

Agile Digital Age Pedagogy for Teachers: ADAPT

Introduction

Recent research *Underwood et al,(2010)*, Hadfield et al (2009) Royle and Hadfield (2012) has illustrated that the integration and use of ICT in education tends towards the enhancement of existing practices and this may account for a lack of transformation or innovation in approach at the pedagogic level.

Potential drivers of educational transformation are the digital tools and related habits that are transforming how we work, learn in informal and formal spaces and socialise in daily life. This affords us new insights into how institutions can be organised, knowledge generated and created and leads to the potential for a greater range of capabilities. In a world where the use of technology can enable a more personalised and diverse approach perhaps a different way of looking at human development is required. The capability approach Sen (1992, 1999) is one such way of thinking about the manner in which human beings are able or otherwise (due to particular contexts or systems) to achieve the sort of life that they value. Sen, (1992:40) describes the approach as follows: The major constituents of the capability approach are functionings and capabilities. Functionings are the “beings and doings” of a person, whereas a person’s capability is “the various combinations of functionings that a person can achieve” Zheng (2010) notes, quoting Sen (1987:36) that:

“A functioning is an achievement, whereas a capability is the ability to achieve.” Sen (1987)

This means that capability is the range of possibilities open to individuals that can subsequently be converted into valued functionings. This range is dependent upon their context and the systems and processes, good and services etc. that may extend their capabilities or constrain them.

With this in mind it is imperative that educators are knowledgeable about their learners and the digital systems that they engage in so that their skills are valued and capabilities converted into effective functioning. At the same time, the education system, its values and in particular its curricula must be examined to ensure that it does not constrain those that engage with it but rather that it opens a space for diversity in both learning and teaching.

Oosterlaken (2009:94), notes:

“After all, what is technology for, if not increasing the capabilities that we have as human beings? Just as the wheel enhanced our capability to transport heavy loads; more recently, the computer enhanced our capabilities to make complex calculations.”

However, schools and other educational establishments are, on the whole, notoriously slow at adopting innovations even those that are clearly rooted in the digital culture of their charges. As Goldberg et al (2010) also note:

“Conventional institutions of learning have changed far more slowly than the modes of inventive, collaborative, participatory learning offered by the Internet and an array of contemporary mobile technologies. P3

When institutions do adopt digital tools they tend to utilise technology that can enhance existing practices and live alongside established systems of instruction. As McLuhan (1967) noted society tends to make the new technology do the work of the old.

Transformation however, requires a shift towards increased agency for learners and a rethinking of learning within a framework of digital competency. It requires a learning approach that is flexible and accommodating and an identity shift from teachers that involves considerable risk if it is both a shift made in isolation and a counter cultural one in terms of the school and ultimately, the education system. For example, 24-7 access to information in the hands of learners does two things, firstly, it undermines teacher expertise and the myth that knowledge is fixed, secondly it undermines teacher controlled instruction and a linear teacher centred or teacher controlled pedagogy.

When digital tools are introduced into what was previously a “fixed knowledge economy” the teacher is often left looking for a role and more importantly a pedagogical approach that can accommodate uncertainty and different styles of engagement emanating from the ways in which people now socialize and work.

According to Traxler, (2009) this phenomena

“challenges the notion of a stable and commonly accepted corpus of knowledge distributed through privileged channels by socially sanctioned individuals. Now everyone, wherever they are, can produce content to learn, and everyone one can discuss it anywhere/anytime and just-in- time, just-for-them, just-enough”.

Realising the potential for learning purposes of a technological tool is a first step in reconceptualising not only how learning can occur but also in reconfiguring identity as a teacher. In their paper on the concept of Heutagogy, Hase and Kenyon (2000) provide further insights into the drivers for change in society and propose a consequent change in associated pedagogies so that learning is self determined and learner focused. They summarise the challenges facing teachers in a world in which:

Information is readily and easily accessible; where change is so rapid that traditional methods of training and education are totally inadequate; discipline based knowledge is inappropriate to prepare for living in modern communities and workplaces; learning is increasingly aligned with what we do; modern organisational structures require flexible learning practices; and there is a need for immediacy of learning. (Hase and Kenyon 2000, p.2)

School based teaching has generally been associated with the transmission of content, skills and knowledge for preparation for a world of work which unfortunately may no longer exist. Traxler (op cit) notes

“Changes in the nature of work itself, in the times and places of work and the relationships within work are changing, Insofar as ‘learning’ is understood as work, the implication of these changes for formal education is that expectations about where, when and how learning happens must change in the same way as work itself; insofar as ‘learning’ is understood as a preparation for work and the world of work, the content and style of education must continually change in order to stay aligned to the economy. The increasingly fluid economy ... constitutes a considerable challenge for many parts of the formal education system.”

So it would be sensible that, as the world of work is changing and our engagement with the digital is enabling this change, we should devise a pedagogical approach that encapsulates or enables us to work in synch with these phenomena in a period of rapid change. Too often technologies are equated with innovation where in reality it is the pedagogic (what teachers do) and/or cultural shift (how innovation is managed) that is innovative and more important. Mayes and De Freitas (2004) summarise learning theories that have impacted on e-learning into the following groupings:

associative, constructivist, (individual/cognitive or social) and situative. In recent years interest has been placed in problem and challenge based learning Boud and Felletti (1991) and more recently product oriented learning Zhao (2012) and agile pedagogy Nikolic, J. and Gledic, J. (2012), Stewart et al (2009) Parker and Davey (2010) Radziwill and Benton (2011), Redden (2012) Berry (2012) Royle and Nikolic (2012). These approaches to learning more or less move from a teacher centred role and identity as controller of learning to a teacher role based on facilitation and project direction from an informed perspective. They ask learners to become self directed, team oriented but individually resilient lifelong learners (see European Reference Framework Key Competencies For Life Long Learning) (2007). A movement from transmission of mediated content by teachers to content creation and skills development by learners alongside teachers in a collaborative yet competitive environment, mediated by technology, is a difficult but not impossible transition.

This paper proposes an approach that is an application of Agile ethos and methods to teaching and learning in order to create innovative Agile Pedagogies. This will adapt the structure of Agile work practices, such as Scrum and Kanban for learning and make this authentic to the world of work by using the digital tools and other complimentary methods associated with its practice such as Open Space Technology thus directly linking education practices with work. As Agile is based on what may be termed a “process” model of education we also advocate use of the Mozilla open badges system of accreditation to capture that process and relate it to existing accreditation/assessment frameworks but ensure that such abilities are transferable and portable. If education is expected to deliver a highly skilled, creative, adaptable workforce, i.e. ethical world citizens ready to successfully move around fast paced changing job markets, a major shift in the education paradigm is needed from one which is fairly static and linear to one which can respond rapidly to change and development. The proposed innovative approach based upon Agile/scrum is particularly pertinent development for school systems and curricula because it promotes agency within a structured rule bound space. A pedagogy based on agile principles would be reforming (of pedagogy) but transformational in terms of learning and teaching because it could exist within the existing culture of formal schooling which is bound up in a need for control before moving to a more learner centred de-controlled approach.

Nikolic and Gledic (2012), Stewart et al (2009) Parker and Davey (2010) Radziwill and Benton (2011), Redden (2012) Berry (2012) and others have outlined how a methodology derived from the work organisation of software development practices can be migrated into pedagogy. Agile practices are derived from the manifesto for Agile Software Development (op cit) which looked at the way that work was organised and perhaps realised that self organising and managing teams were a more effective than tightly controlled and directed ways of working. Agile and “Scrum” the most popular and widely adopted methodology that is relatively simple to implement http://www.scrumalliance.org/pages/scrum_101 focuses on the following key premises. People, individuals and interactions over processes and systems, doing things rather than the documentation of doing things, outline plans over detailed specifications, customer collaboration over contract negotiation and responding to changes over following a plan. Whilst the latter half of each statement is valued in agile practice more emphasis is placed on the former. When one delves deeper into the actual management of tasks http://www.scrumalliance.org/pages/what_is_scrum we find teams that make decisions themselves with a facilitator to advise, short time boxed self assigned tasks, a product owner who monitors the work-flow but does not interfere with the work of the team once it is on task and built in review points to adapt, reflect on performance and change the product as work progresses. Scrum, is the most popular and widely adopted of scrum methodologies and is simple to implement, hence our focus here.

Agile practitioners and educationalists (Martin 2003, Larman, 2004, Adkins 2010, Anderson & Reinertsen 2010, Denning 2010, Kniberg 2009, Owen 2008, Nikolic 2012, Redden 2012) have employed agile methods in various ways, Redden(2012) for example, applied it to a training environment and Berry to the UK school system with particular reference to ICT education, whilst Nikolic deployed it for organisational and learning management, and for curricula design, at the national level, and to reform the existing status quo. What is clear and at its heart is that it is a way of working that engenders agency in its participants. The major innovation in Scrum came from the self-organising teams with no hierarchy but value/time negotiation, which is the main reason for developing scrum. The focus on people and their individual needs, through the system of “scrum” working ceremonies where each team has a daily meeting where individual issues and problems are raised, should allow capabilities to be recognised and nurtured and the active, hands on nature of doing rather than documenting doing leads itself toward problem based and discovery learning. The focus on outline plans over detailed specifications highlights the need for teachers to be experts in the flexibility and adaptability of learning approach rather than followers of a received regimen of over planned learning. As Berry (2012) notes:

“the agile teacher concentrates on developing useful, working knowledge, skills and understanding rather than detailed lesson plans. This is about starting at the beginning, rather than the end, making use of what learners know already and building on that rather than taking the next step in a pre-planned sequence to a pre-determined destination. Objectives are important, both in agile development and agile teaching, but they're immediate objectives in a short "time box", and ones which are immediately useful.”

Perhaps the most important facets of the agile approach are ownership of the work and a collaborative supportive approach that builds in a reflective planning and review process. The team is the main driver and controller of work and the individual is important within the team. The teacher can take a designated role of either scrum master (team facilitator) product or project owner so still has input into the overall activity but has a more collaborative rather than leading role. They can take part in task reviews and act as mentor, coach and guide. Scrum is designed to deal with complexity and provide self managing frameworks and intrinsic rather than extrinsic motivation for task definition, completion and evaluation. In using scrum, knowledge is co constructed, and decisions about how and when to learn and achieve tasks is delegated or owned by the team collaboratively. Into this framework for organising activity any particular problem based content can be placed. The onus is upon the team to solve the issue and organise themselves to achieve the task(s) required (the scrum master/facilitator works with the team). These mechanisms place the emphasis on self-help within the team in order to achieve the set tasks and to learn about themselves and the way they learn and the skills they have and need to develop. Accordingly, if an individual highlights a difficulty (even in terms of personal skills and abilities) then the team must help them solve it. Going deeper into agile elicits various controls on quality of outputs in terms of the team and the product owner negotiating a “definition of done” for a completed project. There is a propensity for learners using digital technology to continue to modify and adapt projects, it is here that the product owner (teacher) can look at quality specifications or assessment criteria which would sit alongside each teams’ “definitions of done” to improve performance. What agile does is provide a rule based egalitarian pedagogic space that promotes learner agency. What it doesn't do is give a free space that is unstructured.

In adopting agile pedagogy educators must think about how capabilities and skills can be developed through real or simulated activities that are negotiated by learners and recognised by all as leading

to valued outcomes and energised and motivated individuals. The difference between operating scrum as a learning methodology at work and in schooling is that formal education is predominantly about developing emergent capabilities whereas in work one could assume that team members already possess varying degrees of expertise.

In the digital sphere, which is so entwined with daily functioning and capability enhancement, there are certain skills and attributes that need to be developed within the broadly structured agile space. Futurelab (2009) note that digital literacy is an amalgamation of: Knowledge of digital tools: hardware/software awareness and competence; critical skills: evaluation and contextualization and social awareness: understanding your identity, collaborating, and communicating to audiences in context. Whilst hardware and software use will undoubtedly change with time and are not fixed the other territory needs to be explored and mapped in conjunction with any “content (for example historical enquiry)” or “context” based (design and innovate a new and radical music player) activity that is embarked upon. This is important because capabilities based on these domains will endure and be applied across a range of contexts and potential content. It is also important that all learner capabilities are recognised and developed and to this end it is imperative that teachers develop their own capability within the digital landscape.

Teachers should develop their own digital skills so that they can recognise the potential for learning with digital tools. Adopting an agile framework will create a more open space where there will be greater potential for their use by learners as personal digital agency is released. Equally they also need to be aware that not all of their learners are digital natives and existing capabilities will need to be nurtured and new ones developed into valued outcomes. For example, skills with social software such as twitter could be leveraged for social or community good and promote digital marketing skills. Only by having an awareness of the digital possibilities can teachers engender these skills and capabilities within their learners.

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<http://youtu.be/pe5kAC0Ncpl>