Creative and Imaginative Scholarship: Lifelong Learning for an Unpredictable Future

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Abstract: The continued process of economic globalization challenges education as a means of achieving individual success in a constantly changing society. Education of today might be obsolete tomorrow in a technologically driven social environment. The impact of technological change on society dictates that the future will belong to the knowledge worker who embraces the concepts of lifelong learning and self-directed learning. As a platform for lifelong learning, a proficiency in generic skills becomes an imperative and sustainable approach in education today ensuring adaptability in the future. This approach prepares the learner for creative adaptability to address the challenges an evolving society may present in an imaginative future. Integration of practice-based learning, place-based learning, project-based learning and industry-based learning are four of the more sustainable and holistic approaches in education systems to achieve this lifelong learning. Practice based learning synonymous with work based learning is centred on experiences emerging from the workplace. Place-based learning is an “approach to curriculum that is grounded in students’ own lives, community, and region” (Smith, 2002, p.31). Project-based learning is an approach focused on a final project that emphasizes learning that is long-term, interdisciplinary and student-centered. Industry based learning puts theory into practice giving hands-on, real life, industrial experience. Thus the new paradigm shift in teaching and learning at tertiary level is aimed at producing global citizens armed with transferable skills that are mobile, bridge distances, are ageless, are globally recognised and prepare for a constantly changing society of the future. These transferable skills involve the inculcation of capabilities that nurture people for the on-going, dynamic journey of learning. This paper expounds the relevance of the synthesis of knowledge, skills and competencies in the teaching and learning practices currently adopted at Unitec New Zealand as a creative and imaginative assurance for scholarship in the unpredictable future.

Keywords: Transferable Skills, Practice-based Learning, Place-based Learning, Project-based Learning and Industry-based Learning, Life Long Learning

Knowledge, Skills and Competencies that know no Geography

Education for the future needs to be directed towards the knowledge worker, a term first coined by Drucker (1959) in his book, Landmarks of Tomorrow. A knowledge worker is anyone who works for a living by applying knowledge and includes professionals, academics and students of all disciplines. Drucker (1959) rightly predicted that major global changes would be triggered by advances in information technology. He argued that knowledge has become the central, key resource that knows no geography as it is globally accessible to both educator and learner.

Whilst Drucker’s predictions are valid, there has been less focus on invisible skills, particularly on how learners think and apply knowledge when performing tasks. This makes a
point of difference between having knowledge and applying knowledge which transforms into skills. With emerging information technological changes, work processes are no longer considered to be skills that are definable and recurrent. Practitioners at all levels are required to think independently and to act effectively in a diverse dynamic workplace environments.

Daily work presents challenges and anomalies that fall far outside conventional job descriptions and need to be addressed quickly, competently, and innovatively. This requires continuous opportunities for improved and more effective ways of applying knowledge. For this to occur, critical thinking skills and personal motivation to “think outside the box” are vital attributes. This necessitates reflection in action and sometimes on the spot decision making. These generic transferable skills are globally recognised in education today for competencies in the future.

**Yesterday’s Future Today’s Past**

With unprecedented breakthroughs in technology and the global dynamism and mobility, educators are challenged more than ever before, with the need to train graduates in lifelong transferable skills so as to be adaptable in fast-changing global environments. Electronic databases of today have replaced long hours spent physically and laboriously in libraries. Thus the librarians’ job description and researchers’ skill base have been modified significantly. Email, Twitter, Facebook and other digital technologies have replaced traditional modes of communication, consequently transforming the nature of general tasks, functions, responsibilities, knowledge and skills of position descriptions.

Change is inevitable and despite attempts to predict change, visualising the future presents uncertainty. The old educational axiom states that half of what students learn in school will be outdated by the time they are employed in the real world. This idea is reflected in today’s curriculum. Change causes many anxieties yet humans seem to have a remarkable propensity for rapidly assimilating new ideas and ways of action once they are perceived to fit into reality (Fidler, 1997). Hence educators should focus on preparing the knowledge worker to always expect the unexpected.

**Creative, Imaginative Scholarship for Sustainable Lifelong Learning**

The skills for lifelong learning include the ability to adapt to rapid change, to tolerate uncertainty, to be open to new ideas, to reflect on practice and implement and evaluate action. To achieve sustainable lifelong learning skills, today’s graduates need to be critical thinkers, problem solvers, analytical investigators and creative, imaginative scholars if they are to be assured of future success. This creative, imaginative scholarship is vital to the rapidly changing workplace. The interdisciplinary nature of work means that the learners need to be able to integrate knowledge and skills from a number of disciplines as well as have the interpersonal skills to be an effective team member (“Problem Based Learning”, 2002, para. 2).

Life-long learners are essential in the uncertain future where new types of problems and new information surfaces exponentially. This new understanding, that lifelong learning is the way forward, has given rise to a paradigm shift in higher education, one from a focus on teaching to a focus on learning (Barr and Tagg, 1995). This new paradigm of learning based
on a similar philosophy of teaching and learning is being adopted by many learning institutes around the world.

The Bachelor of Applied Technology program offered by the Faculty of Technology and the Built Environment (FTBE) at Unitec Institute of Technology has incorporated 15 teaching and learning principles (Figure 1) that establishes the foundation for lifelong learning.

![Figure 1: The 15 Principles of Teaching, Learning and Assessment (Unitec, 2009, p. 9)](image)

These 15 principles are embedded in the curriculum and achieved through integration of, practice-based learning, place-based learning, problem-based learning and project-based learning as four of the more sustainable and holistic approaches in education systems to achieve this lifelong learning. These forms of learning develop in the student the invisible skills so necessary in preparation for an unpredictable future.

**Practice-based Learning**

Practice-based learning synonymous with work based learning is explained by Medhat (2007) as learning from undertaking paid or unpaid work either through work placements, in-house training and learning through work or professional development, in conjunction with formally accredited education programmes. Knowledge creation and the deployment of new knowledge in the workplace categorises workplace itself as a site of learning and knowledge production (Camm, Nixon, Smith, K. & Stafford, 2006). Work based learning supports the personal and professional development of students who are already in work and the focus of the learning and development tend to be on the student’s workplace activities (Brennan & Little, 2006).
According to Rossin and Hyland (2003), students can achieve skills and employability goals with work based learning through which their career prospects are enhanced by being able to transfer specific skills and knowledge to other work environments. Practice based learning is enhanced through the overseas work experience of international students and immigrant students. This multicultural classroom environment emulates a typical workplace situation not merely local but also global. Unitec in partnership with some Malaysian technical institutes has a memorandum of understanding that allows students an option of completing their Bachelor Degree in New Zealand. These students bring with them a different perspective which enhances the interactive learning for both Malaysian and New Zealand students. Unitec has similar partnerships with USA, Mexico, Japan, China and Europe.

**Place-based Learning**

Smith (2002) describes placed-based learning as an “approach to curriculum that is grounded in students’ own lives, community, and region” (p. 31) uses a “wide-range of experiences that allow students to connect what they are learning with their own lives” (p. 587). Much interest and relevance is added to students’ learning when the local environment is used as the hub from which important content and concepts can be derived (Ford & Dack, n.d). According to Lewicki (2007) place-based learning encourages lifelong skills such as precise observation, recording, data analysis, effective collaborative skills, recognition and utilisation of dynamic systems, ability to cooperate through a shared dilemma and draw conclusions independent of authority. Unitec Institute of Technology students on the Bachelor of Communication Degree participate through short term employment in community projects and local events such as Air New Zealand Fashion Week. This immersion gives authenticity and is a proven example of the effectiveness of place-based learning. This experience adds to the learner’s portfolio for future employability by creating a globally recognised profile.

**Problem-based Learning**

Problem-based learning is a learning approach in which complex problems serve as the context and the stimulus for learning. This form of learning according to Major and Palmer (2001) is based on students working in teams to solve one or more complex and compelling “real world” problems. With carefully selected and designed problems the learner can acquire lifelong skills of “critical knowledge, problem solving proficiency, self-directed learning strategies, and team participation skills” (Donnelly & Fitzmaurice, 2005, p. 88). The first year of the Bachelor in Applied Technology program students embark on a problem-solving path. Each week the topic is presented as a problem to solve in a collaborative group. After research and group discussion, solutions to these problems are presented to teachers and peers for evaluation. A different problem solving technique is used each week. These problem-solving delivery modes give an insight into real world situations. Not only does this stimulates critical thinking in the group but simulates workplace scenarios. Figure 2 below is a typical illustration of the problem given to the group.
Project-based Learning

Project-Based Learning is defined by Donnelly and Fitzmaurice (2005) as an “individual or group activity that goes on over a period of time, resulting in a product, presentation, or performance” (p.88). With Project-Based Learning students envisage concepts, collect and interpret data, and connect theory to the real world often with the utilisation of technology. When students engage in this blended learning within a real life project they are motivated, prepared and confident to function in workplaces of the future and become effective players on the global stage. The electrotechnology students on the Bachelor of Applied Technology are involved on projects in the reputable company Schneider Electric in liaison with Unitec Institute of Technology. This gives authenticity to the learning experience and students are immersed in real world projects that gear them for lifelong learning. The summative course evaluation is a collaborative process between electrotechnology lecturers and Schneider Electric on-site supervisors.

Integration of Competences and Distinctive Intangible Capabilities

Tertiary level education aims primarily to inculcate competences in the technical skills specific to the discipline. In addition, distinctive intangible capabilities that add value and contribute to superior performance are vital and achieved through integration of practice-based
learning, place-based learning, project-based learning and problem-based learning. These invisible generic skills prepare learners for an unpredictable future. The extract below retrieved from the Bachelor of Applied Technology handbook highlights this holistic approach to blended learning.

“To reflect the relationship between the technical skills and its relationship with its surrounding society as a whole and how this integrates and blends with the environment and the community, graduates from this programme receive the award of the ‘Bachelor of Applied Technology’... This will show any potential employer the specialised nature of the graduate as well as the generic capabilities in problem management, communication, problem solving, and research.

Applied technology is specifically focused on practice - ‘it’s what we do’. It is a creative, purposeful activity in which ideas and techniques are used for developing or modifying products, systems or environments. Knowledge and skill are combined with available resources to help solve defined, practical problems... Because it is specialised, technologists have expertise in particular and coherent areas of endeavour - such as technical and trades areas like electro-technology or boatbuilding. Although the boundaries between areas are always blurred, there are nonetheless principles and processes that are common. Applied technology creates, within its own practice, the development of learning skills which grow through practice” (UNITEC, 2009, p5).

The integration of practice-based learning, place-based learning, project-based learning and problem-based learning is an extension of David Kolb’s (1984) learning styles model and experiential learning theory.
Figure 3: Integration with David Kolb’s (1984) Experiential Learning Theory

Through the assimilation of practice-based learning, place-based learning, project-based learning and problem-based learning, students in a programme develop a framework of capabilities for integrating their knowledge, experiences and challenges beyond graduation so they can use their initiative and to continue to grow in themselves. In the Bachelor of Applied Technology at Unitec Institute of Technology the generic capabilities are as shown in figure 4 below.
The skills and capabilities gained are more than just technical. Graduates could also find employment in any other field outside their specialisation, by employing their generic capabilities developed through the programme. Skills gained through these generic capabilities are transferable to any global work context. The knowledge worker gains the confidence to function creatively and imaginatively in the unpredictable future.

**Resourceful, Resilient, Adaptable Global Citizens**

The relevance of the synthesis of knowledge, skills and capabilities in the teaching and learning practices currently adopted at UNITEC New Zealand underpins creative and imaginative assurance for scholarship in the unpredictable future. The vision statement of Unitec Institute of Technology “Experience real world learning” presents opportunities for lifelong, holistic and collaborative learning through its programmes. Transferable skills gained through integration of practice-based, place-based, project-based and problem-based learning, inculcate capabilities that nurture people for the on-going, dynamic journey of learning. Thus education that channelises creativity and critical thinking generates transferable skills that are lifelong and globally applicable. The ultimate objective is creating resourceful, resilient, adaptable global citizens confident to confront unexpected future challenges. To conclude “the future is not a result of choices among alternative paths offered by the present, but a place that is created…created first in the mind and will, created next in activity” (Schaar, 2003).

**References**


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