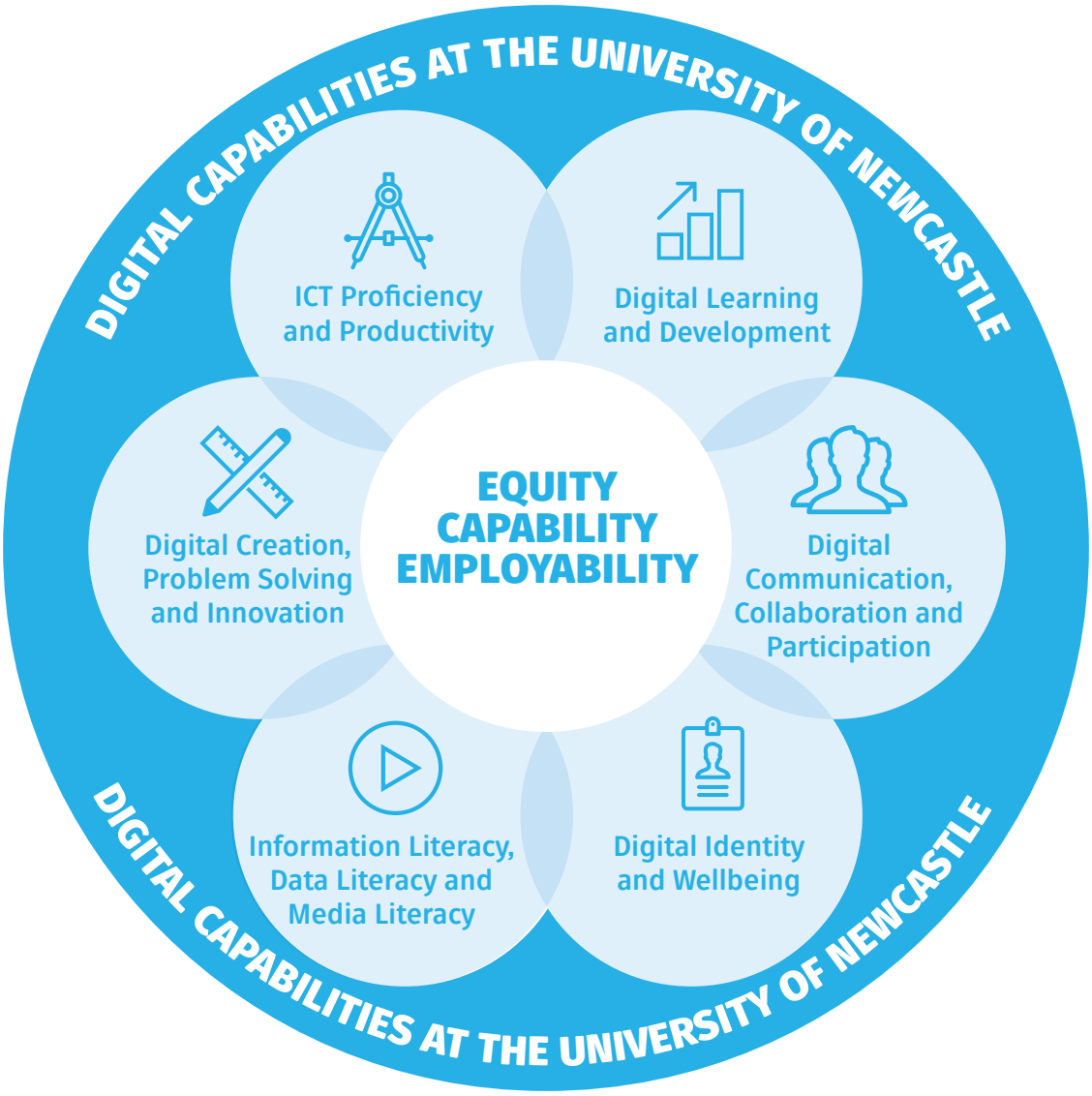
DIGITAL CAPABILITIES AT UON

THE UNIVERSITY OF NEWCASTLE AUSTRALIA

Equity
Capability
Employability

AN INITIATIVE OF
THE NEW EDUCATION FRAMEWORK


DIGITAL CAPABILITIES AT THE UNIVERSITY OF NEWCASTLE
ICT Proficiency and Productivity
Digital Learning and Development
Digital Creation, Problem Solving and Innovation
EQUITY
CAPABILITY
EMPLOYABILITY
Digital Communication, Collaboration and Participation
Information Literacy, Data Literacy and Media Literacy
Digital Identity and Wellbeing
DIGITAL CAPABILITIES AT THE UNIVERSITY OF NEWCASTLE

CONTENTS

OUR VISION

> A digital capabilities framework is not an end in itself but it can provide a common language for development, a benchmark for individuals to aspire to, and a checklist for staff and student support.[1]

(Nottingham Trent University, n.d., p. 3)

The Digital Capabilities Framework project is a proposal to embed digital capabilities within learning outcomes across all disciplines at the University of Newcastle. It is funded by the NeW Education Framework, a 'holistic and multifaceted approach to learning and teaching that will provide students with opportunities for discovery, exploration and application, and enable a portfolio of skills and attributes..." (Academic Division of the University of Newcastle, 2018)

Graduates require practice with current digital technologies and procedures so that they can thrive in the rapidly changing labour market. In addition, they require resilience, flexibility and confidence to ensure they are ready and able to adapt quickly as technologies change. The Digital Capabilities Framework will prepare our students for a digital future.

WHAT ARE DIGITAL CAPABILITIES?

These are the skills and attitudes our students need to be able to live, learn and work in a digital society (Jisc, n.d.-b). Graduates require skills in the evaluation of digital technologies and information in order to create, manage, and share knowledge. They also need to remain safe, healthy and ethical in the use of digital technologies for those purposes.

> Creating a unified and shared language around digital [capabilities] is an important and visible starting point for ongoing conversations about digital practices and as a reference point for further development of these practices.[2]

(Digital Literacies Framework Reference Group & Beetham, 2015, p. 2)

WHAT IS THE DIGITAL CAPABILITIES FRAMEWORK?

This framework outlines the skills and capabilities that students will need to be successful in the workforce of the future.

To ensure that UON graduates attain the necessary skills and attitudes, digital capabilities need to be embedded in curricula across all disciplines, and opportunities identified and provided for students to develop capabilities outside the curriculum. For example, placements, makerspaces and work-integrated learning enable students to explore and use digital technologies in 'real-world', collaborative environments.

HOW DID WE ARRIVE AT THIS DESIGN?

After an extensive environmental scan of higher education institutions with digital capabilities frameworks, it became apparent that most use the Jisc Digital Capabilities Framework as a foundation and have designed their own representations and statements of capabilities.

Jisc is a UK not-for-profit organisation working with higher education institutions and providing guidance for the implementation of digital capabilities. Following 30 years of experience with digital technologies for education and research (Jisc, n.d.-a), they have created a framework with six main elements containing fifteen digital capabilities (Jisc, 2018).

The CAUL Digital Dexterity Framework, launched on 11 February 2019, also influenced our design in its compression of the fifteen capabilities into six (Council of Australian University Librarians, 2019).

Research was also undertaken to gain industry perspectives on what is expected of university graduates in terms of digital capabilities. The project group mapped employability and UON graduate identity elements to the Jisc capability definitions and statements. An equity statement was also included in the framework, consolidating the university's commitment to provide each student with equitable opportunities and access to digital technologies.

The UON Digital Capabilities Framework is based on the Jisc and CAUL frameworks and contains relevant graduate, employability and equity statements to provide context and guidance for staff and students.

HOW TO USE THE FRAMEWORK

The aim of the framework is to provide a checklist for students in respect of attaining and evidencing digital capabilities.

The framework can also act as a map to guide academic staff as they include relevant digital capabilities at a program, course and lesson level, and apply these capabilities to research and scholarship.

The graduate and employability statements will provide guidance for students in respect of the level of capability required, and direction for how they can continue to develop.

THE FRAMEWORK

EQUITY

Equity of access to higher education is a fundamental part of the University of Newcastle's "DNA". This is reflected in our institutional values and demonstrated in our successful history of supporting students from a range of backgrounds to achieve a university education (The University of Newcastle, 2019). Equity is therefore the foundation of the Digital Capabilities Framework and encompasses each capability described on the next few pages. All students will have equitable opportunities and access in respect of digital capabilities.

To ensure digital equity for students and staff, the University of Newcastle will provide –

- A formative self-assessment of users' digital access and skills
- A participatory, open digital culture where all students can learn to express and support different viewpoints online
- An online environment for students to build digital capabilities while complying with digital rights and responsibilities
- Digital promotion of different languages, cultures and knowledge, extending access for minority, under-represented and vulnerable populations
- A range of appropriate digital tools and methods for learning, use and evaluation, including exposure to evolving technologies where possible
- Opportunities to learn about finding, evaluating and referencing digital information
- Opportunities to undertake digital evidence-based decision making and research to investigate problems in their own and wider communities
- Instruction on transparency, accountability, and data protection standards in respect of data collection, storage, protection and dissemination
- Instruction on how to create and share digital artefacts and tools
- Digital tools for the management and promotion of digital reputation and wellbeing

ICT PROFICIENCY AND PRODUCTIVITY

UON GRADUATES CAN:

- Use digital technologies confidently to deliver world class research and innovation
- Stay up to date with evolving technologies
- Evaluate and choose digital technologies to suit different requirements
- Achieve complex tasks using a range of digital tools

EMPLOYERS VALUE:

Confident, skilled use of ICT; ability to evaluate and choose digital tools to contribute to optimal productivity; and ability to streamline and improve services and processes with emerging technologies.

TO MEET THESE REQUIREMENTS, STUDENTS WILL BE ABLE TO:

- Choose and use different ICT-based devices, systems and software to suit task requirements, with attention to quality
- Apply basic concepts in computing, coding and software/app development
- Use digital communication services such as email and videoconferencing
- Sign onto and use UON's digital systems, and other social media and sharing sites
- Organise, edit, manage and back up digital documents and files
- Develop a personal digital environment from a range of tools and services
- Describe the environmental and social impacts of new technologies
- Recognise the limits of their digital proficiency and when to ask for help.

DIGITAL LEARNING AND DEVELOPMENT

UON GRADUATES CAN:

- Identify, adapt and use digital learning tools for organisation, learning, personalisation and access
- Record learning events and outcomes using digital tools, and use this documentation for self-reflection and to showcase their capabilities
- Share their learning and expertise with peers, instructors, and professionals
- Demonstrate capability and motivation for lifelong learning

EMPLOYERS VALUE:

Capability, capacity and motivation for self-directed, self-managed lifelong learning.

TO MEET THESE REQUIREMENTS, STUDENTS WILL BE ABLE TO:

- Adapt digital tools/materials to suit their learning preferences and access needs
- Use digital media to share information and take part in learning conversations with instructors and other students
- Use personal or organisational digital tools to organise, plan and reflect on learning, e.g. mind-mapping
- Record learning events and outcomes and use them for self-analysis, reflection and showcasing of capability
- Undertake self-assessment of learning needs, participate in other forms of digital assessment, and receive and respond to feedback in digital forms.

DIGITAL CREATION, PROBLEM SOLVING AND INNOVATION

UON GRADUATES CAN:

- Capture, design, edit and produce digital media using new technologies, and share and showcase these artefacts together with research in a range of digital media to create new knowledge
- Make decisions and address complex problems in a creative way, based on digital evidence
- Adopt and develop new digital technologies and opportunities, and promote these to others, driving change and inspiring excellence

EMPLOYERS VALUE:

Digital creators with the ability to create new knowledge and/or respond creatively to new problems; ability to customise and combine appropriate tools to investigate and address problems in the community; ability to innovate swiftly in response to new situations and demands.

TO MEET THESE REQUIREMENTS, STUDENTS WILL BE ABLE TO:

- Design and/or produce new digital materials according to stated requirements and technical formats
- Collect data using digital tools relevant to the subject area, e.g. data capture, video, audio
- Access and use data sets relevant to the subject area
- Design and administer online surveys to gather qualitative data
- Work effectively across different software, apps and services to find digital solutions
- Analyse data using simple qualitative and quantitative tools
- Use digital tools in novel, creative and unintended ways.

ADVANCED LEARNERS WILL BE ABLE TO:

- Create, share and showcase digital artefacts with an awareness of audience, purpose, IP and licensing essentials
- Code and design apps, interactive elements, digital games, virtual environments and interfaces
- Generate new questions or address new challenges in the subject using digital methods
- Help to create research and drive questions, as well as disseminate specialist (scholarly or professional) ideas in a range of digital media, e.g. open theses, blog posts
- Use digital technologies to develop new ideas, projects and opportunities
- Promote new digital tools and opportunities to others, and/or act as a digital change agent or champion.

DIGITAL COMMUNICATION, COLLABORATION AND PARTICIPATION

UON GRADUATES CAN:

- Use a range of digital tools, apps and software to participate in the wider community
- Respect cultural and other differences in communication styles
- Work in digital teams, groups and projects using collaborative tools in online environments
- Collaborate supportively, respectfully and productively across different boundaries

EMPLOYERS VALUE:

Ability to create and manage regular, concise, culturally-aware, ethical and respectful online communication; use of digital communication to contribute to planning and collaboration; ability to use collaborative digital tools to connect with others who possess the required knowledge and/or experience; respect for diversity and flexibility of teams and workspaces; comprehension of the challenges and implications of living in a networked society; willingness and ability to participate in the wider community.

TO MEET THESE REQUIREMENTS, ALL STUDENTS WILL BE ABLE TO:

- Participate in a range of digital communication media, and understand the differences between these media
- Communicate and collaborate respectfully and inclusively across cultural, national and/or subject specialist boundaries
- Participate in collaborative online environments and share digital resources to produce shared outcomes, develop new ideas, or meet shared goals, by using collaborative digital tools
- Participate in a range of online networks, and build and manage online contacts.

ADVANCED LEARNERS WILL BE ABLE TO:

- Design, initiate, distribute and facilitate digital communications and collaborations for different purposes, e.g. to persuade, inform, entertain, guide and support
- Build networks and collaborative opportunities, e.g. facilitate online exchanges, answer questions, collate answers, welcome new participants, launch new sites or groups, open up new connections and conversations
- Describe how digital media and networks influence social behaviour.

INFORMATION LITERACY, DATA LITERACY AND MEDIA LITERACY

UON GRADUATES CAN:

- Find digital information efficiently, and evaluate its relevance, value and credibility
- Use appropriate referencing and/or copyright alternatives such as open access
- Follow legal, ethical and security guidelines in data collection and use
- Use different data analysis tools and techniques to collect and collate data from various online sources
- Use data analysis for reporting and alerts
- Create, comprehend and evaluate messages in a range of digital media and formats

EMPLOYERS VALUE:

Ability to evaluate digital content; use of analytical skills to manipulate and interpret (big) data; recognition of patterns, and knowledge of how data analysis contributes to targeted decision-making and policy; skills in using different media to create content for different audiences.

TO MEET THESE REQUIREMENTS, ALL STUDENTS WILL BE ABLE TO:

- Find relevant digital information in different sources by using appropriate search terms and tools
- Organise and manage digital information using software and metadata
- Distinguish between different kinds of information, e.g. academic, professional, personal and political
- Know and follow the rules of copyright, and give credit for others' work through proper referencing
- Recognise and use only legal sources, for example by using copyright alternatives
- Manage, access, use and interpret digital data using data management tools
- Receive and respond to messages in a range of digital media such as text, graphics, video, animation, audio and multimedia
- Describe how and why specific digital messages are designed, e.g. for particular audiences, purposes and effects.

ADVANCED LEARNERS WILL BE ABLE TO:

- Use curation tools to bring information together in new ways, and to record and review information for future access and use
- Analyse data by running queries, statistical tests, data analyses and reports
- Demonstrate how data is used to construct arguments, and critique specific uses of data
- Describe how algorithms work
- Use a range of digital media editing tools, and/or describe and apply some technical aspects of digital media production
- Outline how digital media are reshaping social, political and personal life
- Share and distribute digital media for others to access.

DIGITAL IDENTITY AND WELLBEING

UON GRADUATES CAN:

- Manage and maintain digital profiles appropriately
- Use digital technologies in a way that respects the wellbeing and safety of themselves and others
- Quickly identify and deal with false or damaging digital communication
- Manage their own online interactions to minimise distraction, overload and stress
- Develop their digital reputation and build professional relationships

EMPLOYERS VALUE:

Ability to construct and maintain an online reputation; ability to guard reputation and identity against digital attack and misrepresentation; evidence of online accountability; ability to manage own digital workplace to optimise wellbeing; knowledge of ethical and privacy issues related to online practice.

TO MEET THESE REQUIREMENTS, STUDENTS WILL BE ABLE TO:

- Develop and project a positive digital presence and manage digital reputation across a range of platforms
- Collate and curate personal materials across digital networks, and use privacy settings appropriately
- Use digital technologies in ways that support and respect own and others' personal development, wellbeing and safety, e.g. by acting positively against cyberbullying and other damaging online behaviours
- Use digital tools and media in ways that are aligned with personal values and goals such as sustainability
- Use digital media to access services and self-monitor (e.g. health conditions)
- Manage online and real-world interactions in ways that support physical, emotional and mental health.

KEYWORDS

TERM	DEFINITION
Application	A particular role or task to which a computer system can be applied, or, more usually, the software used for such a purpose
Applications software	Computer programs that are designed for a particular purpose or application
Device or hardware	Any printer, storage, display, input or output mechanism that may be attached to a computer system, e.g. desktop computer, laptop, mobile/ smartphone, tablet, digital camera, mouse, keyboard etc
Digital media	Digital text, images, video, animations, simulations, games, virtual environments, other interactive media delivered via digital devices (see also multimedia)
ICT	Abbreviation for information and communications technology
Interactivity	In this context, a communicative relationship between a user and a computerised media device where each new action is contingent on a previous action; the degree to which users can influence and vary form and/or content
Jisc	Joint Information Systems Committee
Mobile apps	Applications that can be downloaded to mobile devices such as smartphones
Multimedia	Different types of media that can be processed by a computer. Examples include sound, graphics, video images, animations, and text. Also used to describe content that contains two or more types of media
Network	A system of linking two or more computing devices together for the purpose of sharing data
Software	Computer program and any associated data file

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