Chapter 13
Mobile Learning in K-12 Education: Personal Meets Systemic

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Abstract This paper investigates one school's journey towards integrating mobile learning within its institutional structures. This includes a comparison of the school's objectives against mobile learning affordances. The approach takes into account the cultural contexts, dynamic nature of digital change, and school structural challenges that impact on providing worthwhile education outcomes. Several in-school case reviews on mobile learning use within the school look at mobile learning integration. As well as providing insights for other schools to consider, possible ways forward are presented for better understanding the dynamic relationship between mobile learning and school intentions, as well as challenges that go with ever-evolving digital technologies.

13.1 Introduction

All K-12 schools contain common characteristics, consideration of which can assist others to widen understanding. As well, there are particular aspects that are the product of unique historical and cultural developments. Digital meanwhile continues to evolve in depth, breadth and preference. Research into mobile learning has put forward contentions for new or enhanced learning. Bringing Digital and School together means both opportunities and challenges, as personal learning interacts with systemic education in new ways.

When considering the impact of mobile learning on any educational institution, as for any technology, it is important to align with cultural understanding. Recent history is littered with new technologies that have failed to meet advocate contentions for schools. Cuban (1986, 2001, 2014) has summarised such shortfalls. Yet within the wider community mobile technologies such as smartphones are in the

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ascendancy (Columbus 2014) and bring with them demands for educational consideration as mobile learning platforms.

This paper details one school's approach towards considering and integrating mobile learning into its teaching and learning structures. It includes insights into an approach that has evolved with due consideration of mobile learning assertions, while working within the practicalities of a contemporary school system. While not a formal research study, it is provided as a starting point for more rigorous consideration of how mobile learning might be approached to progress school-based learning. At the heart remains a belief that digital can add value to learning through personal interactions with digital technologies, as put forward by Laouris and Eteokleous (2005) for mobile learning, and going as far back as Papert (1980).

13.2 Defining Mobile Learning

Differing interpretations of mobile learning, and what effect mobile devices will have on teaching and learning, have been an ongoing discussion for over a decade within the research community (Liu et al. 2014a, b; Laouris and Eteokleous 2005; Craig and Van Lom 2009). Some see mobile devices as distinct from personal computers because of their ubiquity and portability (Shuler et al. 2013), with Laouris and Eteokleous (2005, p. 2) identifying use of the term mobile "as synonymous to a mobile phone". Sharples (2009) draws a clear distinction between mobile learning and classroom use of desktops. He also provided a strong framework for defining mobile learning:

- May be mobile (but not necessarily if mobile devices are being used in designated spaces)
- May involve learning in non-formal settings
- May be extendable and interleaved across time and space
- May involve use across a variety of personal and institutional technologies
- Presents ethical challenges if shared access a requirement
- Can be evaluated by addressing "usability (will it work?), effectiveness (is it enhancing learning?) and satisfaction (it is liked?)" (Sharples 2009, p. 22).

Sharples (2013) also identified critical success factors as technology availability, institutionalised support, connectivity, (curriculum) integration and (learning) ownership. Laouris and Eteokleous (2005, p. 2) went on to differentiate between e-learning as relating to "multimedia, interactive, hyperlinked, media-rich environments", with mobile learning referring to the "spontaneous, intimate, connected, informal, lightweight, private, personal". They conclude that mobile learning leads to new relationships of time, space, learning environment, content, technologies, user attributes, and process. Liu et al. (2014b) updated this to focus on affordances available through mobile devices: flexibility, accessibility, interactivity, and motivation and engagement. Similarly, Baran (2014) lists mobility, access, immediacy, situativity, ubiquity, convenience and contextuality as overlapping characteristics of

mobile learning. Kearney et al. (2012) sought to formalise this by putting forward mobile learning based on three primary affordances based on Time-Space considerations: authenticity, collaboration and personalisation; each linked to sub-considerations:

- Authenticity: context, situation
- Collaboration: conversation, data sharing
- Personalisation: agency, customised.

Related to school education, Churchill and Churchill (2008) provide a good list of mobile learning affordances: multimedia access tool, connectivity tool, capture tool, representation tool and analytical tool. But, as McFarlane (2015) points out, technology cannot do this on its own, and as Baran (2014, p. 17) concedes, "the diversity of research on mobile learning has made it difficult to generate a single definition or to determine generally added benefits". Laouris and Eteokleous (2005, p. 1) warn that the term can depend on "who is asking, and what the context is".

13.2.1 Mobile Learning in Schools

From within the school education sector, there is strong support for the potential of mobile learning in schools as reflected in recent New Media Consortium (2013, 2014) *Horizon Reports*. These identify mobile learning as within 12 months of general adoption in 2013, going on to identify such learning as a key element of BYO adoption, personalised learning, cloud computing, gamification and wearable technologies in 2014. Here no distinction is made between the levels of device mobility.

Clarke and Svanaes (2014) provided an updated review on research into the use of tablets in K-12 education. They concluded that while there is need for more research, some common themes are emerging. These include the portable nature, access to information, interaction with personalised learning content, cost advantages and ease of use. They drew on the UNESCO (2012) definition (Shuler et al. 2013) as learning arising from use of mobile technologies such as mobile phones, smartphones, eReaders and tablets. However, Clarke and Svanaes (2014) also point out that within K-12 schools context can vary depending on the student stage of development.

Within schools McFarlane (2015, p. 25) identifies personal mobile devices as having the potential to help:

- Facilitate individual, cooperative and interactive work in class
- Enable sharing of ideas, knowledge, ideas and responses
- Increase participation in whole-class settings
- Enable learners to revisit prior learning
- Provide opportunities for autonomy and independence
- Permit storage of work and resources in one place at hand.

But, an accompanying lesson is that this can be at odds with traditional pre-digital expectations, many of which schools continue to have to satisfy. Hand-written exam essays are a good case in point. Common testing can also impact on personal learning choices. The debate on the effect of digital devices on young brains continues (Greenfield 2015, p. 14). Issues of potential distraction (Duncan et al. 2012; McCoy 2013; Bjerede and Bondi 2012) have been raised as of concern; related to both pedagogical and personal identity development issues (particularly with adolescents).

Research in school environments does not to date appear to have gained significant traction. But as McFarlane (2015) notes, "could it be that the final step change in personal access to online resources and communications by young people using smartphones and tablets will be the factor that changes policy and therefore school attitudes to computer use?" (p. 141).

How mobile learning can best interact with school is at early stage, although there is an increasing focus on certain mobile learning affordances. Within schools this is likely to be affected by the school's approach to personal learning, choices provided re time and place, and associated values. Mobile learning affordances of choice, accessibility to content, learning interactions, and connections between contexts appear to have potential value. K-12 schools, though, are institutions that operate with a strong set of social obligations that impact on what is possible and what is valued. They also deal with a wide range of maturation, from 5 year olds or below, to 17–18 year olds in their final stages before high-stakes testing leading hopefully to further study. This needs to be carefully considered, and the teacher as a central authority has a critical part to play. This will be further examined in the next section.

In addition the following school ecosystem factors can also impact on what can be achieved through mobile learning:

- Values encapsulated in organisational vision and priorities
- Structures, including support
- Infrastructure choices
- How learning is evaluated
- What change choices the school system allows, including
- What affordances the school will commit to, and in what way(s).

As Watters (2014, p. 4) reminds, "while building new technologies is easy (or easy-ish), changing behaviors and culture is much, much harder."

13.2.2 The Role of the Teacher

Within K-12 schools a key determiner is the teacher. John Hattie, in the *Forward* to Bain and Weston's (2012) study of personal digital device use in schools, identified teacher mind frames as the most important enhancer and barrier to student learning. Bain and Weston agree with Hattie that within schools there exists a fundamental

issue of conservative standardised-based systems up against personal digital learning devices geared to support connection, reflection and construction. Teachers have the potential to risk and build value if they see positive possibilities, or negate if they feel educational value is wanting. Teacher mindset can limit what might be sought through use of educational technologies (Turner 1999, Blackley and Walker 2015). Socio-cultural understanding is therefore a key consideration, as recognised by Siepold and Pachler (2011) in their examination of how such understanding can impact on mobile learning.

McFarlane (2015 p. 27) also highlights the importance of teacher buy-in, highlighting "professional development of teachers in the effective use of connected devices to support learning is fundamental to a successful implementation of 1:1 mobile computing", and that the "frequency of use of digital technologies overall was (still) dependent on school policy, access to technology and teacher practices". (p. 34) Tablet use in education is strongly aligned to teacher perceptions of the affordances of technology (Churchill et al. 2012). We need to constantly take note of Fullan's (2007, p. 21) observation on educational changes that "*all real change involves loss, anxiety and struggle*".

As mobile learning impacts on personal choice, systemic responses to the diversity that ensues will place pressure on standardised systems. The role of the teacher in integrating mobile learning, while critical, to date is short on practical advice. To support integration of the affordances identified from mobile learning research, an understanding of how best to bring together school, teacher and digital technologies in ways that add value to the overall educational enterprise is needed. With this in mind, an examination of one school's approach will seek to shed some light on possibilities.

13.3 A Short History of Mobile Learning in a School

The school referred to in this paper is a K-12 co-educational international school located in Hong Kong. Nearly all students' progress to tertiary education, often to universities spread across the world. It has high academic expectations. There are also many students who move in and out of the school, although a strong core percentage remains through most levels. It has a traditional timetable, teachers allocations and hierarchical curriculum through the International Baccalaureate (IB), Primary Years Programme (PYP), Middle Years Programme (MYP) and Diploma Programme (DP).

For the school mobile learning has been defined as learning accruing through access to digital devices at-hand within the school and beyond. Historically, this has been based on the school's 1:1 laptop program. Increasingly this is being widened to consider personal mobile devices such as phones and tablets.

A 2006 plan, Sustainable Human Networks led to the establishment of a group of educators tasked to help drive and support digital change, the introduction of a 1:1 laptop program from Grade 5 onwards, and a series of recommendations

affecting curriculum, infrastructure and teacher training. The 1:1 laptop program was progressively embedded for all Grade 5 through 12 students, who own and manage their own laptop using a school provided image.

A 2011 review led to a Digital Learning Infusion (DLI) plan built around infusion, as defined by the Florida Centre for Instructional Technology (2011) Technology Integration Matrix (TIM). This sought to infuse beliefs and practices that would improve student achievement, teacher practice, and support for the school's curriculum objectives and mission. A vision that "*digital technologies enable opportunities for greater active student learning that is valued, visible, connected and progressive*" provided a focus.

The DLI led to the development of teacher digital learning certification and professional learning networks, more active student involvement, digital portfolios as more visible learning journeys, online learning environments, a digital literacy curriculum, global and environmental objectives, and strengthening of in-school research.

The 2011 plan has been updated to take on new or emerging technologies deemed to have teaching and learning potential, such as those provided through Google Educational Apps suite, eBook construction, social media developments and iPads as mobile personal learning devices. Digital Literacy curriculum development drew on Meyer and Land's (2003) threshold concepts approach to help progress teacher and student digital learning capacity. A reaffirmation of the 1:1 laptop program to support inquiry-led learning, digital portfolios, and the infused approach to digital supported or enhanced learning constituted a continuing strong commitment to the role of digital teaching and learning in the school.

The laptop remains the primary digital device for all students from Grade 5 onwards, although iPads are being increasingly integrated in earlier years, and Grade 4 is moving to each student having their own personal laptop. This was to enable younger students and their families to communicate and connect through blogging, build up a media-based record of learning, and connect to wider audiences. Research insights are being developed within the school's programs.

Construction of eBooks and apps within the school complements use of mobile device. Chinese eBooks with their use of audio and interactive media are a good example of this. An updated vision, "*constructing visible, connected and progressive learning journeys to support reflection, feedback, ownership and conceptual depth (for teachers and students)*", was developed.

The school's vision reflects that learning can be enhanced by appropriately focused use of mobile devices. This is important, because as Clarke and Svanaes (2014, p. 15) identify, "tablets specifically must be supported by a pedagogical vision in order to reach its potential impacts on learning". Ignoring the importance of a pedagogical vision has impeded gaining academic worthwhile research on the impact of tablets on education (Cochrane et al. 2013).

Allied to this, a comprehensive teacher learning program ensures all teachers are supported. Part of this involves enhancing teacher and team adaptability, and generating more flattened learning environments (and related pedagogical approaches) so that student expertise can likewise be developed and supported. This is also

recognised by Clarke and Svanaes (2014) as crucial for effective integration. Depth of change is supported through groups that connect bottom-up and top-down drivers. School leadership by example also plays an important role.

The school's commitment to mobile learning is apparent in

- The student relationship with their laptop as a personal mobile learning device
- The use of digital devices to advance new and established learning
- Support structures and leadership commitment for progressing such learning

An examination of the school's learning ecosystem demonstrates:

- *Vision and purpose*—the school has a school-wide Digital Learning Infusion vision and plan which can be mapped against particular objectives: valued, visible, connected, progressive
- *Supportive structures*—dedicated support for curriculum and teacher personal development is provided
- *Connected infrastructure choices*—systemised while allowing some individual choice
- *Curriculum*—IB Curriculum with strong inquiry emphasis, with academic focus increasing into senior years
- *Learning evaluated*—teacher-centered, but with efforts to make learning more visible for student inclusion and wider considerations
- *Digital change management*—through a school-wide Learning Technologies Council, connecting support, curriculum and leadership.

The extent to which this has been successful against mobile learning contentions will be evaluated later in this paper.

13.4 Evaluating Mobile Learning

How best to see if a school's use of mobile technologies is leading to worthwhile educational value? The OECD (2013) case study methodology identifies analysis of primary documents, interviews of key stakeholders, discussion with focus groups of stakeholders and a discourse analysis of relevant media as an appropriate investigative approach. Sharples (2009), in the Mobile Learning Organisers Project, called on diary and interview methods. Traxler and Kukulska-Hulme (2005) defined a good evaluation as enabling quality sharing, reporting and embedding connections that are consistent, rigorous, scalable and ethical.

For any school, understanding the cultural context is a necessary prelude to evaluating what is and can be. For mobile learning this requires clarification of affordances that can be mapped against school objectives. In this paper, the following have been identified as of potential value and practical use within a school (Table 13.1):

Table 13.1 Mobile learning affordances v school digital learning objectives

Mobile learning affordances	School digital learning objectives
Increased access	Valued
Building personal relationships with learning	Visible
Personalization of choice and pathways	Connected
Increased accessibility to content	Progressive
Increased learning interactivity	
Connecting across contexts	

With this focus, the following reviews were undertaken to seek insights into ways that might progress mobile device affordances, and the school's vision for use of such devices.

13.5 School Case Reviews

Four projects within the school were analysed:

13.5.1 Study One: Grade 11 Parent Conferencing

Since 2013 all grade 11 students have developed and used a digital portfolio as part of their conversations with their parents on the progress they had achieved within the IB DP (Grades 11–12). This conversation covers the Community and Service, Theory of Knowledge (TOK) and Extended Essay aspects of the DP. This is bound by the IB's focus on developing approaches to learning (ATLs). In addition to sharing with parents evidence of achievement through personal construction, the folios also link with other subject portfolios (such as in Digital Art work) and support possible university interest in a student's school performance. Students choose their own digital publishing medium and put together their own selection of materials.

The student use of a personal school digital portfolio to help support parent conferencing supported the following mobile learning affordances:

- *Increased access*—Parents accessed and engaged in the conversation both in-school and beyond, thus widening student learning interactions and parent understanding of their child's progress. Students can also access each other's work
- *Building personal relationships with learning*—Students developed their own digital portfolio as a reflection of their learning journey

- *Personalization of choice and pathways*—Students chose what to put in their digital portfolio to best reflect their own learning achievements and the medium for publishing
- *Increased accessibility to content*—Students linked to other learning and drew on digital tools such as Google Educational Apps to provide examples
- *Increased learning interactivity*—Student developed their own links and obtained feedback from parents and teachers through the comments feature. TOK is one area that draws heavily on student discourse with others
- *Connecting across contexts*—Subject connections were also included and wider use, such as for university selection, is available

School objectives were supported by:

- *Valued*—The use continued through a change of DP Coordinator
- *Visible*—The digital portfolio provided a visible window into student learning appreciated by parents, peers, and teachers as a means to celebrate progress and identify areas for support
- *Connected*—Students drew on digital folio work created in-school in previous years as well as informal digital learning to enhance their digital portfolio
- *Progressive*—The addition of parental understanding of the non-academic subject aspects of the IB was progressed (Fig. 13.1).

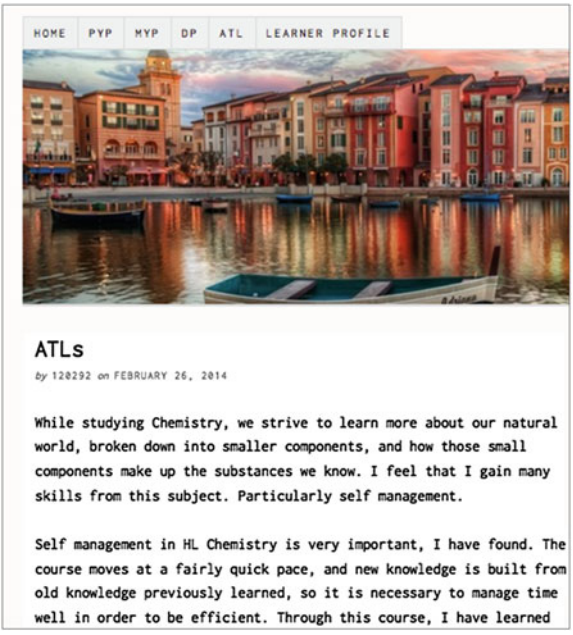

Fig. 13.1 Grade 11 digital portfolio example

13.5.2 Study Two: Grade 8 EBook and Process Journal

All Grade 8 students as part of their Science studies created an eBook on a designated authentic Science topic. This project had developed over the past 3 years, with this year's eBook on Diseases developed and evaluated with Grade 5–6 students as the intended audience. Each Grade 8 students team of three to four students completed a chapter, which was then joined into a grade-wide book. Google Docs was used to connect student group discussions and unite knowledge on both personal and group levels.

The project supported the following mobile learning affordances:

- *Increased access*—Students worked on the joint aspects even when group members are elsewhere (a critical part of group work in digital domains). Access to their work was extended through the school's Management Learning System
- *Building personal relationships with learning*—Students developed a valued relationship with software and its capabilities. The student learning of new software, iBook Author, was student led and supported by teacher understanding of student digital literacy development needs
- *Personalisation of choice and pathways*—Book design was personalised by each group within stipulated book requirements. Student choice of widgets (iBook Author internal apps) and supplementing sites such as Bookry.com were personal choices in accordance with design processes and subject standards
- *Increased accessibility to content*—Students drew on Web 2 information sources such as Bookry.com and infogr.am, as well as through their own investigations
- *Increased learning interactivity*—Students evaluated and created personalised interactive widgets available in iBook Author or Bookry. This included quizzes, galleries and interactive graphics
- *Connecting across contexts*—Students appreciation of learning, as seen through younger students, was a key part of the design process. The use of iBook Author also has been extended to other Grade 8 subjects.

School objectives were supported by:

- *Valued*—Assessed as a formal school subject project (in MYP Science and Design subjects) with learning valued extended to other students (Grade 5 and 6 students)
- *Visible*—Published within the school's Virtual Learning Environment, and available as pre-learning for future projects
- *Connected*—Group learning and problem-solving approaches supported. Collaborative publishing approaches progressed
- *Progressive*—Formed basis for learning to build deeper knowledge through publishing formal science work to different audiences (Fig. 13.2).

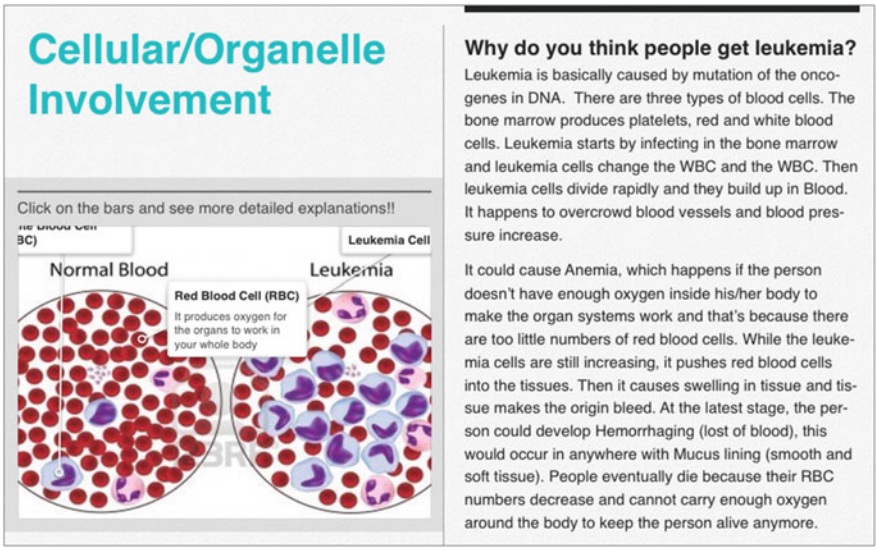

Fig. 13.2 Grade 8 science diseases eBook example

13.5.3 Study Three: Grade 6 Digital Literacy

All Grade 5 and 6 students manage their own digital portfolio (iFolio) which reports on their learning progress. In support of this a digital literacy evaluation approach was developed, where teachers provided feedback through the iFolio to each student on their digital literacy development. A digital literacy rubric applicable for teacher feedback has been developed, with a student version to support personal learning evaluation being customised by teachers.

Teacher feedback of student digital literacy through their iFolio supported the following mobile learning affordances:

- *Increased access*—Teachers, peers or parents could access student development in their own time. Teachers and students identified areas for further work as well as celebrate progress
- *Personal relationships with learning*—Students personalised within educational boundaries and developed for sharing focused areas of inquiry
- *Personalisation of choice and pathways*—Each iFolio provided avenues for personal exploration and choice, as well as a basis for further development in later years (which uses similar iFolio approaches)
- *Increased accessibility to content*—Links to new knowledge and personal inquiries were shared
- *Increased learning interactivity*—Widgets such as Flags were used to share levels of interaction Feedback provides strong learning support. Parent feedback also accessible

- *Connecting across contexts*—Project work was documented to provide an ongoing learning journey. This included personal media collections. Can also be evaluated against Digital Literacy and IB PYP expectations.

School objectives were supported by:

- Valued—As one teacher recently commented, iFolios support digital literacy through generating "possibilities for curriculum planning, teaching and providing students feedback. This also supplies teachers with a framework of how to 'move on' students to the next level and provides a common language to describe the differing areas we need to focus on."
- Visible—iFolios available for teacher, parent and peer review.
- Connected—Literacy journey available for subsequent years. Forms basis for understanding of design project approaches further developed within IB MYP Design.
- Progressive—Can evolve as students encounter iFolios and digital literacy opportunities at earlier years (Fig. 13.3).

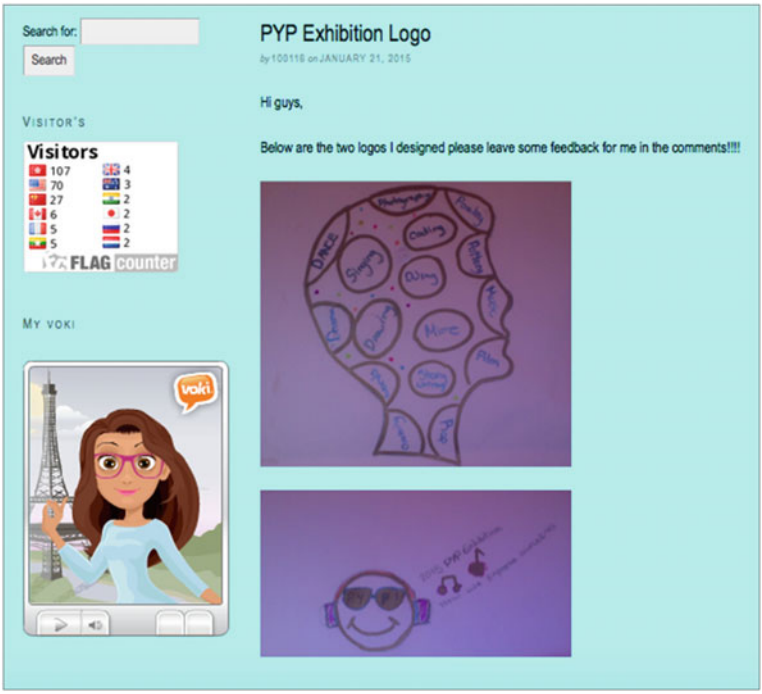

Fig. 13.3 Grade 6 iFolio example demonstrating digital literacy development

13.5.4 Study Four: Grade 1 iPad as iFolio

The recent availability of larger screen tablets has opened up new possibilities for younger students who cannot readily master keyboard technologies, enabling use of touch-screen mobile devices to engage in wider learning. While cognisant of appropriate time exposure and balance with non-digital environments critical to the young person's social and emotional well being, teachers have increasingly found that the tablet supports valued learning in new ways. While grades for younger students work with a set of six or seven school provided iPads to support learning stations, one class has been trialling the difference each student having their own personal iPad at-hand might provide. This has formed the basis for an extension to an iPad as a personal learning device for all Grade 1 students next year, building into following years as student need supported by teacher and school preparedness allows.

A core selection of apps was selected to support literacy, numeracy, communication, collaboration and media construction. For example, EasyBlog is a WordPress based app that enables young students to photograph and record through a simple click method. Other apps are selected by teachers according to student needs and learning value.

As detailed in a draft letter from the school to parents in February 2015, "by personalising the iPad and building an iFolio the student can:

- Develop confidence and competence through structured play and inquiry
- Build up a portfolio of learning through media (audio and visual) constructions
- Better engage in personalised literacy development
- Better communicate to teachers and parents
- Obtain more timely and focused feedback from a wider range of people".

The following mobile learning affordances were supported:

- *Increased access*—Teacher and parents can access student learning development anytime from multiple devices.
- *Personal relationships with learning*—Students can directly take up their iPad whenever a worthwhile learning opportunity presents.
- *Personalised of choice and pathways*—Teacher app choice is available around the core apps selected to support student creativity and personalize learning pathways. Students can build their own learning pathways through personalised use of apps.
- *Increased accessibility to content*—Students can generate and access media information.
- *Increased learning interactivity*—Students can report, reflect and communicate in more accessible media. Feedback is likewise recorded and accessible.
- *Connecting across contexts*—iFolio tags create a documented journey of curriculum value, extending classroom learning beyond the classroom.

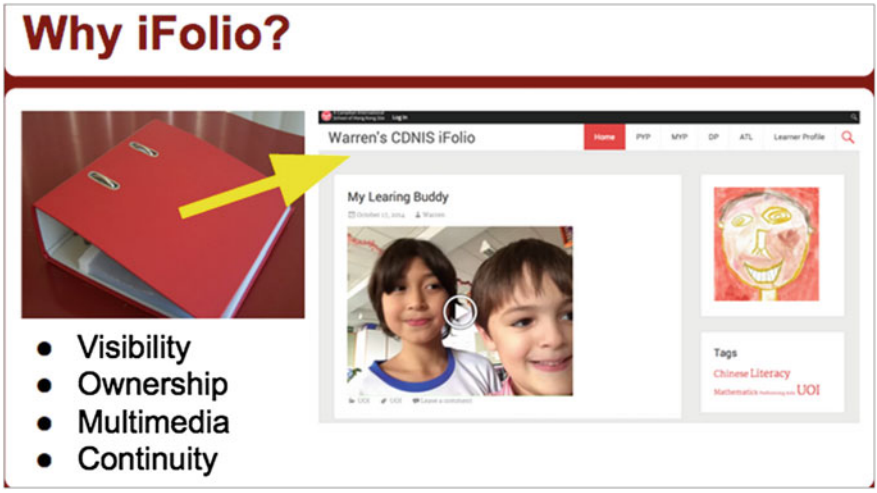

Fig. 13.4 Grade 1 iFolio example used in Grade 1 teacher presentation

School objectives were supported by:

- *Valued*—Teacher driven as worthwhile education and learning, supported by school leadership
- *Visible*—Accessible across the school community
- *Connected*—Connected to the school's iFolio approach that extends through to the DP level
- *Progressive*—iFolio moves with the student to subsequent years. New digital opportunities can be embraced and personalised learning integrated (Fig. 13.4).

13.6 Discussion

These studies support that appropriately targeted use of digital technologies can satisfy both mobile learning affordances and school intentions within a whole school framework. They provide evidence of a school coordinated approach to technology integration in line with what mobile learning research has identified as learning affordances. Teacher development and inclusion, school support and leadership, and a culture of worthwhile, evaluable risk taking are all critical aspects.

It is important continually to look deeper into any school to understand its digital ecosystems. There are many international schools spread across the world with similar surface characteristics. And as stated previously there is much that can be learned from other schools. But if one is to progress digital within a school an understanding of where the school is at, where it wants to go, and what it is willing to take on, is paramount. This includes taking into account the effect of legacy

decisions. As Watters (2014, p. 3) reminds us "the future of ed-tech is shaped by the history of ed-tech—whether we realise it or not". So too the future of any school's use of ed-tech.

The mobile learning approach taken on in the school recognises several deliberations as important to progress any school's productive commitment to mobile learning. These include:

- Understanding institutional cultural and contextual foundations
- Clarifying institutional intentions
- Clearly stating what is understood by emerging concepts such as mobile learning, digital literacy and so on
- Understanding the adaptability requirements of dynamic digital systems within school structures
- Developing support structures that help facilitate a united approach to advancing personal, curriculum and school system objectives
- Importance of leadership at multiple levels, including teacher inclusion
- Looking for opportunities and challenges to be embraced and embedded as an integral part of institutional decision making
- Maintaining a willingness to integrate student personal learning facilitated by their personal devices.

The investigation in the school has positively supported the question of whether mobile learning affordances can be successfully integrated into the school learning ecosystem to provide valued learning. However, this is only a first step and somewhat limited to in-school mobile devices in early years, and personal laptop use in later years. In addition, to look deeper, more formal research is required to ascertain:

- Are there areas where more can be done, such as in level of personal choice, levels of visibility and feedback, or evaluating learning value,
- To what extent might limitations of school as a system be blocking intentions, and
- If so, what adjustments might assist and how likely to be taken up

More also needs to be done on the impact of personal smartphones and multiple devices on school-based learning. These all will relate to Sharples' (2009) identification of usability, effectiveness and satisfaction as important drivers for evaluating mobile learning (as with any digital technology change).

13.7 Conclusion

Mobile learning within school systems is at a crucial point (McFarlane 2015). Using digital to add value in education is an evolving phenomenon. How this will unfold by its very nature is unclear. But what it does tell us is that in order to progress we need to innovate and take calculated risks, particularly in

fast-changing, dynamic environments. To this end schools need to continue to seek new opportunities that reflects a balanced, forward-looking focus. They also need to continually question themselves, and by doing so educate by example. All schools as Digital Age social institutions will need this trait.

This paper, by looking at one school's approach towards integrating mobile learning up against affordances identified by mobile learning research, provides pointers to consider for other schools, as well as highlights issues that all schools need to consider.

Some may prefer to stay cocoon within closed systems built around closed knowledge and minimal change controlled by individual hierarchical decision making; what some might term industrial thinking. Others may be content to focus solely on individual relationships with their personal technologies. If seeking to unite the (school) system with personal mobile learning, it is as much about the approach, the intent and the willingness to be open to the opportunities mobile device might provide. There is a long way to go, although this study provides grounds for positive expectation. It starts with a conversation; it includes risk, evaluative processes, and a recognition of the challenge and power of difference a meeting of the personal and the systemic.

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