

## Invited Commentary

# Mobility and Learning: The Challenge of Differentiating Between Being ‘New’ and Being a ‘Novelty’

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Every day, billions of people across the world access the Web. It has become such a part of our lives and cultures that it has become conceptually ‘transparent’; the Web just *is*. Yet initially, it was hard to see or understand exactly how the Web’s underlying technology might be useful. Its integration of hypertext, for example — one of its key technological features — posed a significant conceptual challenge for early designers and users. The notion that someone might manoeuvre through media in a nonlinear way, moving from one piece to another via embedded links, was hard for early designers and authors to grasp or convey. In fact, what is now intuited so easily had to be explained carefully when hypertext first emerged from the labs a few decades ago. Consider this *New York Times* article introducing Apple’s HyperCard, a hypertext tool that premiered in 1987 and served as one of the inspirations for the Web’s development and structure:

Hypercard [sic] is based on hypertext, a concept that has been a focus of research in computer science laboratories for two decades. Hypertext allows a user to jump through a databank in several ways. A person reading a notecard containing information about Abraham Lincoln, for example, might come across a reference to the Civil War. He could immediately jump to a notecard containing information about the Civil War, which might mention slavery. He could then jump to a card about slavery, and so on.

*Pollack, 11 August 1987*

From our vantage thirty years later, this quaint (and surprisingly flippant) description seems entirely unnecessary. Indeed, it might be difficult to understand why the *Times* felt the need to devote so much space to such a ‘simple’ concept. Reading the article, it is easy to smirk at the dismissive assessment by Chris Veal (‘Western region director of microtechnology for Arthur Young & Company’) that the lack of linear structure would render hypertext unable to ‘compete with commercial database programs,’ limiting its use to the esoteric, niche projects of nerdy eccentrics.

Eventually, of course, such explanations of the technology became unnecessary. People young and old, the tech-expert and the newbie, the serious and the frivolous all discovered that the Web’s

fundamentally fluid structure enabled powerful and productive (and yes, sometimes distracting) possibilities. What at first seemed exotic and incomprehensible eventually became quotidian. It did so because of the concerted effort of experts, technologists, popularisers, and users, who all worked in parallel to develop the concepts and language — the ‘idiom’ — that helped even more people understand and take advantage of this important technology.

As you read this collection’s studies about mobility’s use in education, you may be struck by the diversity of research and labour represented here. Some studies, like Çelik, Baran, and Sert’s exploration of the role mobile devices can play in professional development, demonstrate still developing explorations that set a path for future research. Others, like Koole’s carefully framed and situated sociomaterialist model for evaluating the integration of mobile technology or Caldwell’s discussion of the ways mobility and ‘multimodal learning’ impact teaching and learning, examine the more complex impact mobility can have on educational practice. What is evident in all of this work, however, is that ten years after Apple’s iPhone offered the first truly unfettered mobile access to the Web (and thus arguably the first modern mobile device), we are still developing the ‘idiom’ for mobility in education.

My own interest and work in mobility grew from the promise that my colleagues and I saw in making the walls of our classrooms ‘permeable.’ What would happen, we wondered, if the learners in our courses could integrate real-world social connections and real-world experiences — along with real-world venues and contexts — to the rapidly swelling ocean of information offered by the Web? Our 2008–2012 mobility initiative at Abilene Christian University, in Abilene, Texas, the first in the world to give every student one of Apple’s iOS devices, started with ambitious goals and much potential. Having already piloted and studied the impact of a range of mobile devices for teaching and learning, we felt well prepared to design a successful mobility-enhanced learning initiative at the beginning of what many saw as mobility’s ‘epoch.’ Yet although we spent the year prior to our launch in pilot projects involving more than a quarter of our teaching staff, although we designed and carried out targeted professional development focused around mobile pedagogies for the entire staff, and although we made provision each year for funded ‘mobile learning fellows’ to encourage, support, and expand meaningful research, the initiative did not last. It failed not because of technological problems nor because we were unable to find compelling and transformational educational applications for mobility. It failed because we were unable to establish a meaningful and sustainable ‘community of practice’ (in terms originated by Lave and Wenger (1991)). We simply could not bridge the significant gap between the few dedicated explorers and our broader academic community. Despite our best efforts, we were unable to provide a clear avenue so those new to mobile-enhanced pedagogies could move from ‘peripheral participation’ into legitimate identification with and participation in the community’s core praxis.

One of the chief goals of this present volume is to help pave that avenue, offering insights that build productive connections between mobility and educational practice. However, it is not enough if readers merely consume the research presented here; you must join and extend it. As Etienne and Beverly Wenger-Trainer (2015) delineate, ‘communities of practice’ develop through a range of activities: problem solving, requests for information, seeking experience, coordination and strategy, discussing developments, mapping knowledge and identifying gaps, and documenting projects (among others). All of these are necessary to the formation of a functional community, and they are the sorts of activities this volume hopes to provide and spark. The editors and researchers here aim to welcome readers into a seriously important if also still largely nascent field of inquiry and practice — one likely only to become more fruitful ... and more crowded. With a global median of 67% of people now reporting at least occasional internet use according to the Pew Research Center (2016), and with smartphone ownership ‘skyrocket[ing] in many countries since 2013,’ especially those designated as ‘developing,’ understanding how to integrate mobility productively in teaching and learning is more essential than ever. If a decade of the era of ‘true mobility’ has proven anything, it is that use and reliance on these devices does not diminish. It only increases as they become more

powerful and pervasive. The likelihood that future teachers will be able to ignore their impact, let alone continue in a pedagogical practice that disregards mobility's use for learning, research, and professional development, is sensationally small. Yet while many education programs are emphasising mobility in their training of new teachers and searching for ways to understand, integrate, and use mobile devices more effectively (see, for example, enumerations by Baran (2014) and West (2013)), in actual practice, many schools are still treating mobility as a novelty, irrelevant for day-to-day teaching and learning.

For example, as Theresa Cullen and Tugra Karademir note in the first paper, student intern teachers often find themselves in 'communities of practice' whose values differ from those at their equipping academic institutions. Indeed, as several researchers in this volume describe, participation in these 'other' communities can promote a dismissive attitude toward using technology for tasks other than facilitation of information delivery or other 'teacher-centric' applications. As Cullen and Karademir report, even in the face of new governmental standards and expectations for technology integration (such as the US Department of Education's 2016 National Educational Technology Plan, which they point to in their study) and even for student teachers who had positive experiences with technology at their equipping institutions, the pressures of existing teacher training models can yield resistance or even outright abandonment of progressive technological integration. As the researchers discovered, this has less to do with malice or a studied determination that integrating technology is detrimental and more to do with long-established methods and the pressures of the teaching intern context. As they note, the chief factors working against technology integration are cooperating teachers' 'lack of knowledge, fear of technology, lack of self-confidence, and [...] limited time for using and planning with technology.'

A similar pattern emerges in Çelik, Baran, and Sert's study. Here, the researchers delineate the complex challenges in using new evaluation methods for teacher observation and professional development. Whilst the researchers believe that 'new' mobile and video-based tools show promise, they also note that difficulties arising from both a lack of experience setting them up and a lack of experience using them for evaluation obscures these tools' benefits. As they conclude, use of 'these tools can [...] benefit [...] from pre-service teacher education or teacher training programs that focus on improving observation skills of teachers [...] with an effort to integrate technology into their curriculum.' In other words, a lack of established and well-defined practices and applications using mobile technologies for education can build a barrier to the adoption and integration of these technologies, creating a sort of vicious cycle: the lack of effective and well-defined practices keeps educators from experimenting with emerging technologies, and this, in turn, leads to a lack of effective and well-defined practices. Tied with the conclusions Cullen and Karademir report, this results in a stultifying inertia that works against integrating mobility for many teachers and schools.

One can see yet another manifestation of this vicious cycle in Jordan Schugar's exploration of the pedagogical uses and benefits of eTexts. As Schugar's research demonstrates, unclear definitions frequently combine with mixed or haphazard practices to obscure the benefits offered by these technologies, discouraging those considering the educational use of eTexts from integrating them in their work. As Schugar argues, some of this difficulty arises from a monolithic understanding of these new technologies — an inability to see beyond the broad category of 'eText.' He writes, 'Too often research regarding students' eReading experiences and abilities are being lumped together, without regard to the significant differences that might exist as a result of readers' age or ability and the type and purpose of the reading.' Worse still, existing research also tends to lump together all of the devices on which eTexts can be served, despite vast differences in the contexts where these devices can be used or the purposes they serve within those contexts. Is it really insightful or valid to assess the efficacy of incorporating eTexts without differentiating between how they might be used on a mobile smartphone and how they might be used on the screen of a desktop computer? Schugar's research serves as a cautionary warning about the pitfalls and confusion that can occur when an 'idiom' is still imprecise and forming.

What all of these researchers identify is a pattern whereby flaws in the conceptualisation, design, and execution of mobile integration in education can lead to deficiencies that are then misattributed to the technology itself rather than to a flawed process. One of the tasks our ‘community of practice’ must perform, therefore — and one this volume seeks to address — involves more effective design of pedagogical and research projects to offer clearer, more precise definitions and more lucid and comprehensible results. In other words, even after a decade of the ‘new mobility,’ we still find ourselves establishing the frameworks on which the future of educational mobility can be realised and built.

Yet challenges in integrating mobility for teaching and learning also present opportunities for significant contributions that will shape the future of education. This is perhaps nowhere better illustrated than in Burden and Kearney’s ongoing project to design an ‘educator toolkit’ for the mobile learning age. Like the previous researchers, Burden and Kearney cite the

*shortage of pedagogical and theoretical models that can guide teacher educators in designing m-learning experiences, and a need to develop a shared language for describing emerging pedagogies [...]. Indeed, there is an urgent need to provide practical strategies that will support teacher educators in fully exploiting mobile learning [...].*

By describing the contents of their toolkit as well as the rationale they used to select and shape its elements, Burden and Kearney are offering fellow educators a map for navigating out of the self-reinforcing dismissal of mobility noted by many of the other researchers in this volume. In effect, their toolkit works to solve both the practical and theoretical aspects of this problem. For a profession that too often views mobility as a nice-to-have but still extraneous bolt-on, this sort of articulation is essential. Until our fellow educational practitioners understand both the organic ways mobility connects with our instructional work and the theoretical validity of the educational purposes behind integrating it, there is little hope it will be seen as anything but a ‘novelty.’

Helen Alice Caldwell’s review of the ways the University of Northampton is incorporating mobile devices in teacher education offers yet another substantiating argument, presenting a host of ways that mobility is reshaping the work and culture in her university’s teacher education program. In her paper, she describes how mobility has ‘extend[ed] learning beyond taught sessions,’ in powerful ways, facilitating — and requiring — a shift in teacher/learner roles. As she delineates, the peer-to-peer community discussions empowered by the school’s multimodal use of iPad has resulted in a shift from pedagogy to heutagogy. This shift, in turn, has created new opportunities for learning and new forms of engagement for the program’s student teachers. As she writes,

*By giving learners control over the time, pace and place of their learning, and by providing opportunities for authentic engagement with the physical world, the iPads have acted as a bridge between formal and informal learning, and across disciplines in primary education. [...] The emphasis on social learning has multiplied learning opportunities and has led to the development of a shared common purpose between academics, pre- and in-service teachers. In this way, mobile technologies have the potential to prompt social transformation leading to innovative pedagogical practice.*

However, although this cultural shift has presented important benefits for learning, it also outlines one of the chief impediments to the wider adoption of mobility in education. The transformation of teacher-centric pedagogies entailed by mobile adoption often means that those who embrace such pedagogies may view mobility as a kind of threat — as several of the other studies in this volume have borne witness. Such resistance can stem not only from a lack of familiarity with mobile-enhanced teaching strategies or from the pressure and inertia of established procedures and requirements, but from an unwillingness to shift the dynamics toward a more learner-centric model.

Marguerite Koole's 'Framework for the Rational Analysis of Mobile Learning' (FRAME) offers another important tool for assessment — and another important observation about the challenges of incorporating technologies and approaches that are still developing. Designed to help 'teacher educators and teachers-in-training understand how the material and the human are inherently intertwined,' Koole's model brings together technological, cultural, and human factors, reminding us that what we privilege becomes what we 'see.' Unlike Koehler and Mishra's more static 'TPCK' model (2009), each element in Koole's Venn diagram, comprised of 'learners, society, and mobile technologies,' is understood to be 'in a constant state of performativity and becoming (of multiple patterns of relations); [...] simultaneously fluid (variable), networked (connected), and discrete (bounded).' By defining them dynamically and performatively, she seeks to 'escape [the] social and/or technological determinist positions' that are behind both what I would call a 'magic beans' approach to technology integration ('just sprinkle in technology and it will magically grow into something that takes learners to the heavens!') and the corresponding 'emperor's new clothes' critique ('mobile technology is a novel distraction that will ultimately prove a great embarrassment to those who have been foolish enough to adopt it'). Koole's dynamic, interrelated model, in which 'the material and discursive are inseparable, contingent, and always becoming' reminds us that we cannot speak of any technology separately from the practices that surround it and are facilitated by it nor from the human implications of its use. Seen in this broader, more (inter)relational way, Koole's assessment offers an organic, contextually meaningful response to those who would dismiss mobility as either a 'novelty' or a 'bolt-on.' However, it also illustrates the complexity that can prevent people from embracing mobility for learning. Like hypertext thirty years ago, mobility is still exotic, lacking the 'idiom' that can clarify and, in clarifying, empower its use.

As Koole's work reminds us, however, even the development of that 'idiom' will be performative and dynamic, inherently linking technological, cultural, social, and human aspects. This is nowhere better illustrated than in Mac Mahon, Ó Grádaigh, and Ní Ghuidhir's study. As their survey of newly qualified teachers reports, 'tensions were evident between the interactive, pupil-centered approaches afforded by iPad and the deeply embedded examination culture of secondary schools with its inherent focus on measurable output in the form of results.' Mobile technology cannot be viewed separately from either the school culture or the practices that validate and undergird it. Even when mobility seems to offer advantages congruent to the school's self-proclaimed values, those 'values' can stand in contradiction to the central activities that dominate a school's culture. Put another way, this means that the proclaimed values of a school may be disconnected from its practiced values. The researchers' citation of a survey by Cosgrove et al. (2013) on the use of ICT in Irish schools is telling:

while the majority of teachers claimed to hold constructivist views, traditional teacher-directed practices were nevertheless the dominant pedagogical orientation in most schools. When asked, for example, how often they used ICT for different purposes during class time, 80% of teachers in primary and post-primary schools indicated that it was employed "often or always" to present information or give class instruction to pupils (p.122). Frequently cited barriers to the effective use of ICT were lack of time, pressure to cover prescribed curricula and, ranking highest for post-primary teachers, pressures relating to State examinations. The report concludes that if teachers "are traditional in their pedagogical practices, then technology will be used in traditional ways" (Cosgrove et al., 2013, p.196).

What is most interesting is that this resistance to mobility and its affordances came not only from established teachers working in the schools where new teachers were placed, but also from the students they were teaching. Faced with a culture that emphasises testing and exam scores for placement, even the students may turn against the integration of mobile technologies. As year one teacher Veronica says, 'Classes are looking at me and saying "Why are you not giving us notes? Why are you trying to do fun things with us?"' Despite the successes and advantages offered by mobility and experienced by the respondents in Mac Mahon, Ó Grádaigh, and Ní Ghuidhir's study, significant barriers remain.

Perhaps the most alarming and challenging view that Mahon, Ó Grádaigh, and Ní Ghuidhir's research unearthed is the notion that expertise in integrating mobile pedagogies is non-transferrable

and device-specific. Thus, when newly qualified teachers found themselves in schools that used devices other than iPad, their experience and proficiency were considered less relevant — or even irrelevant — by their fellow teachers. Such an attitude is perhaps the most extreme result of a ‘bolt-on’ mindset. Rather than considering mobility as a legitimate field in which teachers might develop wide-ranging and widely applicable skills and expertise, this view suggests that it is a narrowly applicable and transitory pursuit — a ‘novelty’ that will one day pass in favour of the Next Big Thing.

For those of us who have worked to advance the educational applications of mobility, who have seen the new kinds of engagement that mobility can unlock, and who have experienced the productive shift mobility can bring to teacher/learner relationships, such a view seems short-sighted and narrow-minded. The research in this volume seeks to correct such views. For new mobile educational practices to flourish, those of us who see their promise will have to build productive contexts and cultures, establishing the ‘idiom’ that will describe and empower mobility’s broader adoption. We will have to conduct the research that establishes mobility as a mature domain for the formation of comprehensive and transferrable expertise. Faced with the complex intersections of the diverse elements impacting mobile adoption, and given their fluid and convergent nature, those of us who understand the holistic implications of mobile learning will have to form a ‘community of practice’ where others can first observe, then engage in ‘legitimate peripheral participation,’ and finally join the community as fully participating members. This means that all of us implementing and studying mobility in education have a shared connection — and a shared responsibility. As Etienne and Beverly Wenger-Trayner, (2015) outline,

*A community of practice [...] has an identity defined by a shared domain of interest. Membership therefore implies a commitment to the domain, and therefore a shared competence that distinguishes members from other people. [...] In pursuing their interest in their domain, members engage in joint activities and discussions, help each other, and share information.*

This is the purpose of the current volume: to present research at varying levels of complexity about mobile initiatives at varying levels of realisation, welcoming those who can see past mobility’s ‘novelty’ to what lies behind: a new way of learning, teaching, collaborating, and engaging that has already begun shaping the future of education.

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