collaboration can be facilitated through the mobile device. The practice will look at utilizing the Apple iOS platform, this includes related supporting software and hardware, native and third party applications, to be explored in both traditional classroom environments (i.e. lecture halls, studios) and outside of it. Participants should be able to be both physically and remotely present. The highly qualitative nature of learning makes it difficult to define, measure and evaluate the best possible way to utilise the power of mobility. The learning 'space' is becoming more of a conceptual signifier rather than a physical embodiment. It is important to remain informed by educational theory, but as the literature has indicated, to adhere to it doesn't address the affordances of the technological age we live in.

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