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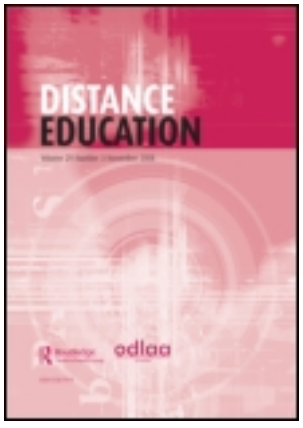

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Distance education and mobile learning: Catching up, taking stock

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EDITORIAL

Distance education and mobile learning: Catching up, taking stock

The background

This special edition of *Distance Education* is dedicated to mobile learning. As such it seeks to connect two rather different communities and specifically to introduce and explain the work of the small but growing mobile learning research community to the more established and mature distance education community. In introducing this edition it is perhaps necessary to provide some context and orientation for readers, all the more so since the mobile learning community is only some ten years old and is unevenly spread around the globe.

In exploring the literature of mobile learning, it is easier to get a sense of the breadth of mobile learning than it is to get a stable definition. Early approaches to definition focused on technology, for example, saying it was "any educational provision where the sole or dominant technologies are handheld or palmtop devices" (Traxler, 2005), or on the mobility of the technology, describing mobile learning as "e-learning through mobile computational devices: Palms, Windows CE machines, even your digital cell phone" (Quinn, 2000). Another view of mobile learning says it involves: "Any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of learning opportunities offered by mobile technologies" (O'Malley et al., 2003, p. 6), while Keegan took a similar position in 2005, saying

> I feel that in the definition of *mobile* learning the focus should be on mobility. Mobile learning should be restricted to learning on devices which a lady can carry in her handbag or a gentleman can carry in his pocket. I therefore define mobile learning as 'the provision of education and training on PDAs/palmtops/handhelds, smartphones and mobile phones.' One of the characteristics of mobile learning is that it uses devices:
>
> - which citizens are used to carrying everywhere with them,
> - which they regard as friendly and personal devices,
> - which are cheap and easy to use,
> - which they use constantly in all walks of life and in a variety of different settings, except education (p. 33).

The MoLeNET (2007) initiative in the United Kingdom, referred to later, still takes this approach, defining mobile learning as "exploitation of ubiquitous handheld hardware, wireless networking and mobile telephony to enhance and extend the reach of teaching and learning" (p. 1).

These earlier definitions were soon seen as too techno-centric and imprecise. Furthermore, owing to the transience and diversity of the devices, systems and platforms, they were seen as too unstable. They also merely put mobile learning somewhere on e-learning's spectrum of portability – an interpretation that could easily connect to the distance learning community without any intervening critique

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from the mobile learning community. Furthermore, while these definitions used specific technical attributes to consolidate a definition of mobile learning in order to help us reason about it, other technical attributes, notably connectivity, usability and latency, had the very opposite effect and disrupted the notion that there was even such a thing as mobile learning defined in terms of mobile technologies. The uncertainty about whether laptops and tablets deliver mobile learning (because of the lack of 'ownership', individuality and personalisation, the lack of unthinking spontaneity in carrying them around and the latency in starting them up) illustrated the difficulty with this kind of definition; the subsequent availability of netbooks and now the iPad continue to problematise the boundary between the mobile learning and the portable and the merely 'luggable' aspects of e-learning. These issues do all, however, hint at the underlying challenge, that of conceptualising mobile learning in a way that recognises its origins and practices in specific technological systems whilst being sufficiently abstract to be durable and sufficiently abstract to act as a stable platform for theorising about education and about learning. Outside the (self-referential) mobile learning community it may be less exclusive and more transparent to revert to an understanding of mobile learning as 'learning with mobile devices'.

At this point, having retreated from an authoritative definition of mobile learning, it may still make sense to look at definitions of distance education, thereby creating the twin poles for this special edition. According to one influential definition, the defining characteristics of distance education are:

- the separation of teacher and learner which distinguishes it from face-to-face lecturing
- the influence of an educational organisation which distinguishes it from private study
- the use of technical media, usually print, to unite teacher and learner and carry the educational content
- the provision of two-way communication so that the student may benefit from or even initiate dialogue
- the possibility of occasional meetings for both didactic and socialisation purposes
- the participation in an industrialised form of education which, if accepted, contains the genus of radical separation of distance education from other forms. (Keegan, 1980, p. 33).

The exercise of defining distance education addressed "the questions of terminology, definition and identification in an effort to contribute to the theory of distance education. The method used is an analysis of generally accepted definitions in an attempt to highlight what can be regarded as essential elements of any definition" (Keegan, 1980, p. 14). The method used exposed just how nationally and culturally determined such definitions could be, and how they could contribute to the development of theory. A more detailed exploration of the literature of mobile learning would reveal equally problematic relationships between theory building, cultural underpinnings and evidence from practice.

A subsequent paraphrase of the defining characteristics (of Keegan 1996, cited by Benson & Samarawickrema, 2009, p. 6) gives them as the quasi-permanent separation of teacher and learner; the influence of an educational organisation in planning and preparing learning materials and providing student support; the use of technical media; the provision of two-way communication; the quasi-permanent absence of the

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learning group so that students are usually taught as individuals rather than in groups; it points out that the last of these characteristics have been progressively diluted by the availability of various network technologies, many shared and deployed by mobile learning practitioners.

Taking the definitions at face value we can see considerable overlap between mobile learning and distance education. Mobile learning is in some respects broader; it encompasses learners within the boundaries of educational institutions and it encompasses individual unstructured learning driven by curiosity or necessity. Distance education, however, encompasses a more explicit and diverse blend of technologies to deliver learning and support learners, often as simple as print and post.

Looking at mobile learning in practice, other differences and other similarities emerge. In earlier articles (Traxler, 2007, and others) we have, perhaps uncritically, summarised the early achievements of the mobile learning community during its first decade. This community has demonstrated that it can take learning to individuals, communities and countries that were previously too remote for other educational initiatives. It has also shown that it can enhance and enrich the concept and activity of learning, beyond earlier conceptions, with learning experiences that are more personalised, authentic, situated and context-aware than ever before. It has shown that it can challenge and extend existing theories of learning. Finally the claim is often made that mobile learning increases motivation, especially amongst learners who would normally be considered distant, disengaged or disenfranchised, and hence improves retention and progression, the two most problematic challenges to successful distance education.

Elsewhere (Traxler, 2010a), we have laid out these achievements in more detail, saying that the mobile learning community has demonstrated, though not proved in any sense, across a wide variety of contexts, that it can:

- Enhance, extend and enrich the concept and activity of learning itself, beyond earlier conceptions of learning. This includes:
  - contingent learning, where learners can react and respond to their environment and their changing experiences, for example data collection in real-time on geography field trips
  - situated learning, where learning takes place in surroundings that make learning meaningful, for example learning about religions whilst visiting temples, mosques, churches and synagogues
  - authentic learning, where meaningful learning tasks are related to immediate learning goals, for example basic literacy or numeracy in work-based learning on the job
  - context aware learning, where learning is informed by the history, surroundings and environment of the learner, for example learning in museums, game parks or heritage sights
  - augmented reality mobile learning, where learning builds on local context supplemented by an audio or video overlay
  - personalised learning, where learning is customised for the preferences, history and abilities of individual learners or groups of learners
- Take learning to individuals, communities and countries that were previously too remote or distant, for example culturally, economically, socially or geographically, for other educational interventions to reach. This category has included addressing:

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- geographical or spatial distance, for example reaching into deeply rural areas
- sparsity, connecting thinly spread and perhaps nomadic learners to create viable communities of learners, or exploiting learning niches and perhaps the 'long tail'
- infrastructural or technical barriers, for example, areas in sub Saharan Africa, supporting those communities lacking mains electricity, secure clean buildings or land-line connectivity
- social exclusion, for example reaching students unfamiliar with and lacking confidence in formal learning and its institutions, for example the homeless, gypsies, marginal groups, those 'not-in-education, employment-or-training' (NEETs)
- physiological or cognitive different, and distant, for example supporting learning opportunities for the hearing impaired or people with dyslexia
- privacy and connection, for example helping secluded women and girls in some cultures to access informal and social learning.

The first category is essentially tightly coupled, intensive and focused in on innovative pedagogy, the second loosely coupled, extensive and addresses deficits and disadvantages, and would certainly resonate with the distance education community.

There are, however, still many obvious challenges. Some of them will also resonate with the distance education community. They include understanding how to sustain and to scale up projects; understanding how and what to abstract and to generalise from pilots; maintaining or perhaps increasing equitable and inclusive access and provision, and generating and disseminating credible, rigorous and appropriate evidence (Taylor 2006; Traxler & Kukulska-Hulme, 2005). Where the two communities often differ, and where they might learn from each other, is in their institutional relationships. To date mobile learning has usually been supported and resourced on a project basis whereas distance education seems to have a more secure foundation as ongoing provision. This edition is timely in that mobile learning now needs to move onto more secure foundations.

These remarks should make it possible to explore the relationships with distance education and also to locate the contributions to this special edition.

For those open and distance learning institutions with a large, well-resourced and sophisticated infrastructure, staff and student populations, it is possible to adapt and adopt any of these achievements. Indeed, the Open University in the United Kingdom, the Athabasca University in Canada, University of South Africa (UNISA), the Indira Gandhi National Open University (IGNOU), and other distance learning departments of universities in the 'developed' parts of the world have themselves initiated many of the developments in mobile learning. For open and distance learning institutions without the necessary capacity and resources and perhaps with more pressing objectives, progress has been much slower. This special edition is an attempt to indicate to all of these institutions what might become possible, especially as we see dramatically increasing coverage by networks; increasing, almost universal, ownership of handsets by learners; increased capacity and functionality of devices and steadily falling real costs for both handsets and connectivity.

Mobile learning in the 'developed' regions of the world has matured and consolidated. It now has a peer-reviewed academic journal, the *International Journal of Mobile and Blended Learning* and a professional research body, the International Association for Mobile Learning (http://mlearning.noe-kaleidoscope.org/). It has a large and vibrant

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online community using the Handheld Learning forum, and several prestigious international conferences such as mLearn (Ally 2006; Traxler, Riordan, & Dennett, 2008). There are some key emerging working texts (Kukulska-Hulme & Traxler, 2005; Metcalf, 2006; Joint Information Services Committee [JISC], 2005; Kukulska-Hulme et al 2005) and emerging guidelines for practitioners (see for example, O'Malley, et al., 2004). Mobile learning has gained clarity about the significant issues (see, for example, Sharples, 2006, defining the 'big issues') and a more defined research agenda (see, for example, Arnedillo-Sánchez, et al., 2007) and an awareness of the need for ethical guidelines and frameworks. Within the United Kingdom specifically, there has been considerable public sector investment: £4m to £5m per annum for three years to date in the vocational sector in the MoLeNET programme (2007) for example, and large-scale projects in the primary schools of Bristol and Wolverhampton (Wolverhampton City Council, n.d.). The ACL (Adult Continuing Learning) community have been industrious and ingenious on a negligible resource base (Dawson, 2007). It is likely that much practitioner activity now takes place undocumented and only informally or locally evaluated. Much of this work and many of the issues addressed are likely to be recognisable in a distance education context. The current contributions would as easily fit into the mobile learning publications and projects.

There is also, however, a growing lack of communication and connection between the practitioner community, the policy and technology vendor communities on the one hand, and the research community on the other; developments in practice are increasingly driven by public understanding and policy-maker understanding of the affordances of the technologies (as perhaps portrayed by the press and the technology vendors) rather than the considered evidence of educational researcher community. This state of affairs may make it difficult for other educational communities, such as that of open and distance learning, to see beyond mobile learning as under-theorised practices and projects addressing the immediate problems of distance and delivery.

The papers

Having provided an introductory framework for this special edition, we are now better prepared to turn to the individual papers. As is often the case, several of the papers in this edition report on specific projects but the first, "Literature on the safe and disruptive learning potential of mobile technologies" by Tiffany Koszalka and G.S. Ntloedibe-Kuswani, reviews the mobile learning literature in order to explore and unpack the topic of 'disruption' and shows its relevance to distance education. They describe disruption in terms of a shift in the balance of control and move the debate on by looking at a dichotomy between 'safe learning', characterised as open access to resources, and 'disruptive' learning, characterised as collaborative and immersive. They start, however, by defining and describing mobile learning, using evocative phrases, "the learners do not stay in a fixed location learning alone or together nor do they use specific resources presented to them at one point in time. The learners scatter to explore. They review, choose, and access informational or human resources they need immediately when they have questions or ideas, regardless of where they are located." Throughout the evolution of mobile learning their central theme, the theme of disruption, has surfaced, sometimes in the sense of 'nuisance', though in practice this aspect is not something to trouble the distance education community, sometimes as something more unsettling, profound and threatening. Mobile devices, in enabling

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learners to generate, transmit, store and consume images, ideas and information and to create virtual communities and spaces of shared interests, thereby create parallel, local, decentralised and potentially subversive alternatives to the relatively static and unchanging institutions of mainstream education (see Sharples, 2002, and Traxler, 2010c, for earlier discussions). These developments can be read as challenging the hegemony of the institutions of formal education but their departments of open and distance learning, with more permeable boundaries and greater links into the wider world and across to outside communities, may not find these various connotations of 'disruption' quite so disconcerting.

Finally the authors reiterate some of the challenges identified earlier, being particularly critical of methodology, research design and evaluation of mobile learning. They add an extra challenge, that of "disconnects between conceptual frameworks of well-designed technology integrated instruction and the field work examples". They flag up the need for larger studies but nevertheless they suggest we "just do it". The other four papers contribute to the literature of such studies.

Elizabeth Beckman's paper, "Learners on the move: Mobile modalities in development studies", deals with the educational needs of development workers in settings as diverse as outback Australia, East Timor, Egypt and Afghanistan. Echoing our earlier points about authentic and situated learning, she comments that, "mobile technologies offer opportunities for ongoing access to distance education that can be pursued off-campus and transnationally with the same peer-centred approaches available on-campus, enhancing authenticity of both content and context." Three key issues are explored in the paper, namely the implications of variable Internet access and quality; how students use their mobile devices; and how mobile learning allows consistent engagement with other professionals, despite geographical, cultural or socio-political isolation. The paper draws on much of the mainstream literature of mobile learning and of 'development' studies and shows how mobile technologies underpin successful attempts to address this isolation, one of the main and defining problems of distance education, and furthermore deliver authentic and situated learning in diverse and challenging environments. Beckman argues forcefully that mobile learning brings substantial qualitative improvements to distance education, mentioning motivation as a bonus.

Jill Taylor and colleagues, in "Developing a mobile learning solution for health and social care practice", report on the ALPS project based in the north-east of England. The Assessment & Learning in Practice Settings (ALPS) Centre for Excellence in Teaching & Learning (CETL) worked towards a framework of interprofessional assessment of common competences in the health and social care professions. It was large-scale collaborative programme involving five UK Universities, 16 professional groups and over 1000 users, using mobile devices to deliver learning resources and assessments to enrich, enhance and extend practice learning. The authors' focus is the mobile assessment processes that were developed by ALPS and the shared services platform that enabled it to be delivered on a mobile device. They discuss the potential transferability of this mobile model to distance education. For both distance education and mobile learning communities this is an important paper in that it addresses the vexed question of assessment. This is often an overlooked or unduly conservative aspect of teaching and learning, holding back the more imaginative achievements mentioned earlier. The paper is clearly at the intersection of mobile learning and distance education and is an exemplar for work of its kind. The authors conclude that the approach and processes adopted by ALPS

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have the potential to be used more widely across the university sector to bridge the divide between campus and distant work-based learning.

K. Balasubramanian and his colleagues have contributed a paper "Using mobile phones to promote lifelong learning and empowerment among rural women in Southern India", describing a large-scale and substantial Commonwealth of Learning project that used simple mobile phones. This is significant for the mobile learning community in addressing scale and size and shows mobile learning can be a vital means to overcome gender inequity and Internet access problems in education and training. The authors bring Silverstone's (1992) domestication of technology framework to bear as the way of understanding the technology-gender relationship. This gives a systematic approach to analysing the social shaping of technology and shows the place of education and educational technologies in the wider discourses of society and technology, and in this case shows their role in 'development' issues.

A group of academics from the Christian Medical College, Vellore, India, and Tufts University in the United States contribute a paper entitled "Clinical training at remote sites using mobile technology: An India-USA partnership". This too addresses issues of scale (and of embedding and institutionalisation) and shows a successful process of iterative research, design, development and testing that give a model of learning based on student-articulated needs. The paper describes the adaptation of a powerful in-house open source knowledge management system to a mobile mode. The authors address a common dilemma, namely how to develop appropriate thoughtful mobile learning from existing desktop versions. The system facilitated the creation, capture, sharing and leveraging of information to support health sciences education and training, specifically supporting active and distance learning with tools for case-based learning, self-assessment, quizzes, problem-based learning, and competency-based learning and assessment. This paper is much nearer to the literature of mobile learning in describing the development, deployment and integration of a novel mobile technology to support learning but again in a 'development' context.

Clearly the discourses of mobile learning are not the only ones represented in distance and open learning. Several of the papers in this special edition draw theory less from the mobile learning discourses but from the discourses of 'development' or from the broader debates of technology and society. This is valuable and suggests caution when developing overly prescriptive or exclusive definitions of our various disciplines, especially as they demonstrably overlap in so many respects.

These papers, or rather the last four, reporting on projects, necessarily have an over-riding practical dimension, a need to deliver and support, a need to exploit mobile technologies, even where they explicitly buy into the rhetoric, the ideology or community of mobile learning; they are mobile learning enacted even if not mobile learning espoused.

The bigger picture

If we step back and look at the bigger picture and the wider environment, it begins to look as though the relationship between mobile technologies and distance learning is not simply the one that is mediated by mobile learning. There is an emergent 'mobilities' or 'sociology of mobility' research topic (Sheller & Urry, 2006; Urry, 2007); this has significant long-term implications for learning and for education (Traxler, 2010b).

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We have already alluded to the changing nature and significance of knowledge as people are able to generate and produce ideas, images and information that are specific, personal and local and then store, transmit and discuss them within virtual, transient and possibly hermetic communities, away from centralised production and control, and on technologies that they – not the institutions – choose, own, value, understand and control (Traxler, in press). Although this could be perceived as a threatening development for the already declining hegemony of conventional universities, schools and colleges and their curricula, it is perhaps less threatening for open and distance learning with an inherently more flexible attitude to the authority of learning. It does nevertheless create more communities and spaces that potentially challenge monolithic views of learning, education and knowledge.

The notions of time, space and place, and implicitly of distance and presence, are also changing as mobile and connected communities and people find their online worlds no longer separate and parallel to their real worlds. Again, this may be disconcerting for formal institutions like colleges, universities and schools, governed and defined by buildings, schedules, timetables and calendars but perhaps much less so for distance education, that is loosely-coupled, dispersed, asynchronous and remote.

Although e-learning technologies may already have reconfigured the notion of distance in distance education, they have only done so in ways constrained by infrastructure, buildings and hardware. The mobility and connectedness afforded by near universal mobile phones are a significant step beyond the erosion of distance and reconfiguration of space afforded by desktop technologies.

In a recent reflection, Spector (2009) talks of three themes, "(a) the multiple dimensions of distance involved in modern distance learning, (b) the expansion of technology in distance learning and (c) the gradual erosion of distinct boundaries in between distance and other forms of education" (p. 157). This adds language and culture into the current dimensions of distance, perhaps echoing our earlier account of mobile learning as reaching across not only spatial and geographical distance but social, economic and culture distance. It also recognises the existence of virtual spaces afforded by desktop technologies but while these technologies do indeed create virtual spaces separate, substantial and distinct from real spaces, mobile technologies multiply and weave these spaces, the real and the virtual, seamlessly together.

This special edition captures the growing potential synergy between mobile learning and distance education and it does so at a time when mobility and connectedness are starting to transform many aspects of most societies around the world.

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References

Ally, M. (2006). 'Developing materials for mobile learning'. Paper presented at mLearn 2006 Conference, Mobile technology: The future of learning in your hands. Retrieved from http://www.mlearn.org.za/CD/BOA_p.07.pdf

Arnedillo-Sánchez, I., Sharples, M., & Vavoula, G. (Eds,). (2007). Beyond Mobile Learning Workshop. Dublin: Trinity College Dublin Press.

Benson, R., & Samarawickrema, G. (2009). Addressing the context of e-learning: Using transactional distance theory to inform design. Distance Education, *30*(1), 5–22. doi: 10.1080/01587910902845972

Dawson, D. (2007). *Handheld technologies for mobile learning.* Leicester: NIACE.

Joint Information Services Committee. (2005). *Innovative practice with e-learning: A good practice guide to embedding mobile and wireless technologies into everyday practice.* Bristol: Author.

Keegan, D. (1980). On defining distance education. *Distance Education: An International Journal, 1*(1), 13–36. doi: 10.1080/0158791800010102

Keegan, D. (2005). The incorporation of mobile learning into mainstream education and training. In *Proceedings of mLearn 2005: 4th World Conference on mLearning,* Cape Town, South Africa. Retrieved from http://www.mlearn.org.za/CD/papers/keegan1.pdf

Kukulska-Hulme, A., Evans, D., & Traxler, J. (2005). *Landscape study in wireless and mobile learning in the post-16 sector* (Technical Report). Bristol: Joint Information Services Committee.

Kukulska-Hulme, A., & Traxler, J. (2005). *Mobile learning: A handbook for educators and trainers.* London: Routledge.

Metcalf, D.S. (2006). *mLearning: Mobile learning and performance in the palm of your hand.* Amherst, MA: HRD Press.

MoLeNET. (2007). *The impact of mobile learning: Examining what it means for teaching and learning.* London: Learning & Skills Network.

O'Malley, C., Vavoula, G., Glew, J., Taylor, J., Sharples, M., & Lefrere, P. (2003). *Guidelines for learning/teaching/tutoring in a mobile environment* (Mobilearn project deliverable). Retrieved from http://www.mobilearn.org/download/results/guidelines.pdf

Parsons, D. (Ed.). *International Journal of Mobile and Blended Learning.* (n.d.). Retrieved from http://igi-global.com/Bookstore/TitleDetails.aspx?TitleId=1115

Quinn, C. (2000). mLearning: Mobile, wireless, in-your-pocket learning. LineZine, Fall. http://www.linezine.com/2.1/features/cqmmwiyp.htm

Sharples, M. (2002). Disruptive devices: Mobile technology for conversational learning. *International Journal of Continuing Engineering Education and Lifelong Learning, 12*(5/6), 504–520. doi: 10.1504/IJCEELL.2002.002148

Sharples, M. (Ed.). (2006). *Big issues in mobile learning.* Nottingham: Kaleidoscope Network of Excellence, Mobile Learning Initiative.

Sheller, M., & Urry, J. (2006). The new mobilities paradigm. *Environment and Planning A, 38,* 207–226.

Silverstone, R., Hirsch, E., & Morley, D. (1992). Information and communication technologies and the moral economy of the household. In R. Silverstone & E. Hirsch (Eds.), *Consuming technologies: Media and information in domestic spaces* (pp. 15–31). London: Routledge.

Spector, J. M. (2009). Reconsidering the notion of *distance*. *Distance Education, 30*(1), 143–162. doi: 10.1080/01587910902846004

Taylor, J. (2006). 'Evaluating mobile learning: What are appropriate methods for evaluating learning in mobile environments?' In M. Sharples (Ed.), *Big issues in mobile learning* (Report of a workshop by the Kaleidoscope Network of Excellence Mobile Learning Initiative, University of Nottingham (pp. 24–26). Nottingham: Kaleidoscope Network of Excellence, Mobile Learning Initiative.

Traxler, J. (2005). Mobile learning – it's here but what is it? *Interactions, 9*(1). Retrieved from http://www2.warwick.ac.uk/services/ldc/resource/interactions/archive/issue25/traxler

Traxler, J. (2007). Defining, discussing and evaluating mobile education. *International Review of Research in Open and Distance Learning, 8*(2). Retrieved from http://www.irrodl.org/index.php/irrodl

Traxler, J. (2010a). Mobile people, mobile societies, mobile cultures not just mobile learning. In A.I. Chib (Ed.), *Proceedings of the ICA Mobiles Preconference,* Nanyang Technical University, Singapore.

Traxler, J. (2010b). Sustaining mobile learning and its institutions. *International Journal of Mobile and Blended Learning, 2*(4), 129–138. Retrieved from http://www.igi-global.com/Bookstore/TitleDetails.aspx?TitleId=1115&DetailsType=Description

Traxler, J. (2010c). Will student devices deliver innovation, inclusion & transformation?, *Journal of the Research Center for Educational Technology, 6*(1), 3–15. Retrieved from http://www.rcetj.org/index.php/rcetj

Traxler, J. (in press). Students and mobile devices. *ALT-J, Association for Learning Technology Research Journal, 18*(3).

Traxler, J., & Kukulska-Hulme, A. (2005). 'Evaluating mobile learning: Reflections on current practice'. In *Proceedings of mLearn2005: 4th World Conference on mLearning,* Cape Town, South Africa. Retrieved from http://www.mlearn.org.za/CD/BOA_p.65.pdf

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Traxler, J., Riordan, B., & Dennett, C. (2008). *Proceedings of the mLearn2008 Conference: The bridge from text to context.* Wolverhampton: University of Wolverhampton. Retrieved from http://www.mlearn2008.wlv.ac.uk/

Urry, J. (2007). *Mobilities.* Cambridge: Polity.

Wolverhampton City Council. (n.d.). *Learning2Go.* Retrieved from http://www.learning2go.org/

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