Moodle and the Living Curriculum

Tabitha Roder
Te Puna Ako – eLearning academic development
Unitec Institute of Technology

Nicoletta Rata-Skudder
Faculty of Social and Health Sciences
Unitec Institute of Technology

This paper discusses how Moodle can act as a catalyst in transforming teaching practice. During Unitec's implementation of a new eLearning Development Strategy, framed within a broader teaching and learning initiative referred to as the Living Curriculum, the institute migrated from Blackboard to Moodle. Reflecting on this transition period, the authors identify how the social constructivist approach underpinning Moodle complements and can be employed to facilitate and incorporate the characteristics of Living Curricula. An overview of Unitec's characteristics of Living Curricula is given, with four themes providing a framework for their application. An investigation of the Moodle tools through the lens of these themes enables us to relook, rethink, and redesign our learning spaces. Examples illustrate some of the affordances of Moodle in enabling a Living Curriculum, and lead to a reflection on the support required to encourage teachers as learners to recognise these affordances for their pedagogical potential. Discussion around the design and intent of Moodle leads to a consideration of how teachers dispositions ultimately impact on the tool's employment.

Keywords: Moodle, Living Curriculum, tertiary, teaching practice, affordances, dispositions

Background

Unitec is New Zealand's largest Institute of Technology providing vocational and applied professional education from Certificate to Doctoral level, with four campuses in Auckland offering mostly face to face delivery courses but with an increasing demand for more flexible delivery options.

The institution purchased a Blackboard license in 1998 and for the majority of courses was a repository for core documents and a means for announcement broadcasting. In 2009 an evaluation resulted in the decision to adopt Moodle as the institutional learning management system (LMS). The migration to Moodle was launched within the context of two significant institutional strategies; the Living Curriculum and eLearning Strategy.

The Living Curriculum

In 2010 Unitec began implementation of a transformative initiative described as the Living Curriculum. Development of the Living Curriculum was closely informed by discourse around transition pedagogy and social constructivism. It is defined by a number of key characteristics including complex conversations, curiosity, focus on practice, social constructivism, blended learning experiences, research-informed, interdisciplinary, literacies for lifelong learning and embedded assessment.

Using the key characteristics, Unitec developed a set of principles of learning and teaching (conversation, curiosity/enquiry, collaboration, self-efficacy, problem solving, creativity, and reflection). In analysing these, four key themes emerge; enquiry, discipline, autonomy and conversations as shown in Table 1. Embedded in each theme is the concept of Ako - the Māori concept of teaching and learning as a reciprocal, connected and interrelated process "where the educator is also learning from the student and where educators' practices are informed by the latest research and are both deliberate and reflective. Ako recognises that the learner and whānau [familial community] cannot be separated". (Ka Hikitia 2008, p. 20)

Table 1: Ako: learning together, Unitec pocket guide to the Living Curriculum (Unitec, n.d.)

Conversations *how learners engage with self and others to develop understandings*	**Ako as puawaitanga**. Ako acknowledges that curriculum development derives from diverse forms of intercultural communication.	Conversations about enquiry, knowledge, practice, learning and teaching are significant for engagement between and among learners, teachers, practitioners, communities, scholars, and with self and texts. Conversation develops beyond chat or discussion and becomes true dialogue that involves analysis, synthesis, critical thinking and reflection. Effective conversations help to build inclusive relationships, involve questions as well as answer, and facilitate the expression of different points of view. Conversations are contextually situated, and both technology and relationships mediate and facilitate conversations.
Enquiry *how learners go about asking and answering questions*	**Ako as wānanga.** Wānanga informs the curriculum through critical enquiry. The relationship of the learner and the teacher is interdependent, and reciprocal for personal and communal good. In this context, the teacher is prepared to learn from the learner.	The process of enquiry is at the heart of the tertiary learning experience. It necessitates reflecting on the world within the perspective of a domain, formulating a question, locating information in response to the question, interpreting and testing ideas and information, generating and synthesising ideas, and presenting and reflecting on the process. Synthesis, reflection and evaluation will in turn generate questions for further exploration.
Autonomy *how learners increasingly develop their capability and confidence*	**Ako as mana**. Mana binds the authority of learner and teacher with matauranga (knowledge). Integrity is developed through a process of poutama (scaffold learning).	Individuals taking increasing charge of their own learning, which may be best achieved through a scaffolded and staged process of learning how to learn, planning, managing and reflecting on the process and products of learning.
Discipline *how learners engage with the knowledge that underpins the discipline*	**Ako as kaupapa**. Kaupapa is a process by which intellect internalises, distinguishes and creates new knowledge.	Defined as a community of practice which has a (contested and evolving) body of knowledge and theory, based on particular ways of knowing and practising, which is taught and applied and researched. A discipline has its own literacies and language. Members of the discipline (faculty, learners, practitioners, scholars, etc) identify with this community of practice and help to induct new members.

Underlying the Living Curriculum, an additional 'eLearning Development Strategy' was launched with the aim of developing the capability and capacity of Unitec academic staff in integrating learning technologies to enhance the learning experience offered to students.

How does Moodle fit with the Living Curriculum?

Are the eLearning Development Strategy and the Living Curriculum about Moodle? Not directly, but the affordances offered by Moodle have influenced the eLearning Strategy, and have enabled teachers to reconsider their practice and learning design, in light of the foundational philosophy of the Living Curriculum, which is closely allied with social-constructivism. (Pachler, Bachmair & Cook, 2010 p. 47, as cited in Keesing-Styles & Ayres, 2011). Barajas and Owen suggest that implementation of an LMS will only improve educational outcomes if "teaching (pedagogic effectiveness) and institutional sphere" are considered (2000).

Moodle development was informed by social constructionism which, as with social constructivism generally, regards learning as a social activity. It has a particular focus on the learning that can occur while learners are actively involved with the process of constructing artefacts for use by others ("Background", 2012). With this view in mind, Moodle aims to offer students control of shared content in many of its core activities, enabling and encouraging learners to construct and co-construct learning artefacts, and contribute towards the provision of learning experiences in the online sphere.

It warrants strong mention that the driver for adopting Moodle as the institutional LMS was pedagogical - "The eLearning Strategy was predicated on the need for pedagogic change and for teachers to reflect on their own

teacher identity, views of knowledge, and the place technology has to play in facilitating these beliefs." (Keesing-Styles & Ayres 2011, p. 50). Siemens encourages institutes to define learning as their starting point for selecting a technology platform. "A clear definition of learning vision and desired future states, created through input from stakeholders (administrators, faculty, students, and information services) should provide the foundation for decision making, and the boundaries of platform selection" (Siemens, 2006). The social constructionist foundations of Moodle complemented the transformative practices proposed in the Living Curricula and eLearning strategies more completely than other LMS options.

It can be argued that the use of an LMS provides structure and a safe starting point for academic staff embarking on their eLearning journey. Had Unitec endeavoured to implement an eLearning Strategy utilising only Web 2.0 technologies without a supporting LMS, some pioneering teachers may have been successful in navigating the new territory of teaching with technology but others may have struggled without the structure accommodated by an LMS. Had Unitec implemented the Strategy whilst still using Blackboard, it would have been without the benefit of the Trojan horse effect that the Moodle transition enabled and which provided the impetus for people to realise that change was needed and inevitable. As recognised by the Manager of Te Puna Ako at Unitec "The shift to Moodle facilitates changes in learning and teaching through our eLearning Strategy framed within the living curricula" (Ayres, Pers. Comm. 2009).

Moodle's Affordances in Realising a Living Curriculum

Moodle used at its best aligns well with the Living Curriculum, and offers affordances which can facilitate learning experiences consistent with the underlying principles, characteristics and themes of Living Curricula. The design and future direction of the Moodle LMS development are driven by an intention to support social constructivist and social constructionist pedagogy.

> Moodle doesn't FORCE this style of behaviour, but this is what the designers believe that it is best at supporting. In future, as the technical infrastructure of Moodle stabilises, further improvements in pedagogical support will be a major direction for Moodle development. ("Philosophy", 2012)

James Gibson's perceptual theory of affordances (Withagen et al., 2012, Gibson, 1982) originates within the domain of cognitive psychology and has been foundational in discourse around technologies. Putnam (2006) for example, identifies four key "affordances of technology" - providing access to information; automating, simplifying and transforming tasks; representing knowledge and thinking; and communicating and collaborating with peers and experts.

The work of theorists such as John and Sutherland (2005) has led to viewing affordances in terms of potentiality, and has introduced the argument that user perceptions, rather than the tools' innate features, are more influential in determining the affordances of the tool. Fisher, Higgins and Loveless (2006, as cited in Roder & Hunt, 2009, p. 220) describe digital technologies as "tools which afford learners the potential to engage with activities", with the ability to change the way users approach tasks, thus altering and influencing the nature of the activity. Withagen et al. (2012) also suggest that affordances can encourage certain behaviours, making them more likely to occur.

A considerable body of literature explores the affordances of technologies in terms of education, with a view to the relevance of learning technologies to meeting societal needs and social approaches to learning. McLoughlin and Lee (2007) explore pedagogical choices available given Web 2.0 technology affordances and recognise the social constructivist principles of Pedagogy 2.0 afforded in social software tools. Roder and Hunt (2009) note "The kind of technology which has driven many of the changing needs of society are also providing some of the tools, now beginning to appear in Web 2.0 which can, perhaps, assist in providing educational programmes to satisfy them" (p. 220).

The following sections consider the affordances of Moodle framed within the four key themes of the Living Curriculum as described in Table 1.

Conversation

Moodle can act as an enabler for complex conversations through "tailored opportunities to share ideas, ask questions and express their knowledge" in "an environment which is flexible, both in time and space" ("Pedagogy", 2012). When discussing complex conversations we refer not to chat, but contextual dialogue that "involves analysis, synthesis, critical thinking and reflection" (Ako: Learning together, n.d.). Complex

conversations explore different points of view, posing questions as well as answers. When complex conversations become part of the learning process, learners are scaffolded through the practice of collaboration and participation, towards taking responsibility for facilitating complex conversations independently. Complex conversations need to occur between learner and teachers, peers, practitioners, other stakeholders, texts and self.

Using Moodle, teachers share resources with their students in a range of format types, or by linking to websites, ebooks and library links to research databanks. Where courses have multiple teachers, the range of texts can be extensive as contributors bring with them their own experiences and interests. This can offer students a wider variety of texts to engage with, but also the opportunity to critically evaluate a range of texts. There are many Moodle tools that allow students to also share readings they come across in their own learning journey. Teachers can deliberately design activities that promote this sharing where students upload or link to relevant material and explain its relevance to the course. Resources can be discussed in forums or chat activities to provide opportunities for learners to have critical conversations with peers, teachers and invited participants.

The chat activity is used in Unitec's Captive Wild Animals course for students and teachers to discuss the texts and interpretation of upcoming assignment requirements. Students are also raising and discussing current industry news in their informal chats, offering opportunities to tailor the curriculum pathway to their needs.

The flexibility afforded by the asynchronous nature of forums allows participants to post anytime, relieving the instant response pressure in the classroom, giving students the opportunity to think about their contributions before sharing them. Forums also allow more time to discuss a topic than designated class time affords. Enabling students further opportunity to explore diverse interdisciplinary, complex and specialised interests provides customised and transformational learning experiences, capitalising on student engagement with high interest topics.

At higher study levels learners are expected to "engage in complex conversations demonstrating intellectual independence" and to "generate content and utilise it as the basis for critically reflective conversations within the discipline" (Mapping the Living Curriculum, 2010). At Unitec the online text assignment activity is often used to engage students in reflective dialogue, usually in response to selected texts, identified learning opportunities, industry or community-based practice. The online text assignment tool enables facilitators to provide feedback and provocative questions inline with the students' own reflections, encouraging learners to further evaluate, challenge, develop and critique their ideas. This is an iterative process which guides and scaffolds students towards developing independent arguments, and high level critical thinking skills.

Complex conversations in the Living Curriculum involve industry and community participation. Forums can be used to interview practitioners, employers, and industry partners. Unitec have many instances of projects conducted in partnership with industry in educating students 'for work, in work, through work'. When completing industry projects a method for communicating between students, teachers and industry project supervisors is integral to the project's success. Industry project supervisors enrolled in the course can participate in collaborative activities and communications throughout the project. These provide a vehicle for communities of practice to develop amongst participants, and relationships to develop between students and key industry stakeholders.

Enquiry

Enquiry considers how learners go about asking and answering questions. Using an enquiry approach involves thinking about the world, formulating a question, finding and organising information about the question, critically evaluating, interpreting and testing ideas and information, generating and synthesising ideas, presenting and reflecting on the process (Willison & O'Regan, 2006).

Learners entering the tertiary environment are expected to engage with questions typically determined by the teacher, but as they progress their studies they negotiate the question and eventually establish specialised questions, guided by the teacher. To facilitate this, the learner needs an environment where they can engage in and be part of decision making. Complex conversations encourage learners to formulate and refine their questions, and reflect throughout the enquiry process.

A student's first experience might consist of answering the set question using one of Moodle's assignment activities. The Online assignment tool means assessment can be iterative with feedback along the way, providing the space necessary for negotiating the question and shared decision making between the teacher and the student. Forums provide a venue for students to share their question and receive feedback from their peers

on how they might clarify the question further before investing time in research. Their peers can share relevant resources, providing invaluable discussions in learning how to critically evaluate information. A well facilitated forum discussion assists in learning to take "primary responsibility for generating critically reflective conversations, sometimes in unpredictable contexts" (Mapping the Living Curriculum, 2010).

Following the enquiry process, after formulating a question the students are ready to find information. At early levels of study, students may be choosing from a prescribed range of resources, however in later study a learner needs to source information independently from a range of resources using advanced research procedures. Moodle courses at Unitec support students in being research informed by incorporating tailored links to library resources within an html block. Each is customised to assist students with discipline related research. In courses where students are required to source information independently, a teacher may setup a collaborative database activity for students to share information they have found relevant to the question. Comments and rating options in the database activity provide a channel for peer review of these student sourced resources, identifying the most valuable for their assessment purposes.

Learners initially experience a high degree of prescription, scaffolding and guidance from their teacher. The Moodle course structure allows teachers the flexibility "to construct a shared and active representation of the learning journey" (Pedagogy, 2006). Learners demonstrate intellectual independence at higher levels of study by taking responsibility for determining the direction of enquiry. Some Unitec students use Moodle courses as their research portfolio, indicating the processes they followed. Their courses have provided the means to share their question, gather information in one place, collect data, presenting their findings and reflect on the learning process. These are examples of how Moodle can facilitate an increasing level of independence and self-directed enquiry. There is a close synergy between the Moodle affordances and the gradual scaffolding towards independence.

Autonomy

To enable graduates to take charge of their own learning, a staged process of learning how to learn, plan, manage and reflect on the process and products of learning is necessary (Ako: Learning Together, n.d.). Use of Moodle can help teachers to scaffold learners' capability and confidence in becoming autonomous learners.

Initially learners develop independence by engaging within a defined range of contexts in largely teacher-directed activities in which constructive feedback by the teacher is given. A quiz incorporating well designed feedback enables students to quickly check their own understanding of a topic and identify focus areas for further independent study. A quiz also provides teachers valuable feedback on their own teaching practice and how well a topic material and associated activities is meeting a group of students needs. Moodle 2.0 conditional activities further allow teachers to develop more individually responsive learning pathways for learners according to their prior experience, and identified needs.

The students' independence can be built by starting with familiar contexts then including theoretical and unfamiliar contexts. They gain a deeper knowledge of their discipline in a range of contexts as they progress, and learn to operate with some autonomy and responsibility for achieving outcomes of the learning process. The conversations between students in the forums and blogs helps the teacher to gauge the literacy demands of the course and the students literacy levels, enabling them to choose texts, resources and activities as appropriate to scaffold learning.

Moodle forums can be tailored for specific purposes. A single simple forum creates one discussion thread, keeping a conversation focused on one topic. However a forum in which each person posts a new discussion topic is useful for encouraging all participants to share case studies based on their personal experience and background. The other students can then respond, allowing each student the opportunity to receive personalised peer feedback. This process is helpful for students in realising and developing an understanding of their own personal ontology.

As learners progress through study they have increased responsibility for determining the nature, quality and quantity of outcomes, and then explicit and structured input on the process of reflecting and evaluating their own learning. The Moodle blog tool can be used as critical self-reflection tool. "Individual blogs allow people to express things in a public but reflective way, often providing access to thinking that might not normally expressed in, say, a forum" ("Pedagogy", 2006).

Eventually learners are expected to manage their own learning with some supervision and structured input from teachers on learning strategies. At higher levels they should engage capably in a range of specialised familiar and sometimes unpredictable learning contexts. Helping learners participate in group settings, taking personal responsibility for individual contribution can assist in developing autonomy. Using Moodle's groups and groupings options, mini projects can be managed through Moodle's wiki and forum activities, offering students a safe place to test their ideas. Students can contribute equally to wiki pages for shared assessments, and groups can be kept separate or made visible to the rest of the class.

Students need to be able to evaluate their own work and capably evaluate the outputs of others. This requires self and peer assessment guidelines and skills to be introduced and supported. The workshop module provides a method for peer assessment of students work but is often neglected as a difficult to use Moodle tool. This impression is confirmed in the Moodle Documentation ("Workshop module", 2012) which recommends giving both the teacher and the learner experience with different assignment activity types first. Students can submit work online and via attachments, and receive grades for their own work and their peer assessments of other students work.

To help learners participate in relevant communities of practice within their discipline, the notion of Community of Practice must be introduced and developed, opportunities to operate as a community with direction on roles and responsibilities needs to be given, and guidance provided on cooperatively managing the dynamics of the group.

Discipline

This theme addresses how learners engage with the knowledge that underpins the discipline or domain. A discipline is defined as a "community of practice which has a (contested and evolving) body of knowledge and theory, based on particular ways of knowing and practising, which is taught and applied and researched" (Ako: Learning together, n.d.). Members of the discipline may include teachers, learners, practitioners, and researchers, all of whom help to induct new members into the culture, identity, language and literacies of the domain.

In early tertiary experiences, teachers guide students to engage with knowledge from selected sources with the aim to reach shared understandings. Collaborative glossaries using comments and ratings are a simple but effective means to develop literacies and shared understanding within the discipline. Because the Moodle glossary tool allows for duplicate entries, the teacher can ask all students to define the same term using their own words, and then discuss why their definitions differ. The combination of differing literacy levels, backgrounds and experiences, and context can give rise to engaging conversations among learners about their interpretations. From this process emerges a deepening understanding for all students and the opportunity for students to evaluate and acquire an understanding of theoretical concepts situated within familiar and personalised contexts. These processes are formative to a learner's identity within the discipline because as students develop a 'command' of knowledge in specialised areas they begin to engage in knowledge creation. The learner has to understand the relationship of specific knowledge to the discipline so they can independently and creatively apply conceptual knowledge in complex, variable, specialised contexts (Mapping the Living Curriculum, 2010).

Guided conversations with peers and teachers about analysing and interpreting problems and identifying appropriate responses, lead to learners synthesising disciplinary knowledge and linking relevant disciplines to their practice. The Unitec Department of Performing and Screen Arts have a shared Moodle course which showcases each of the different disciplines within the Department, exposing all students to the news, ideas and culture of related but separate domains, and encouraging cross-hybrid innovations to occur.

Students beginning to construct and reflect on their disciplinary identity in their initial studies subsequently progress to having interdisciplinary conversations about multiple perspectives from a disciplinary base and interdisciplinary collaboration. Learners will construct and reconstruct a disciplinary identity based on their engagement with disciplinary and interdisciplinary knowledge.

To integrate discipline-relevant examples the remote RSS feeds block can be implemented. Unitec's Nursing in Community course incorporates a feed from the Health section of the national newspaper. The course also incorporates international case studies relevant to each topic. Discussions about industry case studies and current news expose students to the variety of options their study can lead to in terms of a career path.

Teachers can collaborate in Moodle courses with industry partners providing external mentors and expertise, and educating students through real-world work contexts. The Unitec Department of Education has initiated a Moodle course to facilitate an Early Childhood Education Network, inviting employers to become part of a community, sharing best practice, discussing industry legislative changes, and providing stronger connections aimed at improved outcomes for students in work experience or practicum.

The value of real world workplace assessment is not missed in Moodle; the offline assignment activity gives teachers a method of advising students on their assessment requirements and recording their grades in the central hub that the Moodle course so often becomes. Another method to facilitate assessments based on authentic scenarios is to use advanced uploading of assignments. This assessment type allows students to submit a portfolio of all the files associated with the assessment. An example might be a project to build a boat, where the student submits a time-lapse video of the building process, along with the blueprints of their design with any amendments made during the process, a spreadsheet of their costings, and a reflective summary of what they learned and how they would like to approach the next project. The student can thus demonstrate their ability to generate and analyse data, come to coherent conclusions about their topic of investigation, and present their findings in discipline-specific formats. Giving employers and industry partners access to the course and encouraging their participation assists teachers in ensuring teaching, learning and assessment are appropriate to the discipline.

Considering Teacher Dispositions

Unitec leadership recognised that in order to fully integrate eLearning into the Living Curricula, institutional capability had to be developed and support structures provided to enable an optimal response to the new demands being posed (Roder & Rata-Skudder, 2012). Whilst some academic staff embraced the opportunity to experiment and innovate independently, many highly capable teachers in the face to face environment were challenged by these changes.

Recognition of Moodle's affordances may be dependent on the dispositions of the teacher (John and Sutherland, 2005). Despite the design and intent of a tool, it is not necessarily the technology which inherently drives its educational application but the culture, context, and the dispositions of the users which will impact how the tool is employed. Existing Unitec research validates this hypothesis, "the radical pedagogical changes … were not because of the technology itself, but rather how it was used" (Narayan, 2011, p. 899).

Thornton (2006) defines dispositions as "habits of mind ... that filter one's knowledge, skills, and beliefs and impact the action one takes in a classroom..." (p. 62). As observed by Carr et al. (2010) "learning includes knowing why, knowing when and where, and knowing how, to use knowledge and ability" (p. 16). An individual's circumstance and experience impact their disposition, and therefore the ways in which they approach new and unfamiliar learning contexts. Dispositions therefore "are the source of the recognition (or misrecognition) of learning opportunities and provide strategy and motivation for the inevitable improvisation that is learning" (Carr et al., 2010, p. 15).

It is well known that lack of training and support impacts negatively on teacher competence, confidence and motivation in integrating the use of ICTs (Guskey, 2002, Overbaugh & Lu, 2008). Conversely, teachers who can confidently use technologies in their practice are likely to understand the benefits and pedagogical potential of ICT integration (Bingimlas, 2009). The Ministry of Education (2007, cited in Carr et al., 2010, p. 16) suggests that as learners successfully develop competencies they become more inclined to apply them and recognise the opportunities and reasons for doing so.

However, the dispositions of a teaching practitioner may not be immediately transferable when confronted with a vastly different teaching context. Resnick (1987) found that when people are encouraged to implement a particular learning strategy, they may do so successfully in the short-term or familiar contexts, but will subsequently fail to apply the same strategy to other opportunities. Zhao et al. (2002) concluded that teachers who engaged with new innovations that significantly differ from their usual practices, and the cultural norms of their teaching environments are generally ill-equipped for success. Therefore, where teachers struggle to apply existing teaching dispositions and strategies to new situations, the need for carefully constructed support is paramount. Claxton and Carr (2004) suggest "the environment may need to invite learners to participate, actively engage them and include their prior knowledge in conversations and interactions of joint attention, or provoke them to recognise opportunities that are unfamiliar and new" (cited in Carr et al., 2010, p. 18).

In studying the conditions necessary for technology innovation in classrooms to take place, Zhao et al. (2002) found three significant factors for success: technology proficiency, pedagogical compatibility, and social awareness. They found that "teachers need to know the affordances and constraints of various technologies and how specific technologies might support their own teaching practices and curricular goals" (p. 489). Their studies showed that teachers needed support from people beyond their usual sphere of interaction. Additionally, Tishman, Jay and Perkins (1993) suggest thinking dispositions are learned through a process of enculturation, and use four elements in teaching thinking dispositions: modelling, explanations, peer interactions and both formal and informal feedback. Interviews with Unitec Academic staff have revealed this approach can work in the context of this learning institute. "At the eLearning mini symposiums you see how Moodle can be utilised and hear staff talking about successes they've had, so I see scope for being innovative and creative in teaching" (Unitec academic staff member, 2012).

Summary

Moodle offers a wide range of ways in which people can create representations of their knowledge and share them, and these affordances align closely with the characteristics of Living Curricula. On the one hand, the affordances of Moodle can help encourage specific design-intended behaviours in teachers and learners, and the Unitec experience illustrates the usefulness of Moodle as a Trojan horse for covertly challenging existing technology mediated teaching practices, and introducing those practices in a way that is better aligned with the principles of social-constructivism, and Living Curricula. However the perception of the teacher influences how or whether the affordances of Moodle tools are recognised. Explicit modelling of optimal tool use is likely to encourage users to adopt those behaviours afforded by the technology. In preparing teaching staff to recognise the pedagogical affordances, further intentional strategies need to be employed to address the teachers' perceptions if they are to successfully transfer their teaching dispositions to the new context of learning technologies.

Current discourse suggests that in equipping teachers to identify the pedagogical affordances Moodle has to offer, teachers as learners need to be actively engaged in conversations which connect their prior knowledge and perceptions to new contexts, support their understandings and the pedagogical implications of the technology, and the place of technology in their social context and broader learning culture. Formal and informal interactions with other practitioners, both within and beyond the teacher's usual sphere, are important in preparing teachers to understand the usefulness of various technologies in reflecting, extending and transforming existing pedagogical approaches. Additionally, importance is placed on the provision of best practice examples, feedback, explanations and modelling of the pedagogical affordances of technologies for learning.

The dispositions required in recognising the affordances of Moodle and integrated learning technologies can be learned and transferred, but the processes which encourage application of enabling dispositions need to be iterated in order to encourage ongoing success for teachers implementing technologies in their teaching practice. Through challenging a stance, teachers will gradually change behaviours and acquire the necessary skills, modifying their dispositions as a result. Dispositions can change over time, with the right teaching and technical support, and through facilitating opportunities for teachers to experiment, evaluate and learn from their collective experiences.

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Author contact details:

Tabitha Roder, troder@unitec.ac.nz
Nicoletta Rata-Skudder, nrata@unitec.ac.nz