Digital Literacy & Employability skills & the Future of Work

Presenter

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Education Professional in VET - Specialising in Digital Learning. Fulbright Professional Scholar.

2 BIG ideas:

1. A Digital Literacy framework for the VET sector.

Why digital literacy

Digital literacy is important not only in schools but also in further education. Why digital literacy

Foundation for Young Australians 2015 link

Prime Minister Malcolm Turnbull has called for digital literacy to become as fundamental as reading and writing as it underpins a nation’s capacity to provide individuals and groups with equity of access to social opportunity. The Weekend Australian 2015 link

There is a need to support business in building internal capacity to train, upskill and improve the digital literacy of their existing workforce. Foundation for Young Australians 2015 link

There are significant shortages in digital skills which will become a basic skillset for the future workforce Committee for the Economic Development of Australia (CEDA) - The Australian Industry Group 2016 link

An increase of 680% in digital literacy skills (Foundation for Young Australians, 2017) link

All workers will need to be able to work with technology in the future, making digital literacy a new core skill set. CSIRO and TAFE Queensland VET Era report 2016 link

As we progress into the information age, digital literacy will become an essential skill and currency, if not already. Currently, 2.5 million Australians in non-ICT roles require digital literacy skills as part of their job – a figure likely to increase exponentially over the next five years. Australian Computer Society 2016 link

“Like literacy and numeracy, a lack of basic digital skills also poses a significant barrier to a growing number of jobs” (Joyce Review, 2019) link

8.1 The Commonwealth and the States and Territories to commit, over time, to supporting fee-free foundation-level education for all Australians who need training to bring their language, literacy, numeracy and digital literacy levels up to Level 2 in the Australian Core Skills Framework.
**Why digital literacy**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Skill 1</th>
<th>Skill 2</th>
<th>Skill 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation and food services</td>
<td>Customer service</td>
<td>Organisation and time management</td>
<td>Digital literacy</td>
</tr>
<tr>
<td>Administrative services</td>
<td>Customer service</td>
<td>Organisation and time management</td>
<td>Digital literacy</td>
</tr>
<tr>
<td>Agriculture</td>
<td>Customer service</td>
<td>Organisation and time management</td>
<td>Digital literacy</td>
</tr>
<tr>
<td>Arts and recreation</td>
<td>Organisation and time management</td>
<td>Customer service</td>
<td>Digital literacy</td>
</tr>
<tr>
<td>Construction</td>
<td>Organisation and time management</td>
<td>Customer service</td>
<td>Digital literacy</td>
</tr>
<tr>
<td>Education</td>
<td>Customer service</td>
<td>Organisation and time management</td>
<td>Digital literacy</td>
</tr>
<tr>
<td>Utilities</td>
<td>Organisation and time management</td>
<td>Customer service</td>
<td>Digital literacy</td>
</tr>
<tr>
<td>Professional services</td>
<td>Organisation and time management</td>
<td>Customer service</td>
<td>Digital literacy</td>
</tr>
<tr>
<td>Government services</td>
<td>Customer service</td>
<td>Organisation and time management</td>
<td>Digital literacy</td>
</tr>
<tr>
<td>Real estate</td>
<td>Customer service</td>
<td>Organisation and time management</td>
<td>Sales</td>
</tr>
<tr>
<td>Retail</td>
<td>Customer service</td>
<td>Organisation and time management</td>
<td>Customer service</td>
</tr>
<tr>
<td>Transport and post</td>
<td>Digital literacy</td>
<td>Organisation and time management</td>
<td>Customer service</td>
</tr>
<tr>
<td>Wholesale</td>
<td>Organisation and time management</td>
<td>Customer service</td>
<td>Digital literacy</td>
</tr>
</tbody>
</table>

**Figure 4:** The top three skills demanded by industry in 2030, and extent of shortages in this skill

2 or more times more workers required with this skill than are supplied

> 1.5 to 2 times more workers required with this skill than are supplied

> 1.3 to 1.5 times more workers required with this skill than are supplied

Source: Deloitte Access Economics

[Link: Deloitte Insights - The path to prosperity: Why the future of work is human]
What is digital literacy

'Digital literacy is the ability to identify and use technology confidently, creatively and critically to meet the demands and challenges of living, learning and working in a digital society.'

Associate Professor Jo Coldwell-Neilson,
Faculty of Science, Engineering and Built Environment, Deakin University

Source: Decoding Digital Literacy: Professor Coldwell-Neilson
What is digital literacy/digital skills?

Exhibit 2: Recent growth in demand for select enterprise skills

Growth in proportion of jobs requesting each skill, %, early-career jobs, 2012-2015[12]

- Digital skills: 212%
- Critical thinking: 158%
- Creativity: 65%
- Problem solving: 26%
- Presentation skills: 25%
- Team work: 19%
- Building effective relationships: 15%
- Communication skills: 12%
- Financial literacy: 7%

Demand for enterprise skills has been rising over the past 3 years

Source: Foundation for Young Australians New Work Order report Series
- No specific Australian Digital Literacy framework
- 2 related key Australian VET frameworks: Core Skills for Work (CSfW) and Australian Core Skills Framework (ACSF)
- No one international framework - hundreds
Digital skills grouped across 4 levels of capability:

1. Citizen - mostly from lower level ACSF and CSfW
2. Learner
3. Worker - generic
4. Worker - specialist - mostly from higher level

Source: Google document
<table>
<thead>
<tr>
<th>Frameworks</th>
<th>Training packages/skill sets/IRC’s</th>
<th>Vendor certifications</th>
<th>Labour Market datasets</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>● CSfW</td>
<td>● Digital Skills Cross Sector Project ¹</td>
<td>● International Computer Drivers Licence (ICDL)³</td>
<td>Labour Market/Job data e.g. Burning Glass⁴</td>
<td>● Good Things Foundation (community based, government funded digital literacy training)</td>
</tr>
<tr>
<td>● ACSF</td>
<td>● DigComp 2.0 (EU)</td>
<td>● Internet and Computing Core Certification (IC³)</td>
<td></td>
<td>● School curriculum ‘Digital technologies’</td>
</tr>
<tr>
<td>● DigComp 2.0 (EU)</td>
<td>● OECD Education &amp; Skills Online / PIACC</td>
<td>● Microsoft Digital Literacy Standard Curriculum</td>
<td></td>
<td>● HE framework (Professor Coldwell-Neilson’s work)</td>
</tr>
<tr>
<td>● ESCO Digital Competencies (EU) ²</td>
<td>● Essential Digital Skills Framework (UK)</td>
<td>● Google Applied Digital Literacy Skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Digital Skills (IE)</td>
<td>● Digital Skills Cross Sector Project ¹</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● WEF (Basic/ICT)</td>
<td>● Digital Literacy-eCitizen Skill Set</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Internet and Computing Core Certification (IC³)</td>
<td></td>
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</tbody>
</table>
Digital skills grouped across 5 categories/types of capability:

1. Use
2. Manage
3. Share
4. Secure
5. Create

<table>
<thead>
<tr>
<th>Capability</th>
<th>DigComp2.0 EU</th>
<th>ESCO (Cross sector &amp; Digital Competence) EU</th>
<th>Essential Skills UK</th>
<th>WEF (Basic/ICT)</th>
<th>PIACC (PSTRE) OECD</th>
<th>Digital Skills IE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Use</td>
<td>NA</td>
<td>Use/computer/devices (cross sector)</td>
<td>NA</td>
<td>Using digital technology, networks/access</td>
<td>2. Select software...</td>
<td>Use</td>
</tr>
<tr>
<td>2. Manage</td>
<td>Information and data literacy</td>
<td>Digital data processing (identify, locate, retrieve)</td>
<td>Handle information and content Transacting</td>
<td>Manage (integrate, evaluate)</td>
<td>&lt;1 use search engine</td>
<td>Find</td>
</tr>
<tr>
<td>3. Share</td>
<td>Communication and collaboration</td>
<td>Digital Communication and Collaboration</td>
<td>Communication tools</td>
<td>1. Open, read, respond to email</td>
<td>Communicate and collaborate</td>
<td></td>
</tr>
<tr>
<td>4. Secure</td>
<td>Safety</td>
<td>ICT Safety</td>
<td>Being safe and legal online</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>5. Create</td>
<td>Digital Content Creation</td>
<td>Digital Content Creation</td>
<td>Create information</td>
<td>&lt;1 write...using word processor</td>
<td>Create and innovate</td>
<td></td>
</tr>
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Problem-solving Problem-solving Problem-solving
BIG IDEA 1: Australian Core Digital Capability (ACDC) Framework

- **Context**
  - Citizen: Personal and community
  - Learner: Education and training
  - Worker generic: Workplace and industry
  - Worker specialist: Workplace and industry

- **Capability categories**
  1. Use
  2. Manage
  3. Share
  4. Secure
  5. Create

- **Digital skills**

- **Capability level**

- **Traditional learning journey**
Being digitally literate implies having skills and capabilities across a number of domains, including the ability to:

- use technology;
- find, use and critically evaluate information;
- curate data and media sources;
- communicate, collaborate and participate in online environments;
- manage your online identity as well as your personal security and privacy; and
- create online content, not just consume it.

(Coldwell-Neilson, 2019)
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<td>EU</td>
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<td>OECD</td>
<td>IE</td>
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</tr>
<tr>
<td>Create</td>
<td>Digital Content</td>
<td>Digital Content Creation</td>
<td>Create information</td>
<td>&lt;1 write... using word processor</td>
<td>PSTRE underpinned by Problem-solving</td>
<td>Create and innovate</td>
</tr>
</tbody>
</table>

**Problem-solving**
"Solving problems is an integral part of all the other Key, Competency Strands"

Mayer Committee, 1991

**Employability Skills Framework (AU) (2006)**
- Communication
- Teamwork
- **Problem solving**
- Initiative and enterprise
- Planning and organising
- Self-management
- Learning
- Technology

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**Core Skills for Work Developmental Framework (CSfW) (AU) (2013)**
- Manage career and work life
- Work with roles, rights and protocols
- Communicate for work
- Connect and work with others
- Recognise and utilise diverse perspectives
- Plan and organise
- Make decisions
- **Identify and solve problems**
- Create and innovate
- **Work in a digital world**

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**Enterprise Skills (AU) (2012-2015)**
- Digital literacy
- Critical thinking
- Creativity
- **Problem-solving**
- Presentation skills
- Team work
- Building effective relationships
- Communication skills
- Financial literacy

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**21C Skills by P21 (US)**
- Critical thinking and **problem solving**
- Creativity and innovation
- Cross-cultural understanding
- Communications, information, and media literacy
- **Computing and ICT literacy**
- Career and learning self-reliance
Table 4: Comparing skills demand, 2018 vs. 2022, top ten

<table>
<thead>
<tr>
<th>Today, 2018</th>
<th>Trending, 2022</th>
</tr>
</thead>
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<tr>
<td>Analytical thinking and innovation</td>
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</tr>
<tr>
<td>Complex problem-solving</td>
<td>Active learning and learning strategies</td>
</tr>
<tr>
<td>Critical thinking and analysis</td>
<td>Creativity, originality and initiative</td>
</tr>
<tr>
<td>Active learning and learning strategies</td>
<td>Technology design and programming</td>
</tr>
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<td>Creativity, originality and initiative</td>
<td>Critical thinking and analysis</td>
</tr>
<tr>
<td>Attention to detail, trustworthiness</td>
<td>Complex problem-solving</td>
</tr>
<tr>
<td>Emotional intelligence</td>
<td>Leadership and social influence</td>
</tr>
<tr>
<td>Reasoning, problem-solving and ideation</td>
<td>Emotional intelligence</td>
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</tr>
<tr>
<td>Coordination and time management</td>
<td>Systems analysis and evaluation</td>
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**Enterprise skills:** Enterprise skills are transferable skills such as problem solving, communication, teamwork, and creativity.

**Foundation for Young Australians**
BIG IDEA 2: KASO

KSA
- Knowledge,
- Skills
- Attributes/Attitude
- & Other

KASO
- Know it (knowledge)
- Apply it (skills)
- Solve it (problem-solving)
- Own it (agency)
DIGITAL SKILLS
ACDC (Australian Core Digital Capability)

FUTURE OF WORK

EMPLOYABILITY SKILLS
KASO (Applied Learning Model)

WHAT
HOW

WHY
Digital Agency
Actualised potential and participation

Digital Capability
Other 21st C skills important for participation

Digital Literacy
A broad principle of equity. Foundation skills for participation.

Digital Skills
Specific digital skills for participation in learning & employment context