UOW Technology-Enriched Learning Strategy 2015–2019

March 2015

1. Executive Summary

Background and context

This Strategy builds on previous UOW achievements in technology-enriched learning. It offers a plan for implementation of technological aspects of the UOW Education Strategy and the UOW Curriculum Model.

Vision Statement

The Strategy supports UOW's broad vision to build capacity as a digital university (see ***Glossary of terms***), and deliver "student-centred, challenging programs to the highest standards" (UOW Strategic Plan). It envisions UOW's future achievements in the areas of digital literacy of students and staff, the student experience, staff support and professional development, technology and university reputation.

Scope

Aspects of the Strategy apply to all teaching staff, courses and subjects. Other aspects will apply to selected courses and subjects or will be implemented by interested academic partners. While the principles in this Strategy apply to all campuses, the actions for implementation are at this stage focused on Australian sites. Further work will be done with Transnational Program Coordinators to apply the principles of technology-enriched learning to all sites and courses.

Aims

This Strategy aims to enhance student learning through an optimal blend of digitally rich and face-to-face opportunities, support 'anywhere, anytime' learning, foster students' development of digital literacies relevant to disciplines and professions and further UOW's capability and reputation as a digital university.

Principles

A number of principles underpin the strategy's success. These include the need for:

- Flexible, mobile access to subject resources for students
- Student engagement, in areas such as academic integrity, digital literacy and opportunities to participate in real-world authentic learning
- Staff support through professional development
- Faculties and schools being able to adapt the Strategy to their contexts by choosing the tools and methods which are appropriate for each discipline
- No student being disadvantaged in meeting UOW course requirements due to lack of access to technology on campus
- UOW to continue to invest in infrastructure to provide access to world-class technology
- Evaluation, based on research findings, analytics and other data, to underpin future development.

The success of the Strategy is also contingent upon adequate funding and resources.

Strategy

Digital Innovation outlines the implementation of major UOW commitments, Hybrid learning@UOW, MyPortfolio@UOW, Digital Learning Thresholds and Open Learning.

Infrastructure addresses enablers such as digital storage, the eLearning system, cloud computing, mobile and wireless connectivity.

Support and training addresses the professional development needs of students and academic, casual and professional staff and the on-the-ground support and opportunities available to academic staff.

Data and evaluation focuses on learning analytics and on evidence-based evaluation of UOW's implementation of technology-enriched learning.

2. Background

UOW has a long history in the use of technology to enhance learning. It has been a pioneer of lecture capture, video conferencing and video streaming, and an early adopter of a digital learning platform. This *Technology-Enriched Learning Strategy* builds on previous plans and a history of achievement to outline how UOW will position and strengthen its technology-based learning offering in 2015 and beyond.

Technology-enriched learning offers both challenges and opportunities. Sector-wide shifts to new modes of global competition; expectations of students for increasingly flexible education; the needs of both staff and students to develop digital literacies; the expertise required for successful development of pedagogically sound digital media; the changing nature of academic work (and related workload issues); the demands on information technology infrastructure; are all areas requiring a considered, strategic response. This Strategy offers a model for UOW's direction and actions in technology-rich learning for the period 2015-2019.

3. Current UOW Context

This Strategy has been prepared in the context of several recent UOW initiatives to advance digital learning and teaching practice. The UOW Education Strategy 2013-2018 has identified "transforming our curriculum" and "embedding emerging education technologies to enhance teaching and learning" as priority areas. The UOW Curriculum Model 2014 develops these ideas in more detail, identifying technology-enriched learning as one of four principles and stipulating a transformative approach to course review which incorporates Hybrid learning@UOW and MyPortfolio@UOW. Underpinning progress with digital learning are the Digital Learning Thresholds, which provide for a phased introduction of minimum requirements for every UOW subject as a baseline for UOW's future success as a digital university.

4. Acknowledgments

This Strategy was developed by the Technology Enhanced & Open Learning Task & Finish Group, in consultation with the university community. All faculties and relevant units were invited to nominate members. Thank you to all members of this group, who offered their time and expertise:

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Kate Schreiber (SMAH)
Ray Stace (LTC)
Shashank Suresh (Student Representative)
Andrew Whelan (LHA)

Consultation across the university took place from December 2014 to February 2015. Thanks are due the over 100 members of the university community who actively contributed. This Strategy draws on their thoughtful responses and suggestions. Particular thanks are due to those who organised round table discussions in their faculty or school and summarised these as cogent responses which were informed by a disciplinary perspective.

5. Vision statement

UOW's broad vision is to build capacity as a digital university to 'deliver student-centred, challenging programs to the highest standards in a technology-rich learning environment that attracts high quality students and develops all students for their graduate roles in society and the global workplace': *UOW Strategic Plan 2013-2018*.

In an increasingly competitive higher education sector, deciding where we position ourselves in the digital world will be critical. A distinctive UOW learning experience will need to be balanced with developments designed to meet emerging student and employer expectations. The latter will typically include opportunities to engage with current real-world technologies and, for postgraduates in particular, the availability of mobile 'anywhere, anytime' learning. At the same time, learning and teaching will need to drive investment in technology, rather than vice versa. This implies selection, with a focus on technologies that deliver positive outcomes for students and staff.

UOW's vision for technology-enriched learning therefore includes:

Digital literacy Our students will be supported to become adaptive, responsible, autonomous users of technology. Our graduates will be able to respond quickly and confidently to rapidly changing technologies in their field and embrace emerging opportunities in an increasingly digital world.

Student experience Our students will be at the heart of what we do in online, face-to-face, open and hybrid learning environments. We will continue to focus on securing and enhancing world class technology-enriched learning opportunities for all our students, as part of an exceptional educational experience.

Staff support and professional development Our academic, sessional and professional staff will be central to our success in a highly competitive and rapidly evolving digital higher education landscape. We will continue to value our vibrant, highly motivated staff and invest in the development of staff through capability and confidence building, and recognition of innovation and excellence.

Technology We will provide technology-rich learning and teaching environments, adapting to meet the evolving needs of our students. We will continue to innovate in the use of applications and tools and to respond to new forms of digital interaction. We will leverage analytic insights to offer a better user experience for staff and students, and apply those technologies (whether online or otherwise) with strong potential to enhance learner knowledge development, creativity, collaboration and productivity.

Reputation UOW will be known nationally and internationally as a dynamic, digitally-savvy university which offers high-quality learning platforms and a commitment to flexible, digitally-rich learning experiences. UOW's evidence-based approach to digital learning will enhance our reputation as a leader in technology-enriched learning research.

6. Aims

The principles and actions outlined in the strategy are designed to:

- Transform student learning to maximise success
- Meet the needs of the 21st century learner by providing access to digitally rich learning experiences anywhere, anytime
- Prepare students for a digital economy by fostering adaptive learners who are experienced in 'learning how to learn' using a variety of real-world, current and emerging technologies
- Enhance UOW's capability and reputation as a digital university
- Expand the reach of UOW for recruiting students, through open learning and online delivery.

7. Principles

1. Learning and teaching will be delivered through an optimal, evidence-based blend of online, mobile and face-to-face experiences, including self-directed and peer learning. For some subjects, the optimal blend may be primarily face-to-face; for others, it may be substantially or fully online
2. Staff will be supported through professional development, access to support and resources and opportunities to participate in special interest groups
3. Students' work/study/life balance will be supported by flexible, mobile access to content and resources
4. Students will be oriented to a range of digital learning tools through learning activities in selected subjects designed to:
    - enhance student digital literacy
    - encourage creative, innovative and safe use of technologies
    - understand and develop their commitment to academic integrity
    - support real-world, authentic learning through rich participatory networks and induction into discipline-specific technologies
    - orientate them to the complex ethical dilemmas of the contemporary digital environment, enabling them to become responsible digital citizens
5. Faculties and schools will be encouraged to take an adaptive approach to implementation, including choosing tools and methods which are sensitive to the contexts in which courses and subjects are located
6. Students' communication skills, including English language learning needs, will be addressed as part of the design of digital learning environments and through opportunities for multimodal learning and assessment of learning
7. Careers and professional practice activities for students will include supporting students to negotiate and promote their digital identities as confident emerging professionals
8. Campus spaces at every location will enhance network connectivity and support a comparable range of online, face-to-face and socially-connected learning activities
9. No student will be disadvantaged in meeting UOW course requirements due to lack of access to technology on campus
10. A selection of open learning opportunities, developed in partnership with interested academics, will:
    - expand access to key UOW expertise for existing students, alumni and an international public
    - offer digitally-rich learning experiences that empower UOW graduates to succeed in a growing digital economy
    - provide a new pathway to university, following further exploration and the development of suitable forms of assessment
11. UOW will continue to invest in infrastructure to provide access to world-class technology
12. Evaluation based on research findings, analytics and other data will underpin future development
13. Access to technology will be device and operating system agnostic, where possible and appropriate, and underpinned by universal design principles.

8. Scope

This Strategy applies to all UOW coursework degrees. Some aspects of this Strategy, notably the Digital Learning Thresholds, apply to all teaching staff and subjects. Other aspects, such as the use of ePortfolio and hybrid learning strategies within the UOW Curriculum Model, are implemented at the course level and may involve specifically identified subjects. Finally, some aspects such as the development of digitally-rich learning experiences will appeal mainly to innovators within each faculty or school, supported by workload allocations and/or budget. There is no expectation that every teaching academic will become a digital expert. Time and resource constraints are acknowledged.

While the principles in this Strategy apply to all campuses, the actions for implementation are at this stage focused on Australian sites. Further work will be done with Transnational Program Coordinators to apply the principles of technology-enriched learning to all sites and courses.

9. Benefits to students, staff and university

Benefits for students include:

- Flexibility to reach their full potential for learning in an increasingly time-pressed 21st century online and mobile world[1]
- Access to technologies which enhance both on and off-campus learning through more interactive, creative and networked learning opportunities[2]
- Expertise and confidence gained in using technologies and knowledge sources relevant to their future professions, and which enhance student employability[3]
- Lower cost barriers to entry for students through open learning pathways
- A selection of online courses (predominantly postgraduate) which offer ready access to quality-assured digital learning experiences for 24/7 learning, anywhere and anytime
- For second language learners, access to opportunities to develop English language proficiency within digital learning environments.[4]

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1 Gordon N (2014), *Flexible Pedagogies: Technology Enhanced Learning*, Higher Education Academy, York.

2 Loveless A M (2007), *Creativity, Technology and Learning – A Review of Recent Literature*, Future Lab, University of Brighton, Brighton, published at http://archive.futurelab.org.uk/resources/documents/lit_reviews/Creativity_Review_update.pdf.

3 Gray L (2013), *Enhancing Student Employability through Technology-Supported Assessment and Feedback*, JISC, published at http://www.jisc.ac.uk/guides/enhancing-student-employability-through-technology-supported-assessment-and-feedback.

4 In language education, it is widely recognised that providing a multimodal environment for learning content and collaborating with peers (discussion boards, collaborative blogs, digital stories, etc) allows students to engage in language practices that are authentic and far more productive than traditional literacy practices. Also, experiencing and producing written language in a wide range of forms for different purposes (eg the annotated bibliography, the digital story, the oral presentation, the media release etc) has been shown to facilitate and even accelerate students' language development: Archer, A (2006), "A Multimodal Approach to Academic Literacies: Problematizing the Visual/Verbal Divide", *Language and Education*, vol 20 no 6, pp 449-462; Kress G and Van Leeuwen T (2001), *Multimodal Discourse: The Modes and Media of Contemporary Communication*, Arnold, London; New London Group (1996), "A Pedagogy of Multiliteracies: Designing Social Futures", *Harvard Education Review*, vol 66 no 1, pp 60-92.

Benefits for staff include:

- Access to a range of learning analytics data, which can be used to enhance student learning in the discipline[5]
- Availability of publicly available resources for discipline-based content, eg Creative Commons artefacts, YouTube videos, Open Educations Resources (OER) readings[6]
- Research opportunities in new and emerging areas
- Access to professional development and support to gain confidence in using digital technologies to enhance learning and teaching[7]
- Recognition for innovation and excellence, through UOW reward and recognition programs which value contributions to university strategic priorities.

Benefits to the university include:

- Future-proofing UOW's business model, with awareness that digital technologies and innovation have disrupted all manner of established industries. While online education has existed since the 1990s, it has been in the last 2-3 years that the pace and disruptiveness of change have accelerated in an increasingly challenging fiscal climate[8]
- Enhancement of our teaching and research brand through delivery of high profile, fully online open courses which will attract the very best students and academics globally
- Maximising the benefits of emerging practices which are transforming the ways education is delivered and supported, for example through applications that enable real-time student feedback,[9] and through delivery of education to remote and regional areas in both the developed and developing world
- An extended educational digital footprint to meet the UOW mission for regional community development[10]
- Robust infrastructure to facilitate student, teacher and researcher collaborations, encourage innovation and, through strategic partnerships and alliances, enable success in a competitive global environment
- An enhanced reputation for offering a rich, on-campus experience, supplemented by cutting-edge digital technologies.

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5 For example, Campbell et al's study describes a predictive analytics model linked to a range of interventions at Northern Arizona University. This saw positive gains in student performance and retention: J P Campbell, P B DeBlois and D G Oblinger (2007), *Academic Analytics: A New Tool for a New Era*, published at http://www.educause.edu/library/resources/academic-analytics-new-tool-new-era. See also Dawson S P, McWilliam E and Tan J P L (2008), "Teaching Smarter: How Mining ICT Data can Inform and Improve Learning and Teaching Practice", in *Hello! Where are you in the landscape of educational technology? Proceedings ascilite Melbourne 2008*, pp 221-230, published at http://www.ascilite.org.au/conferences/melbourne08/procs/dawson.pdf.

6 Hylén J (2006), "Open Educational Resources: Opportunities and Challenges." *Proceedings of Open Education 2006: Community, Culture and Content*, Logan (Utah), pp 49-63.

7 Rientie B, Brouwer N and Lygo-Baker S (2013), "The Effects of Online Professional Development on Higher Education Teachers' Beliefs and Intentions Towards Learning Facilitation and Technology", *Teaching and Teacher Education*, vol 29, pp 122-131.

8 *NMC Horizon Report 2015*, op cit.

9 Ellis C and Reynolds C (2013), *EBEAM: Evaluating the Benefits of Electronic Assessment Management: Final Report*, University of Huddersfield, published at http://jiscdesignstudio.pbworks.com/w/file/fetch/66830875/EBEAM%20Project%20report.pdf

10 Butcher N (2014), *Technologies in Higher Education: Mapping the Terrain*, UNESCO Institute for Information Technologies, Moscow, published at http://iite.unesco.org/pics/publications/en/files/3214737.pdf

10. Strategy for implementation

Furthering UOW's aspirations to achieve world-class standing in technology-enriched learning will require a committed, well-resourced and funded effort. Merely to keep pace with the current rate of change in learning technologies will require significant attention to learning and teaching development, curriculum renewal, innovative tool and resource development, infrastructure and data analysis. The following areas identify those with high student impact and high reputational outcomes.

Funding has been sought for both faculty activities and for central support services to work with faculties. The UOW decision on the level of TEL funding allocation awaits the outcomes of federal legislation. Details of resourcing will be made available following the TEL funding allocation.

DIGITAL INNOVATION

1. HYBRID LEARNING@UOW

Action	Timing	Proposed KPIs	Stakeholders
1.1 CTP Course Review Teams will embed practices and opportunities to prepare students to take their place in the workforce as digitally-literate professionals. (This will typically occur as part of scheduled course reviews)	2015 Q4 2019 Q1	A minimum of one UG course with significant student numbers reviewed in each faculty and agreed actions implemented; schedule agreed for remaining courses All remaining UG courses reviewed and progressively implemented	Executive Deans Associate Deans (Education) Heads of School Course Directors Discipline leaders, co-ordinators of majors Subject Coordinators Students Information Management and Technology Service Mobile Strategy Working Group Digital Governance Group Director, Learning, Teaching & Curriculum Head, Strategic Curriculum Development Head, Technology Enhanced Learning CTP Project Team University Librarian Disability Action Plan Committee Accessibility Working Group Faculty-based elearning designers/educational technology staff
1.2 CTP Course Review Teams will identify subjects in which to incorporate hybrid learning pedagogies (see ***Glossary of terms***), eg "flipped classrooms" and technologies designed to enhance learning. (This will typically occur as part of scheduled course reviews)	2019 Q1	Discussions held within each course team about how hybrid learning is embedded into a course, including agreement on the mix of digital learning and face-to-face interaction and the proportion of lectures which will offer digital alternatives (eg "flipped classrooms") to face-to-face teaching	
1.3 LTC and IMTS will explore various flexible modes including mobile delivery and, where appropriate, work with faculties to pilot implementation, taking into account the diversity of discipline areas	2015 Q1-Q2 2015 Q4 2016 Q1-Q2	Mobile strategy developed Two pilot projects designed Pilot projects implemented and evaluated	
1.4 LTC will work with faculties to identify and share good practice in hybrid learning	2015 Q3 Ongoing	Web site with case studies and examples established for teaching staff, including current UOW good practice Three workshops/seminars offered per year	
1.5 A Digital Learning Working Group will draw up guidelines for those developing or selecting learning technologies. These will address areas such as sustainability, intellectual property and disability access	2015 Q2 2015 Q3 2015 Q4 2016 Q1	Working group formed Guidelines drafted Consultation Guidelines finalised	

2. MY PORTFOLIO@UOW

Action	Timing	Proposed KPIs	Stakeholders
2.1 ePortfolio subgroup of the Learning Platform Steering Committee will identify UOW-supported or recommended eportfolio tools (including both dedicated software and free online content tools)	2015 Q2-3 2015 Q4	Pilots with Mahara and WordPress Potential tools evaluated; report and recommendations produced	Associate Deans (Education) Heads of School Course Coordinators Discipline leaders, co-ordinators of majors Subject Coordinators Students Information Management and Technology Services Director, Learning, Teaching & Curriculum Head, Strategic Curriculum Development Head, Technology Enhanced Learning Director, Graduate Career Development Industry/professional organisations University Librarian
2.2 MyPortfolio implementation group in collaboration with CTP team will develop resources to support MyPortfolio@UOW implementation	2016 Q1-2	Resources developed to assist teaching staff to implement recommended MyPortfolio tools and to provide user guides for students	
2.3 CTP Course Review teams will ensure that students are given the opportunities, skills and resources to develop and showcase a diverse set of "real-world", authentic digital artefacts and accompanying reflections to place in their MyPortfolio@UOW	2015 Q4 2019 Q1	A minimum of one UG course with significant student numbers reviewed in each faculty ePortfolio in all undergraduate courses	

3. DIGITAL LEARNING THRESHOLDS

Action	Timing	Proposed KPIs	Stakeholders
3.1 Faculties will complete the implementation of Phase 1 Digital Learning Thresholds (DLTs)	2015 Q2 2015 Q4	Faculties report to DVCA Gaps addressed for 2016	Executive Deans Heads of School Associate Deans (Education) Subject Coordinators Director, Learning, Teaching and Curriculum Head, Technology Enhanced Learning Senior Lecturer, Assessment & Feedback Director, Academic Quality & Standards
3.2 LTC will evaluate online assessment and feedback tools against a range of criteria including pedagogical soundness, use on diverse devices, regional accessibility, efficiency and flexibility	2015 Q2 2015 Q3 2015 Q4	Issues as identified in evaluation addressed Staff resources to support online submissions and feedback practice developed Professional development training in online submission and feedback practices delivered	
3.3 Faculties will implement Phase 2 DLTs	2016 Q3 2016 Q4 2017 Q1	Phase 2 implemented Faculties report to DVCA Gaps addressed	
3.4 Academic Quality & Standards will amend the Code of Practice – Teaching and Assessment to incorporate responsibilities for meeting DLTs	2015 Q2-Q3	COPTA amended	

4. OPEN LEARNING

Action	Timing	Proposed KPIs	Stakeholders
4.1 Manager, Open Learning and Manager, Academic Quality & Policy will convene a working party to develop a policy on MOOC quality and approvals processes, and a set of guidelines for development covering learning design, production options and licensing	2015 Q2 2015 Q3 2015 Q4 2016 Q1	Working party formed Policy and guidelines drafted Consultation carried out Policy and guidelines finalised	Associate Deans (Education) Head, Technology Enhanced Learning University Librarian Director, Academic Quality & Standards
4.2 UOW will secure opportunities to develop new MOOCS which showcase areas of UOW's research strengths, in partnership with faculties and an international MOOC platform	2015 Q2	Partnership agreed (FutureLearn)	Deputy Vice Chancellor (Academic) Executive Deans/ADRs Director, Learning, Teaching and Curriculum Manager Open Learning Head, Technology Enhanced Learning
4.3 Participating Research Centres and Manager Open Learning will develop MOOCs as negotiated and maintain MOOCs once developed	2015 2016 2017	Two MOOCS developed (FutureLearn) Further two MOOCS developed Further two MOOCS developed	Manager Open Learning Head, Technology Enhanced Learning Participating Research Centres
4.4 LHA will work with OERu to develop a new open Graduate Certificate in International Studies	2015 Q4 2016	Three fully online subjects developed Subjects delivered	Executive Deans Associate Deans (Education) Course Directors Subject Coordinators Strategic Course Development Committee Head, Technology Enhanced Learning Manager Open Learning
4.5 Faculties will produce online courses to meet postgraduate market demands in niche disciplines and specific areas of need (with ELP needs included in learning design)	2015 Q2 2015-2018	Agreement on courses to be offered online Selected courses developed for 2017-2019 intakes	
4.6 At least one faculty (currently SOC) will conduct an Open Education Resources textbook pilot	2015 Q1 2015 Q3-Q4 2016	Identify a 100 level subject to support with OER text Pilot resource developed Pilot resource delivered and evaluated	Associate Deans (Education) Course Directors Subject Coordinators Manager, Open Education Head, Technology Enhanced Learning Library
4.7 CTP Course Review Teams will consider how the in-course use of MOOCs (UOW or non UOW) might support students in their learning and reduce costs to students	2015 Q1 2015 Q3-Q4 2016	Identify a 100 level subject to support with MOOC Pilot developed Pilot delivered and evaluated	
4.8 Manager, Open Education will maintain a repository of resources on the UOW YouTube channel and work with faculties to encourage creation and reuse of OER videos in teaching	2015 Q1 2015 Q3-Q4 2016	Identify a subject to support with UOW YouTube Pilot developed Pilot delivered and evaluated	

INFRASTRUCTURE

5. LEARNING SPACES & TIMETABLING

Action	Timing	Proposed KPIs	Stakeholders
5.1 Learning Spaces Task and Finish Group will review UOW's current approach to learning spaces and timetabling and make recommendations for how these can accommodate a diverse range of delivery methods	2015 Q2 2015 Q3 2015 Q4 2016 Q1 2016 Q3	Review and first phase consultation Data gathering and modelling Consultation Final strategy Implementation, including conversion of two lecture spaces to facilitate collaborative active teaching styles; development of two model collaborative workshop spaces; development of a technology-enhanced testing space for trialling of new learning designs.	Learning Spaces Task and Finish Group Facilities Management VCAG University Space and Infrastructure Advisory Group

6. ANYWHERE, ANYTIME LEARNING

Action	Timing	Proposed KPIs	Stakeholders
6.1 IMTS will improve wireless technology at on-shore campuses	2015 Q2 2015 Q3-Q4 and ongoing	Upgrades delivered as per 2014 project plan 2015 wireless project tba	Information Management and Technology Services Faculties Student Software Access Working Party Director, Learning, Teaching and Curriculum Director, Student Services LPST
6.2 Student Software Working Party will review the range of software offered across the institution with a view to extending this where appropriate and standardising the interfaces in UOW computer labs	2015 Q2 2015 Q4-2016 Q1 2016 Q5-2017 Q1	Student Software Access Working Party will be formed to evaluate needs and solutions Recommendations & consultation Implementation	
6.3 IMTS will build capabilities in cloud technology and mobile learning	2015 Q2-Q3 2015 Q2-Q3	Faculty information on current use of BYO devices and cloud applications evaluated and report prepared Usage and access guidelines for collaboration and storage using cloud technology developed	
6.4 IMTS in collaboration with Student Services and LTC will explore a portal solution for students to have a single, device agnostic point of access for study, collaboration and communication	2015 Q3-Q4 2016 Q1-Q2 2016 Q4	Explore student portal solution and make recommendations Design and test with stakeholders Implementation	

7. LEARNING PLATFORM

Action	Timing	Proposed KPIs	Stakeholders
7.1 Learning Platform Steering Group will carry out regular reviews of the learning platform suite of tools to meet user needs	2015 and ongoing	Further development work carried out on Moodle tools to make these more mobile friendly; ongoing work to meet user needs including engagement with second generation virtual learning environments A clear process for platform amendments established	Learning Platform Steering Group Faculties Information Management and Technology Services

8. DIGITAL STORAGE CAPACITY

Action	Timing	Proposed KPIs	Stakeholders
8.1 IMTS will review digital storage capacity and explore and recommend solutions	2015 Q2-Q3 2015 Q4 2015 Q4	Evaluate current and future needs, including in faculties Develop business model eg forecasting for storage requirements, policy for archiving/retention of sites Identify solutions to better use space eg Office 365	Information Management and Technology Services Director, Learning, Teaching and Curriculum Faculties

STUDENT AND STAFF SUPPORT & TRAINING

9. PROFESSIONAL DEVELOPMENT

Action	Timing	Proposed KPIs	Stakeholders
9.1 LTC will enhance Continuing Professional Development (CPD) modules and develop new modules and resources as required (face-to-face and/or online) to support staff capacity to deliver technology-enriched learning	2015 Q3-Q4 2016 Q2-Q3 2016 Q4	Incorporate technology-enriched learning into existing CTP modules Develop CPD opportunities on topics such as open and hybrid learning Evaluate effectiveness and reach	Head, Teaching Development Associate Deans (Education) Director, Learning, Teaching and Curriculum Teaching staff Project Manager, Digital Literacy Library Learning Development Manager, Open Learning Students
9.2 LTC Digital Literacy Projects will provide both students and staff with workshops and resources in the use of digital literacies and concepts	2015 each session 2015 Q3-Q4	Offer up to three face-to-face workshops at Wollongong and each regional campus, supplemented by a number of online and peer-led workshops and presentations Plan and deliver workshops and resources for staff	
9.3 LTC and faculties will provide academics with developmental opportunities as part of projects on digital learning technologies, eg mentoring, practice-sharing, showcasing	2016	Offer embedded developmental opportunities to at least one academic in each faculty, as part of participation in a technology-enriched learning project	

10. STAFF SUPPORT

Action	Timing	Proposed KPIs	Stakeholders
10.1 IMTS and LTC will scope, cost & implement an 'on-call' system to assist staff and students with teaching and learning technology questions, directing enquiries to the correct central or faculty/school helpdesks	2015 Q1-Q2 2015 Q3 2015 Q4	Framework developed Consultation carried out Implementation	Deputy Vice Chancellor (Academic) Director, Learning, Teaching and Curriculum Head, Strategic Curriculum Development CTP Project Team Head, Technology Enhanced Learning Library Executive Deans Associate Deans (Education) Faculty and University Workload Committees
10.2 CTP Project Team, in collaboration with Educational Designers, to provide information and advice to teaching staff interested in working with technologies to enhance learning, both on the educational design of subjects/courses and on the professional skills needed to develop and/or use specific technologies effectively	2015 Q2 2015 Q3 2015 and ongoing	Detailed CTP support plan developed based on recent CTP funding allocation Resources and points of contact put in place Two workshops, practice-sharing events or showcases offered each session	
10.3 University to carry out a review of workload policies and practices, taking into account the changing nature of academic work and the demands of digital teaching on staff	2015 Q4 2016 Q1	Role of academic and the workload implications of technology-enriched learning, including Digital Learning Thresholds, explored through review carried out in consultation with Faculty Workload Committees Recommendations developed for consultation	

11. SPECIAL INTEREST GROUPS

Action	Timing	Proposed KPIs	Stakeholders
11.1 LTC will offer showcases/special interest opportunities, including events, to assist in capacity building. These will bring together successful innovators and those seeking to enhance their technology-enriched learning practice	Ongoing	At least two special interest events a session	Director, Learning, Teaching and Curriculum Faculties Head, Technology Enhanced Learning Head, Teaching Development Faculties Director, WATTLE
11.2 LTC will establish online forums, special interest groups and discussion spaces. These will support innovation, collaboration and scholarship of teaching	2015 Q3 2015 Q4 Ongoing	Establish technology-enriched learning scholars in faculties, as part of CTP-funded faculty roles Provide tools & exemplars to support the formation of online networks / societies Support new and ongoing collaborations	

DATA & EVALUATION

12. LEARNING ANALYTICS

Action	Timing	Proposed KPIs	Stakeholders
12.1 Business Analysis and Learning Analytics (BALA) will continue to apply good practice in learning analytics to improve course quality, teaching and the student experience	2015 Q2 2015 Q3-Q4 2016	Student Dashboard in Moodle available in selected subjects for trial with early adopters Further subjects will be trialled Ongoing development of data-driven educational design	Director BALA Faculties Director Academic Quality and Standards

13. EVALUATION

Action	Timing	Proposed KPIs	Stakeholders
13.1 LTC will develop an evaluation model including assessment of technology-enriched learning innovations, collection of good practice case studies, estimation of user take-up, identification of benefits	2015 Q2	Design evaluation model	Executive Deans Associate Deans (Education) Courses Directors Staff Students IMTS Head, Technology Enhanced Learning Director BALA Head, Strategic Curriculum Development Manager Open Learning
13.2 LTC and IMTS will conduct surveys with stakeholders on perceptions of technology-enriched learning practices and opportunities at UOW, to provide both longitudinal data and feedback on opportunities for improvement	2015 Q3 2015 Q4 2016 Q4	Survey designed Survey conducted in collaboration with BALA evaluation services, working with students as research partners Survey repeated to evaluate progress	
13.3 LTC and IMTS will regularly assess emerging innovations and continue to evolve the UOW Technology-Enriched Learning Strategy into the future	2015 Q4 2016 Q1 and ongoing	Develop governance and protocols Implement	

11. Discussion and rationale

DIGITAL INNOVATION

1. Hybrid learning@UOW

Under the UOW Curriculum Model, all courses (initially, undergraduate courses) will incorporate a variety of hybrid learning experiences. "Hybrid" refers to an optimum combination of face-to-face, online, blended and/or open learning, in carefully designed, discipline-specific learning opportunities that enhance understanding of subject content, develop digital literacy, encourage active participation and develop students' capacity to manage their own learning (see ***Glossary of terms***).

Through Hybrid learning@UOW, students experience flexible, collaborative education which is marked by variety in learning tasks, resources and delivery. A rich suite of learning opportunities in a UOW course may include: highly developed eLearning sites with tools that assist in developing a deep understanding of content; online communication and collaboration tools; activities which incorporate social media; engagement with open web resources and international learning communities; peer-to-peer learning opportunities; real-world and/or virtual simulated professional practice; flipped classrooms.

Hybrid learning is combinatory. It is based on finding elements within subjects and combinations of subjects across the degree that deliver the best learning experience for students. It is optimum, implying the best combination, and does not privilege digital delivery. Hybrid learning draws on research which shows that finding the right synergies between digital resources and face-to-face learning enhances learning outcomes.[11] Face-to-face learning activities within hybrid learning are selected to maximise the benefits of time on-campus, eg work in small groups. Individual learning, reflection and analysis might be own-time, off-campus activities, using digitally-rich resources and/or traditional material. Hybrid learning recognises that students need to be bi-literate, so that they are capable of deep learning in both traditional and digital modes.

In early-stage development of hybrid learning, the digital, blended and open learning opportunities will typically be implemented in selected subjects. Hybrid learning design will also typically include subjects which are substantially face-to-face. As online delivery raises issues for some students with disabilities and/or who have poor access to technology, guidelines will need to be developed to support equity of access.

2. MyPortfolio@UOW

Under the UOW Curriculum Model, all courses (initially, undergraduate courses, followed by postgraduate courses) will incorporate opportunities for students to develop and showcase a diverse set of real-world, authentic artefacts and accompanying reflections on the progress of their learning and their achievement of course learning outcomes. This will be accomplished through assessments in selected subjects in each year of the degree, designed to produce discipline-specific professional work for inclusion in web-based collections and showcases.

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11 See for example B Means, Y Toyama, R Murphy and M Baki (2013), "The Effectiveness of Online and Blended Learning: A meta-analysis of the Empirical Literature", *Teachers College Record*, vol 115 no 3, pp 1-47. "The meta-analysis found that, on average, students in online learning conditions performed modestly better than those receiving face-to-face instruction. The advantage over face-to-face classes was significant in those studies contrasting blended learning with traditional face-to-face instruction but not in those studies contrasting purely online with face-to-face conditions."

For students, MyPortfolio@UOW will not only contribute to academic success; it will also lay the foundations for patterns and practices of successful lifelong learning.[12] MyPortfolio@UOW recognises students as creators and it contributes to the development of critical professional digital literacy.[13]

A successfully implemented MyPortfolio@UOW program will help students to graduate as self-directed, reflective, digitally literate professionals and citizens who understand the processes of continuous learning.[14]

Faculties and schools may elect to use any suitable software or online tool, taking into account its sustainability, flexibility, ease of use for students and staff and compliance with disability access standards. MyPortfolio solutions should also enable students to add additional material to provide further evidence of their achievements.

3. Digital Learning Thresholds

The Digital Learning Thresholds have been developed at the University of Wollongong to enhance the learning experience of students through the incorporation of minimum expectations and good practices in digital learning.[15] Digital Learning Thresholds underpin aspects of digital literacy, including digital aspects of communication, production, collaboration, research, self-organisation, professionalism, identity and responsibility.

Digital Learning Thresholds support the principle that all students will have access to digital learning opportunities and both students and staff will have clear expectations about the use of digital learning within the curriculum.

4. Open learning

Open Learning can potentially support face-to-face students, internationalise the curricula, engage our communities, expand our market reach and showcase areas of UOW research excellence.

Open Learning can also provide academic staff with an ideal environment in which to test innovations across national boundaries. With data from Open Learning being easily captured, interactions can be designed to test hypotheses and gain recognition for valuable learning and teaching research.

Massive Open Online Courses (MOOCs) are a growing form of open learning experience. UOW has already trialled the development of three MOOCs including *The Reluctant Mathematician* with between 250 and 1200 enrolments per 4 week course. Participation by UOW in MOOCs/MOOC

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12 Blom D, Rowley J, Bennett D, Hitchcock M and Dunbar-Hall P (2014), "Knowledge Sharing: Exploring Institutional Policy and Educator Practice Through Eportfolios in Music and Writing", *The Electronic Journal of e-Learning*, vol 12 no 2, pp139-148; Chau J and Cheng G (2010), Towards Understanding the Potential of e-Portfolios for Independent Learning: A Qualitative Study", *Australasian Journal of Educational Technology*, vol 26 no 7, pp 932-950.

13 Joint Information Systems Committee (JISC) (2008), *Effective Practice with ePortfolios: Supporting 21st Century Learning*.

14 Lambert S R (2006), "ePortfolio Tool as Change-Agent in the Graduate Attribute and Professional Skills Arena: an Australian University Implementation", in A Baker (ed), *eStrategies for Empowering Learners: ePortfolio2006*, pp 1-9, EIFEL, Oxford; Joyes G, Gray L and Hartnell-Young E (2010), "Effective Practice with e-Portfolios: How can the UK Experience Inform Implementation?", *Australasian Journal of Educational Technology*, vol 26 no 1, pp 15-27.

15 See http://www.uow.edu.au/dvca/ltc/dlt/

partnerships will build our organisational capacity in online delivery and promote UOW's specialist expertise. Through an assessment component, MOOCs have the potential to offer students a cost-effective, online pathway to formal study at UOW and/or online subject options within courses. Beyond graduation, access to learning through the use of open courses will support learning by a growing and vibrant UOW community of interconnected global graduates.

OERu UOW is a foundation partner in the International Open Education Resource Universities (OERu) Network. The implementation of the OERu is an ambitious project which aims to optimise resource use and extend access to more affordable education. OERu includes but is not limited to open education approaches, and is especially beneficial for learners who for various reasons may be excluded from the formal education sector. The UOW Strategic Course Development Committee has endorsed UOW's partnership with OERu to develop a new, fully online, pathway program.

Open Education Resource textbooks use a model where academics assemble and customise/localise open access (fee-free) material into a source book for the subject. This will be explored as it can significantly reduce the cost of study for students.

The ***OpenUOW YouTube channel*** supports video content and will continue to be an avenue used by UOW researchers to offer topical presentations to a broad audience.

INFRASTRUCTURE

5. Learning spaces and timetabling

To support the successful implementation of Hybrid learning@UOW, learning spaces and timetabling policy will support multiple models of delivery, operating concurrently. Learning platforms will need to offer enhanced options to support innovation.

6. Anywhere, anytime learning

Students would benefit from a seamless environment for use of technology with consistency of access across the university and through their own mobile and digital devices (improved wireless technology and eLearning compatibility).

Additional site licences for software would facilitate access to digital tools from all UOW labs and locations. Timely software upgrades would enable students and staff using trial versions or own-purchased versions to move their work seamlessly between their devices and university computers.

7. Learning platform

The UOW Learning Platform will need to offer a range of tools to support teaching staff wishing to innovate in ways best suited to learning and teaching in their subject.

8. Digital storage

UOW has been struggling to meet growing demands for digital storage. Technology-enriched learning will add to existing pressure on capacity. Further work is required to meet current and future demand.

STUDENT & STAFF SUPPORT AND TRAINING

9. Professional development

Professional development for students and academic, casual and professional staff is crucial for UOW to succeed in operating effectively as a digital university.

The University Strategic Plan Goal 4 states that UOW will "Foster a culture of continuous improvement by rewarding initiative, creativity and performance in an environment which develops staff and encourages the highest quality standards."

Continuing Professional Development Framework A new approach to support professional development in learning and teaching has been developed, offering ongoing support to academic staff in their careers and providing an option for external accreditation. This framework will be inclusive of designing and delivering technology-enriched learning and adapting to changing digital cultures.

Staff Recognition The UOW Academic Performance Framework recognises "active involvement in developing and adopting innovative learning and teaching technologies".[16] The Vice-Chancellor's Awards for Outstanding Contribution to Teaching and Learning recognise "flexible learning and teaching" and "innovation in curricula, learning and teaching".[17] Some faculties have subcommittees focused on learning and teaching technologies. These are the principle avenues through which staff will be recognised for their contribution to technology-enriched learning.

Student and Staff Digital Literacy (for a definition of 'digital literacy', see ***Glossary of terms***) UOW has for many years provided induction for students in UOW digital technologies, delivered within subjects, as part of orientation and supported by "roving helpers" in student labs. Library staff have been very active in developing student confidence with digital research tools. We can however expect that technology-enriched learning will require a higher level of digital literacy for both students and staff. UOW is running a Student Services and Amenities Fees (SAF) funded 'Manage Use Create' (Digital Literacy Support) Project. This has supported the creation of a series of online and face-to-face workshops addressing the gaps in students' digital literacy. The need to assist staff with their own digital literacies will be addressed in a forthcoming ESDF funded pilot project.

10. Staff support

Support for Creators of Technology-Enriched Learning Experiences The current educational design support will be extended. The Curriculum Transformation Project Team, in close collaboration with Educational Designers, will offer advice and consultations, workshops, practice-sharing events, showcases and guides to staff which will encompass both the educational design as well as the skills needed to develop and/or use specific technologies effectively.

One of the issues raised by staff is the difficulty of finding the right person to provide assistance. LTC and IMTS will work on a solution, potentially a single first point of contact which connects enquiries to the correct help point.

There is also a need to address the workload involved in implementing digital learning, and address inconsistencies between faculties and schools in this area.

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16 See Academic Performance Framework: http://www.uow.edu.au/content/groups/public/@web/@gov/documents/doc/uow162909.pdf

17 See OCTAL Awards home page for latest guidelines: http://www.uow.edu.au/dvca/ltc/teachdev/octal/

11. Special interest groups

The Technology-Enriched Learning Strategy builds on the existing practices and networks of UOW staff engaged in innovative learning and teaching. Every faculty or school has showcased the work of groups of innovators who collaborated on projects such as online simulations, videos, animations or digitally rich elearning sites. Several faculties or schools have had learning technology committees and/or research projects. There have been numerous UOW publications, grants and awards as a result of the work of special interest groups. This work will be further supported as part of the Technology-Enriched Learning Strategy.

Working parties of academics and professional staff and project-based approaches within faculties will support an adaptive approach to implementation, ensuring alignment to the signature pedagogies of discipline areas to optimise outcomes.

Physical and online special interest groups for support, research and innovation will be established to further assist in bring communities of enquiry and practice together. Think-tanks and summits will bring together internal and external expertise.

DATA AND EVALUATION

12. Learning analytics

UOW has established a Learning Analytics strategy covering the period 2013-2014. At UOW the focus is on near real-time delivery of data to enable teaching staff and students to maximise learning opportunities. Several milestones have already been met. Well-established governance committees and foundation data warehousing technology are in place.

In Spring 2014, six pilot partners made first use of the learning analytics tools. Data from Moodle was included in the data warehouse along with other student data from other UOW information systems including the Library, SOLS and various student support databases. Learning Analytics @ UOW is not 'a one size fits all' solution. A range of visualisations and reports are available and academics choose the most appropriate of these to support their pedagogy and curricula.

Positive feedback was received from the pilot partners, with the learning analytics visualisations providing insight into student use of support services and education opportunities in a way that was not previously available at UOW. With most partners, this insight into student data enabled actions to be taken for both individual 'at risk' students and entire cohorts to optimise their learning opportunities.

Thirty academics self-nominated to be included as early adopters of learning analytics in Autumn session 2015. The rollout of the UOW Learning Analytics strategy will continue in 2015 and into future years.

13. Evaluation

To ensure the intended benefits to students and UOW are delivered, progress with implementing this strategy will be regularly evaluated. Evaluation will have regard to:

- Student outcomes at each stage of implementation
- Staff engagement – staff take-up and perceptions data
- Student feedback
- Level of embedding – presence of innovations and transformational practices in courses
- Other goals achieved

- Quality – impact of practices on course learning outcomes
- Sustainability
- The new Quality Indicators of Learning & Teaching (QILT), which will facilitate national benchmarking on key teaching and learning indicators including those that focus on technology-enriched learning
- Results of periodic self-evaluation using Australasian Council on Open, Distance and e-Learning (ACODE) benchmarks (or other benchmarks as relevant to the discipline)
- Other external feedback (employers/professional bodies).

Innovations and creativity also need to keep pace with a rapidly changing digital world. UOW's Technology-Enriched Learning Strategy needs to be agile and responsive to support UOW's success in digital education into the future. Research findings and evidence-based practice will be monitored and communicated to inform all aspects of implementation.

12. Glossary of terms

Asynchronous learning is a term used to describe forms of education, instruction, and learning that do not occur in the same place or at the same time. The term is most commonly applied to various forms of digital and online learning in which students learn from instruction – such as prerecorded video lessons or game-based learning tasks that students complete on their own – that is not being delivered in person or in real time.

Source: quoted from Great Schools Partnership (2013), "Asynchronous learning", *Glossary of Education Reform*, 2013, published at http://edglossary.org/asynchronous-learning/

Blended learning is a formal education program in which a student learns at least in part through digital learning with some element of student control over time, place, path, and/or pace *and* at least in part at a supervised brick-and-mortar location away from home. The modalities along each student's learning path within a course or subject are connected to provide an integrated learning experience.

Source: quoted from C M Christensen, M B Horn and H Staker (2013) *Is K-12 Blended Learning Disruptive? An Introduction to the Theory of Hybrids*, Christensen Institute, San Francisco, p 7, published at http://www.christenseninstitute.org/wp-content/uploads/2014/06/Is-K-12-blended-learning-disruptive.pdf

Block-online learning is a delivery model where students come on campus for one or more intensive blocks of learning (eg two days, one week, two weeks) with the rest completed online. It is a common delivery model for post-graduate education at UOW, as it enables remote learners and full-time workers to participate.

Source: prepared by Sarah Lambert

Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (eg networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

Source: quoted from National Institute of Standards and Technology, US Dept of Commerce, *The NIST Definition of Cloud Computing*, September 2011, published at http://csrc.nist.gov/publications/nistpubs/800-145/SP800-145.pdf

Communities of practice are groups of people who come together to share something they have in common for the purpose of learning from each other, learning about themselves and contributing actively to the identity and practice of the group as a whole. A community of practice can be physical, virtual or both. The group is motivated and driven by a sense of shared experiences and active contribution a shared purpose and goals. Communities are often formed organically, but some professions actively encourage the formation and membership of a community of practice as a learning resource and potential training base for practitioners.

Source: prepared by Sandra Humphrey drawing on the original work of Jean Lave and Etienne Wenger (1991) *Situated Learning: Legitimate Peripheral Participation* Cambridge University Press, Cambridge and quoted from "What is a Community of Practice?" published at http://wenger-trayner.com/theory/.

Creative Commons is a legal licensing framework that allows creators of digital media to specify under what conditions their work can be shared and re-used. The creator of the media can add conditions to the re-use of their work such as "non-commercial" use and "share-alike" use. "Share-alike" means the newly created work must be shared under the same licence conditions as the original. Creative Commons licensing is based on the principle that there is value in building our work on the shoulders of others.

Each time a work is shared and re-used, its value is re-affirmed, its message travels more widely and has more impact and the reputation of the creator is enhanced. Proper attribution is also required, aligned to notions of academic integrity and referencing of each others' academic work.

Source: prepared by Sarah Lambert.

Cyber security is about defending computing devices, networks and stored data from unauthorised access, use, disclosure, disruption, modification or destruction. It is concerned with ensuring the integrity and availability of information and services and due confidentiality of data. It is concerned with risk management and ensuring controls are proportionate to risk.

Source: UOW Cyber Security Policy (forthcoming), as derived from R Kissel's synthesis in (2013) *Glossary of Key Information Security Terms*, US National Institute of Standards and Technology, Washington, published at http://nvlpubs.nist.gov/nistpubs/ir/2013/NIST.IR.7298r2.pdf.

Digital learning is used to refer to learning practices which are facilitated by digital technologies, platforms or content. Digital learning which is ***asynchronous*** (see above) is considered to give students more flexibility, as they can access resources and assessments at any time. Examples of Digital Learning includes subjects hosted on UOW's Moodle platform, or the use of blogging as a method of summative and/or formative assessment.

Source: prepared by Rebecca Goodway.

Digital literacy can be broadly defined as those capabilities which prepare an individual for living, learning and working in a digital society. It includes the awareness, attitude and ability of individuals to use digital tools and platforms to identify, access, manage, integrate, evaluate, analyse and synthesise digital resources, create texts in new media and construct and share new knowledge. Ethical considerations also form part of digital literacy, such as academic integrity and understanding copyright and licensing. As with any form of literacy, developing digital literacy is a complex process whereby individuals and communities increase their access, critical awareness and proficiency in using information and communication tools.

Source: prepared by Dr Emily Purser, Rebecca Goodway, Shirin Demirdag and Keith Brophy, quoting or drawing on various sources including JISC (2014), "Developing Students' Digital Literacy", published at http://www.jisc.ac.uk/guides/developing-students-digital-literacy; Casey L and Bruce B C (2010), *Sustaining the Inquiry Cycle: Digital Literacy Reframed*, National College of Ireland, published at http://www.slideshare.net/leocasey/digital-literacy-in-primary-school-site-presentation-2010 ; R Goodfellow and M R Lea (2013) (eds) *Literacy in the Digital University: Critical Perspectives on Learning, Scholarship, and Teaching*, Routledge, London and New York; R Sharpe and H Beetham (2010), "Understanding Students' Uses of Technology for Learning: towards Creative Appropriation", in R Sharpe, H Beetham and S De Freitas (eds) *Rethinking Learning for a Digital Age: how Learners are Shaping their Own Experiences*, Routledge, London and New York.

A ***digital university*** is one that capitalises on the rise of the availability of digital content, and the increasing availability of new technologies that can be used for the purposes of learning, teaching and research.

Source: derived by Ray Stace, quoting the UOW Strategic Plan 2013-18 (Goal 6). Wording was developed in a UOW strategic planning workshop by Damien Israel and others.

eLearning – see ***Digital learning***

ePortfolios are learner-driven collections of digital artefacts articulating experiences, achievements and evidence of learning. At UOW, an ePortfolio is not just a tool, but a process of engaging students in activities that allow them to identify, reflect on and show evidence of their developing Graduate Qualities and Professional Skills, and to justify and explain their skills and qualities to others.

Source: quoted from O O'Neille, A Miller, K Gladman and B Lapham (2013) "National Guidelines for Implementing e-Portfolios in VET", Department of Industry, Innovation, Science, Research and Tertiary Education, Canberra, published on *National VET eLearning Strategy: e-Portfolios for Learner Pathways* web site at http://learnerpathways.flexiblelearning.net.au/; and S Lambert (2008), *Student ePortfolios* web site at http://eportfolio.uow.edu.au

Flipping the classroom means that students gain first exposure to new material outside of class, usually via reading or lecture videos, and then use class time to do the harder work of assimilating that knowledge, perhaps through problem-solving, discussion, or debates. There are many different ways to flip the classroom. Most common is to prerecord short (10-15 minute) videos on key concepts or ideas and then use class time to actively explore and apply these concepts to real world situations in an interactive way. To ensure active engagement in class, the video content should be matched with a small task. Collaborative tasks are excellent as they both ensure active learning and help build class cohesion. Pre-class content does not necessarily have to be done through video, although research shows well-produced video has a big impact. Nor does it have to be traditional lecture material, for example, flipped classrooms can be usefully combined with case study approaches. The essential part of good flipped learning design is aligning the online and face-to-face content and orienting them both to enable active applied learning.

Prepared by Marcus O'Donnell drawing on various sources. Initial definition quoted from Braime C J (2013), Flipping the Classroom, Vanderbilt University Center for Teaching, Nashville, published at http://cft.vanderbilt.edu/guides-sub-pages/flipping-the-classroom/ Discussion draws on Herreid C F and Schiller N A (2013), "Case Studies and the Flipped Classroom", *Journal of College Science Teaching*, vol 42 no 5, pp 62-6; "Orchestrating teaching: the implications of flipped classroom" in *10 Cases of Technology Enabled Learning*, OLT Strategic Commissioned project on Technology Enabled Learning, Monash University & Griffith University, published at http://newmediaresearch.educ.monash.edu.au/lnmrg/section/10-cases-technology-enabled-learning

Hybrid learning optimally combines web-based and face-to-face teacher-student, student-student, student-resources and student-world interactions to achieve the learning outcomes of the subject or course. It uses a range of different tools to develop a deep understanding of content and focuses on learning as a social, collaborative experience. It is different to web-enhanced learning, which primarily uses traditional face-to-face pedagogies while supplementing them with some resources or activities on a Moodle site. Hybrid learning and blended learning are often used interchangeably in the teaching and learning literature. UOW has chosen the term 'hybrid' learning to acknowledge the unique contributions different tools and processes make to learning, while recognising that effective combinations of different learning tools produce more than the sum of their parts.

Source: prepared by Dr Marcus O'Donnell, drawing on definitions from "Hybrid Learning", University of Washington Bothell, http://www.bothell.washington.edu/learningtech/elearning/hybrid-and-online-learning/hybrid-learning/

Learning analytics is the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimising learning and the environments in which it occurs.

Source: quoted from Society for Learning Analytics Research executive (2010), definition prepared for the *1st International Conference on Learning Analytics and Knowledge*, Banff (Alberta), February 27–March 1, 2011, published at https://tekri.athabascau.ca/analytics/.

Massive online open courses (MOOCs) are online courses which leverage the internet to reach much larger numbers of typically adult learners than can be taught in university settings. While free, MOOCs are only truly 'open' in exceptional circumstances. Most use proprietary licenced learning materials that are only available to students for the period of enrolment, and cannot be accessed after the course is finished, nor reused, adapted or redistributed by educators (which are concepts central to OERs and open education). As commentators have been quick to note, free does not equal open.

Source: prepared by Sarah Lambert, drawing on debates such as David Wiley (2012) "The MOOC Misnomer", *Iterating towards Openness* blog, published at http://opencontent.org/blog/archives/2436.

Mobile learning has proven difficult to define. Definitions of mobile learning appearing in the research literature focus on a range of concepts including mobility of the technology, mobility of the student and the mobility of the learning process.

Source: quoted from H Farley and members of the Mobile Learning Evaluation Project Team (2013), "Delphi Forum to Develop a New Definition of Mobile Learning", *CRN Digital Futures Project 1: Mobile Learning Evaluation Framework*, University Southern Queensland, Australian National University and University of South Australia, published at http://mobilelearning.org.au/index.php/definingresearch.

myPortfolio is the name given to UOW's ***ePortfolio*** (see above).

Netiquette refers to rules of conduct (etiquette) appropriate to the online environment, dictated by common sense, fairness, honesty and courtesy.

Source: prepared by Fiona Macdonald. See http://www.knowthenet.org.uk/infographic/be-careful-trolling-can-happen-anyone for useful infographic.

Networked learning is learning in which information and communication technology is used to promote connections: between one learner and other learners; between learners and tutors; between a learning community and its learning resources.

Source: quoted from P Goodyear, S Banks, V Hodgson and D McConnell (2004), *Advances in Research on Networked Learning*, Kluwer Academic Publishers, Boston and Dordrecht, p 1.

Online learning – in formal documents where the mode of delivery must be identified, 'online learning' typically applies to those subjects or courses where the mode of delivery is fully or predominantly online. However the term is also sometimes used interchangeably with ***digital learning*** (see above) or eLearning.

Source: prepared by Sarah Lambert and Martin Hesse.

Open education is based on the simple and powerful idea that the world's knowledge is a public good and that technology in general and the Worldwide Web in particular provide an extraordinary opportunity for everyone to share, use, and reuse knowledge. There is significant effort to leverage open education worldwide to remedy the problem of lack of access to primary, secondary and tertiary education, due to cost and/or lack of access to educational institutions.

Source: 'public good' definition quoted from M S Smith and C M Casserly (2006), "The Promise of Open Educational Resources", *Change Magazine*, vol 38 no 5,p 10. Comments by Sarah Lambert, drawing on Commonwealth of Learning web site http://www.col.org/.

Open educational resources (OER) are teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. Open licensing is built within the existing framework of intellectual property rights as defined by relevant international conventions and respects the authorship of the work.

Source: UNESCO (2002), quoted within World Open Educational Resources (OER) Congress (2012), *2012 Paris OER Declaration*, UNESCO, published at http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/WPFD2009/English_Declaration.html.

Open learning refers to student engagement with ***Open education programs*** (see above)

Personalised learning refers to a diverse variety of educational programs, learning experiences, instructional approaches, and academic-support strategies that are intended to address the distinct learning needs, interests, aspirations, or cultural backgrounds of individual students. Personalised learning is generally seen as an alternative to so-called 'one-size-fits-all' approaches to schooling in which teachers may, for example, provide all students in a given course with the same type of instruction, the same assignments, and the same assessments with little variation or modification from student to student.

Source: quoted from Great Schools Partnership (2014), "Personalized learning", *Glossary of Education Reform*, 2013, published at http://edglossary.org/personalized-learning/

A ***Special Interest Group*** is a community within a larger organisation with a shared interest in advancing a specific area of knowledge, learning or technology where members cooperate to affect or to produce solutions within their particular field, and may communicate, meet and organise conferences.

Source: quoted from “Special Interest Group”, *Wikipedia*, http://en.wikipedia.org/wiki/Special_Interest_Group

Synchronous learning is a general term used to describe forms of education, instruction, and learning that occur at the same time, but not in the same place. The term is most commonly applied to various forms of televisual, digital, and online learning in which students learn from instructors, colleagues, or peers in real time, but not in person.

Source: quoted from Great Schools Partnership (2013), "Synchronous learning", *Glossary of Education Reform*, 2013, published at http://edglossary.org/synchronous-learning/

Ubiquitous learning allows learning anywhere, anytime, on any device.

Source: a ubiquitous definition. The concept of anywhere, anytime learning through technology has been attributed to B C Bruce (1999), "Education Online: Learning Anywhere, Any Time", *Journal of Adolescent and Adult Literacy*, vol 42 no 8, pp 662-6.

Universal Design in education provides a framework to ensure equality of education to all students. This can be accomplished by designing courses and preparing subjects in a way that anticipates the diversity of the student population. By designing curricula to be as accessible as possible, the need to make individual adjustment for particular students is minimised. By offering flexibility in how students are engaged in learning, how information is presented and how students are expected to respond, the challenges and supports within the course can be made appropriate to all learners including those with disability or language learning needs. Implementing universal design in education anticipates diversity in learning styles and abilities without impacting on academic standards.

Source: prepared by Chris Brewer and Margaret Wallace and derived from (2014) ADCET: Universal Design http://www.adcet.edu.au/disability-practitioner/course-design-and-implementation/universal-design/