Context

The purpose of the Learning Technologies Roadmap 2018-2022 is to outline a vision for the deployment of learning technologies at Edith Cowan University, in support of the University’s Strategic Plan 2017-2021 as it relates to learning and teaching. The Roadmap takes a ‘whole of institution’ framework, utilising a futures-oriented approach to the selection and adoption of learning technologies and seeks to enhance the learning experience for on and off campus students.

The Roadmap refers to the Technology-Enhanced Learning Blueprint 2017-2021, which was designed to frame ECU’s strides in creating learning environments that make the most of ‘next-generation’ digital tools and ubiquitous connectivity, equipping students for their increasingly technology enabled work environments. Further framing of the Learning Technologies Roadmap is the new Curriculum Suite of Policies. These ensure that the University meets the requirements of the Higher Education Standards Framework, 2015 (Threshold Standards) and that the policies reflect good practice in the sector.

The vision for the use of learning technologies at ECU is that they increase student success and engagement, and enrich and personalise the ECU student experience through innovative learning design and talented teaching; underpin innovative and engaging online teaching; and are matched to the course profile and research areas of the institution. These elements need to be integrated within scalable educational practices within an increasingly digital and mobile landscape.

Overarching capabilities

The following document captures the tools and capabilities that form foundational principles for many of the learning technologies across a wide spectrum of implementations.
Current tools to support technology enhanced learning and teaching

**Organisation and appearance**

- Blackboard App
  - Blackboard content

- Blackboard Learn
  - Items/Files/Folders
  - Audio/Images/Video
  - Web links
  - Module pages
  - Document packages
  - Scorm content
  - HTML packages
  - Adaptive release

**Learning resources and activities**

- Social Media Tools
  - Subject to ECU guidelines

- Blackboard Learn
  - Mashups
  - Glossary
  - Publisher content
  - Lynda.com

**Assessment and feedback**

- Pebble +
  - Assignments
  - Formal and informal feedback
  - Grading
  - Turnitin integration
  - Peer review
  - External review/grading
  - Moderation

- Blackboard App
  - Mobile compatible tests
  - Blackboard Learn
  - Tests, surveys and pools
  - Assignments
  - Turnitin assignments
  - Rubrics
  - Self and peer assessments
  - Inline grading of blogs, journals and wikis
  - Anonymous and delegated grading
  - Achievements - digital badges and certificates
  - Publisher quizzes and assignments
  - Grade centre (staff)
  - My grades (students)

- Turnitin Feedback Studio App
  - Grading of assignments with rubric feedback text and audio comments

**Communication and collaboration**

- Synchronous Communication
  - Blackboard Collaborate Ultra
  - Assignments ext chat
  - Whiteboard
  - App sharing
  - Breakout rooms

- Spanned Classroom
  - Multi-location via in room equipment

- Blackboard App
  - Discussion boards

- Mindmeister
  - Mindmapping

- Blackboard Learn
  - Announcements
  - Calendar
  - Email
  - Groups
  - Discussion boards
  - Blogs
  - Wikis
  - Journals
  - Community sites
  - Notifications

- Pebble +
  - Sharing assets
  - Collaborative webfolios
  - Conversations

**Learner support**

- Blackboard Analytics
  - In-built reports giving detailed information on student profiles, activity and achievement
  - Pyramid reporting tool allows custom dashboards and reports to be built

- Blackboard Learn
  - Retention centre
  - Performance dashboard
  - Statistics tracking
  - Unit reports
Current state: Need to reach optimum capabilities

The following solutions are already in place in the University. However, work is being done to reach optimum capabilities in the learning & teaching experience.

**HYBRID LEARNING DESIGNS**
Affordances for flexibility, ease of access and the integration of sophisticated multimedia and technologies

**COLLABORATIVE LEARNING**
Students or educators working together in peer-to-peer or group activities, based on the perspective that learning is a social construct. Cloud-based services, apps and other digital tools promote persistent connectivity, enabling students and educators to access and contribute to shared workspaces, anytime

**LEARNING SPACES**
Creative and collaborative physical learning spaces include formal as well as informal spaces to allow traditional and emerging learning experiences to be created for face-to-face interactions that are technologically enhanced

**LEARNING OBJECT/RESOURCE REPOSITORY**
A central place to manage and deliver learning resources across a multitude of platforms and methods

**VIDEO PRODUCTION AND MANAGEMENT**
Sophisticated recording of lectures, screen captures and other video elements, and how we manage and deliver them to students and other stakeholders

**E-PORTFOLIO**
Educational, personal and professional development planning, assessment and the storage and presentation of assets to demonstrate the learning process and capabilities of the student

**ACADEMIC INTEGRITY**
Systems to detect, deter and educate students to reduce and avoid academic integrity issues
These capabilities have been initiated and will be developed further.

ADAPTIVE LEARNING TECHNOLOGIES
Monitor student progress and interactions, using this data to modify and customise the learning experience for students at an individual level to provide personalised learning.

MOBILE LEARNING
Enable learners to access materials and experiences anywhere, across multiple devices.

MEASURING LEARNING
Redesigning assessment for contemporary needs and flexible deployment.

LEARNING ANALYTICS
Measuring data and acting meaningfully on all aspects of activity related to learning. Developing automated early warning systems and interventions to help enhance student success.

MICRO-CREDENTIALS
Creating and awarding small learning unit recognitions which can then be stacked and converted to a full/partial award.
THE INTERNET OF THINGS (IoT)
Connected devices generating data on student learning and campus activity, informing
the direction of content delivery and institutional planning

NEXT-GENERATION DIGITAL LEARNING ENVIRONMENTS (NGDLE)
Future of the learning management system. Develop more flexible spaces
that support personalisation meet universal design standards, and play a
larger role in formative learning design

OPEN EDUCATIONAL RESOURCES
Freely accessible and openly licensed learning assets

GAMIFICATION
Provide a unique opportunity to apply new knowledge and make mission-critical
decisions while identifying obstacles, considering multiple perspectives and rehearsing
various responses

SIMULATION
Using technology to simulate situations that are too dangerous or too
expensive for students to experience in a live situation. Also allows students to practice
and receive feedback on progress

2020: Achieving

These projects are achievable for ECU in the coming years as fully mature solutions.
AI and mixed realities are present in small pockets of innovations. However, it will need more time and resourcing to scale it at the university level for full leverage of capabilities.

**ARTIFICIAL INTELLIGENCE (AI): DESIRED CAPABILITIES**

Natural user interfaces through voice recognition and natural language processing for the potential to enhance online learning, adaptive learning software, and research processes where this can more intuitively respond to, and engage with, students.

**AUGMENTED / VIRTUAL / MIXED REALITY**

To enhance teacher instruction while simultaneously creating immersive lessons that are engaging for the student.

**REFERENCES**

2018 NMC Horizon Report Preview

FORBES Top 6 Digital Transformation Trends in Education