

Decoding Digital Literacy: Digitally literate graduates - what does this mean for ICT education?

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<http://www.decodingdigitalliteracy.org/>



What is your understanding of
digital literacy?

Are ICT students digitally literate?

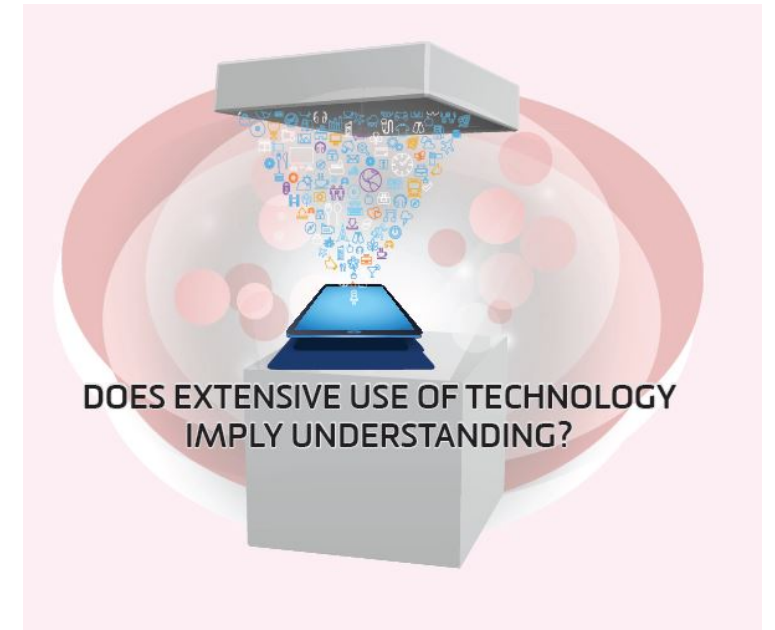
Fellowship objective

... is to lead change by developing a digital literacy benchmark for students entering and graduating from Australian Higher Education, providing the foundation to:

- extend and enhance digital competencies within the context of a discipline;
- align graduate capabilities with government recommendations; and
- improve student employability.

Government national priorities

- Government and industry calling for HE to respond to future employment environment
- Help students embrace digital age and prepare for jobs of the future
- Need to be able to use digital technologies creatively, effectively and independently
- Use of social media does not necessarily translate to being digitally literate



Ensuring the next generation of students have the skills needed for the workforce of the future is critical to ensuring Australia's future prosperity and competitiveness on the international stage. An estimated 75 per cent of jobs in the fastest-growing industries in the next five to 10 years will need science, technology, engineering and mathematics (STEM) skills and ***almost all jobs will require ICT literacy.*** (National Innovation and Science Agenda, 2015)



UK Forum on Computing Education

1. Digital **muggle** (7% of workforce)
 - No digital skills required
2. Digital **citizen** (37% of workforce)
 - Ability to use digital technology purposefully and confidently to communicate, find information and purchase goods/services
3. Digital **worker** (46% of workforce)
 - The ability to evaluate, configure and use complex digital systems. Elementary programming skills such as scripting are often required for these tasks
4. Digital **maker** (10% of workforce)
 - Skills sufficient to build digital technology

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UK House of Commons 2016

“Current teaching in universities is devoid of commercial reality and does not have a strong enough commercial aspect. Graduates are emerging from degrees with a broad knowledge of IT Theory but no in-depth technical understanding of particular disciplines or the professional skills needed for a career in the sector.”

“Digital skills should be one of the core components, alongside maths and english ... The gap between the digital skills that children and young people take into their working lives and the missing skills actually needed for the digital economy demonstrate a long-running weakness in the UK’s approach to developing digital skills.”

ICT professional standards and digital literacy?

- ACS CBoK
- SFIA
- ACM/IEEE CS curricula
 - IT
 - CS
 - IS
 - SE
- IEEE CE curriculum

Outcomes of Fellowship to date ...

- Digital Literacies according to JISC
 - those capabilities which fit an individual for living, learning and working in a digital society
- Digital Literacy understanding
 - *the ability to identify and use ICT confidently, critically and creatively, to meet the demands and challenges of living, learning and working in a digital society effectively*
- Assumed knowledge
 - No consistency
 - Not universally articulated
 - Often no information provided

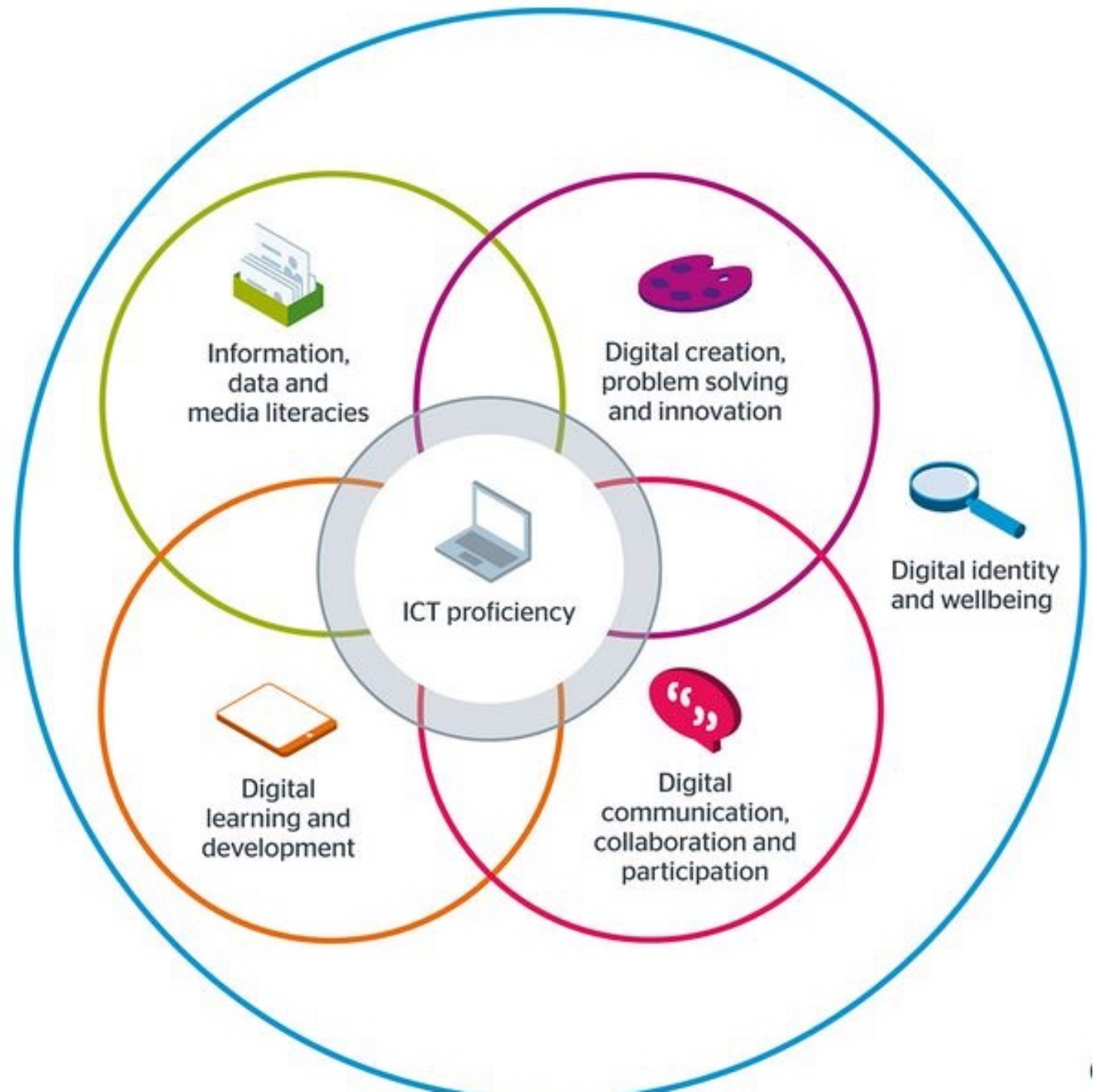
You are tasked with employing someone to teach digital literacy in the ICT curriculum.

What are the essential/desirable skills you would look for?

Digicomp – areas of digital competence

1. **Information:** identify, locate, retrieve, store, organise and analyse digital information, judging its relevance and purpose.
2. **Communication:** communicate in digital environments, share resources through online tools, link with others and collaborate through digital tools, interact with and participate in communities and networks, cross-cultural awareness.
3. **Content-creation:** Create and edit new content (from word processing to images and video); integrate and re-elaborate previous knowledge and content; produce creative expressions, media outputs and programming; deal with and apply intellectual property rights and licences.
4. **Safety:** personal protection, data protection, digital identity protection, security measures, safe and sustainable use.
5. **Problem-solving:** identify digital needs and resources, make informed decisions as to which are the most appropriate digital tools according to the purpose or need, solve conceptual problems through digital means, creatively use technologies, solve technical problems, update one's own and others' competences.

Digital capability framework (JISC)





What are the implications for ICT curricula?

Framework for curriculum development



Preparing the broader student population for a
life dominated by technology ...

What are our responsibilities beyond the ICT
discipline?

Conclusions (and extrapolations)

- Digitally literate graduates
 - Broader perspective of what digital literacy entails
 - Addresses employers' current and future expectations
- Implications for students and curriculum
 - Expectations of digital literacy skills for incoming students must be explicitly articulated
 - Support for basic skills and knowledge need to have centralised support
 - Discipline/professional elements should be integrated into the curriculum
 - Discipline-specific digital literacy education must address industry expectations and standards (where they exist) and otherwise inform industry expectations
 - Don't throw the baby out with the bath-water!!