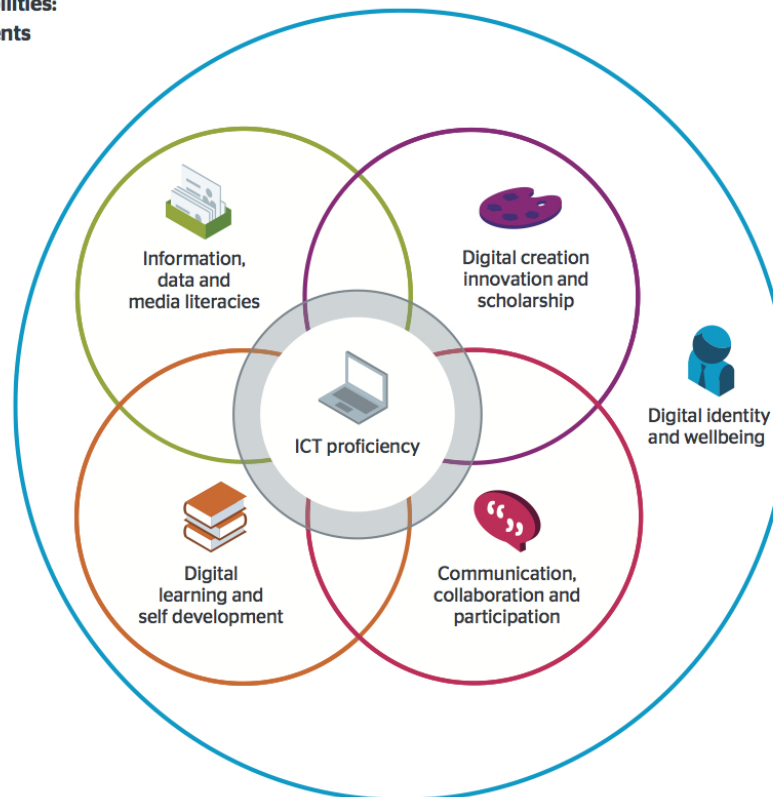


1. Digital capabilities: the 6 elements defined

ICT proficiency	<p>The capacity to use ICT-based devices, applications, software and services via their interfaces (mouse, keyboard, touch screen, voice control etc); to use basic productivity software, web browser, and writing/presentation software; to use digital capture devices.</p> <p>Ability to identify and use digital tools to carry out tasks effectively, efficiently, productively, and with attention to quality. At higher levels, the capacity: to choose, adapt and personalise ICT applications and systems; to critically assess the benefits/constraints of ICT applications and approaches; to design and implement ICT solutions; to recover from failures; to stay up to date with ICT as it evolves; to adopt computational modes of thinking.</p>
Information, media and data literacy (<i>critical use</i>)	Information literacy The capacity to find, evaluate, manage, curate, organise and share digital information, including open content. At higher levels a critical awareness of provenance and credibility. Capacity to interpret information for academic and professional/vocational purposes. Ability to apply the rules of copyright and open alternatives e.g. creative commons. Ability to reference appropriately in different contexts. Ability to record and preserve information for future access and use.
	Media literacy The capacity to critically read communications in a range of digital media – text, graphical, video, animation, audio, haptic etc. At higher levels, the capacity to appreciate audience, purpose, accessibility, impact, modality and to understand digital media production as a practice and an industry. Ability to collate and repurpose media giving due recognition to originators.
	Data literacy The capacity to collate, manage, access and use digital data in spreadsheets and other media; to record and use personal data; to ensure data security and to use legal, ethical and security guidelines in data collection and use. At higher levels the ability to interpret data by running queries, data analyses and reports, and to share data openly.
Digital creation, scholarship and innovation (<i>creative production</i>)	Digital creation The capacity to design and/or create new digital artefacts and materials; digital writing; digital imaging; digital audio and video production; the digital editing of images, video and audio. At higher levels the ability to code and to design apps/applications, games, virtual environments and interfaces.
	Digital research and scholarship The capacity to collect and analyse research data using digital methods. At higher levels to discover, develop and share new ideas using digital tools; to undertake open scholarship; to design new research questions and programmes around digital issues/methods; to develop new digital tools / processes; to evaluate impacts of digital interventions.
	Digital innovation The capacity to develop new practices with digital technology in organisational settings and in specialist subject areas (professional, vocational and disciplinary); digital entrepreneurship. At higher levels the ability to lead organisations, departments, teams and practice/subject areas in new directions in response to digital challenges and opportunities.
Digital communication, collaboration and participation (<i>participating</i>)	Digital communication The capacity to communicate effectively in a variety of digital media and digital forums; to communicate in accordance with different cultural, social and communicational norms; to design communications for different purposes and audiences; to respect others in public communications; to maintain privacy in private communications.
	Digital collaboration The capacity to participate in digital teams and working groups; to collaborate effectively using shared digital tools and media; to work towards shared objectives; to produce shared materials; to use shared calendars and task lists and other project management applications; to work effectively across cultural, social and linguistic boundaries.
	Digital participation The capacity to participate in, facilitate and build digital networks; to participate in social and cultural life using digital services and forums; to create positive connections and build contacts; to share and amplify messages across networks; to behave

	participation	safely and ethically in networked environments.
Digital learning and personal/professional development (<i>learning</i>)		The capacity to identify and participate in digital learning opportunities; to use digital learning resources; to participate in learning/teaching relationships via digital media; to use digital tools (personal or organisational) for learning; to use digital tools to organise, plan and reflect on learning; to record learning events/data and use them for self-analysis, reflection and showcasing of achievement; to undertake self-assessment and participate in other forms of digital assessment; to manage own time and tasks, attention and motivation to learn in digital settings (self-regulation).
Digital identity and wellbeing (<i>self-actualising</i>)	Digital identity management	The capacity to develop and project a positive digital identity or identities and to manage digital reputation (personal or organisational) across a range of platforms; to build and maintain digital profiles; to develop a personal style and values for digital participation; to collate and curate personal materials across digital networks.
	Digital wellbeing	The capacity to look after personal health, safety, relationships and work-life balance in digital settings; to use personal digital data for positive wellbeing benefits; to use digital media to foster community actions and wellbeing; to act safely and responsibly in digital environments; to manage digital stress, workload and distraction; to act with concern for the human and natural environment when using digital tools; to balance digital with real-world interactions appropriately.

**Digital capabilities:
the six elements**



Rationale

The Jisc '7 elements of digital literacy' model is well used and recognised (93% recognition from survey April 2015). Most other frameworks and definitions can be fitted comfortably into one or more of the elements as originally defined. However, since it was first devised, two issues have emerged as critical in living, learning and working effectively with technology: *data literacy* in an age of proliferating personal data, big/deep data and data hacking, and various aspects of '*well-being*' (health, safety, work-life balance, relationships, personal safety and privacy) in an increasingly hybridised (real/virtual) environment. Some of the original elements also look a bit dated as digital practice has moved on and as discourse about digital literacy has become more nuanced and widely shared. The most significant change is to combine 'information' with 'media' literacies, as feedback suggests that users have difficulty distinguishing between the two.

This version has been adapted considerably from an earlier version in response to detailed feedback from 16 stakeholders (over 40 were consulted over the initial version) and broad brush feedback from consultation events, which are ongoing.

There was consensus over the need for shared language and an appetite for a shared framework, but one that was mapped carefully to other frameworks such as the SCONUL 7 pillars, CILIP, ANCIL, UK PSF, Vitae digital lens etc showing how and where these representations add detail to the broader picture.

The framework was seen as most useful to:

- ^ bridge staff and student digital capabilities (i.e. supporting discussion about and planning for both in departments and services)
- ^ plan for embedding digital capabilities into specific subject areas (for which the 7 elements are already well used)
- ^ map digital expertise across different staff roles, e.g. by HR in role description or in individual staff review
- ^ structure professional development

Respondents said:

'[A] mechanism for having discussions about digital capabilities within a common framework – would add some consistency whilst allowing for flexibility when identifying capabilities or fluency goals for particular roles / disciplines.'

'It's a useful background document with the potential to expand narrow conceptions! That the majority of the framework is not about technical skills is great – as such it could be useful as an enlightenment document :)'

'1. To frame research into existing provision at institutional and national level (primarily of interest to educational technology providers and professionals) 2. To structure professional development and capacity building at individual/departmental/institutional level (primarily of interest to practitioners and those responsible for staff and organisational development at both strategic and operational level).'

'Perhaps HR in particular could use this as part of the review process for different performance related elements but also to reconsider what job specifications might be necessary in a digital age. Some of the other frameworks do a similar job but are perhaps more complex and harder to take in.'

Several experienced respondents suggested that a smaller number of elements would aid recognition and local contextualisation. Separate versions for staff and students were seen as desirable, though with a common underlying structure and elements. There was also interest in whether different levels would need to be applied to the different elements for them to be instituted in a diagnostic or developmental way.

The different elements are dealt with in more detail below as there was considerable feedback on each.

The six elements

There is some confusion about **'ICT proficiency'** (fluency, capability, skills, techno-literacy etc) being included as a separate element with the same status as others. ICT proficiency is widely seen as a pre-requisite for or backbone of all the other capabilities and has been removed from some local examples of the 7 elements for this reason. The Beetham and Sharpe development pyramid – widely referenced by people surveyed for this project – has 'functional skills' with ICT as the foundation of more complex abilities and practices. This element has been retained but visually it is placed in the centre, overlapping with all the other elements, to indicate its foundational status.

After feedback particularly from the library community, and bearing in mind international efforts to combine them (e.g. [UNESCO's Media and Information Literacy framework](#)) **'information literacy'** and **'media literacy'** have been brought into alignment. There remain at least two distinct discourses at play here, one focused on information and/or management (affiliated with librarianship and computer science) and the other on making meaning with/from digital media (affiliated with communications and media studies). Students and academic staff with different subject backgrounds will therefore understand this element differently. There was strong support for the inclusion of **'data literacy'** but the boundaries between this and 'information' are also difficult to determine. In educational settings there is an established sense that 'data' is the raw material of research and organisational accountability while 'information' has undergone some secondary analysis. As data becomes more ubiquitous in human thinking and as operations on data become more automated, this distinction is more difficult to keep open. Information, media and data literacy are therefore considered as distinct but closely related elements of digital capability with *critique or judgement, analysis* and *informed use* being important in all of them. This mindset towards the raw materials of digital engagement – data, information and messages in different media - could be summarised as **'critical use'**. Respect for IPR and copyright were still considered important but alongside these an awareness of open alternatives such as creative commons.

'Digital research and scholarship' was seen as too narrow a term to encompass the many ways in which staff and students generate original ideas and outcomes. Staff in vocational and professional subjects for example are often innovating practices rather than ideas. This element has been expanded to include 'innovation' more broadly and other forms of creativity such as design. Although original thinking is central to research as a practice, researchers require other capabilities (see the Researcher profile below), and other staff / students undertake original thinking and development in the digital space. Staff and students can be innovators in their organisational setting as well as in their specialist subject areas. The focus is on the use of digital technologies to develop and propagate ideas/practices that are new not just to their originator but in a wider context. This element now includes creativity and innovation as separate but related capabilities and could be summarised as **'creative production'**.

'Learning' has been expanded to include planning, reflection and self-development (personal and professional) in a digital setting, to allow the framework to include the growing area of e-CPD and to be relevant to staff as well as students. Although support of learning is central to teaching as a practice, teachers require the other capabilities too (see the Teacher profile below). Teaching staff have special responsibilities and capabilities related to the learning of *others* but all individuals can develop themselves through conscious engagement with digital opportunity. 'Learning' remains a somewhat weakly delineated element. Conceptually it could be assimilated to identity as 'self-development' or 'self-realisation', or it could be distributed across all the other capabilities as a particular kind of outcome. However, the precedent is for frameworks describing digital capability in/for

educational settings to highlight learning separately, and this makes them more distinctive and powerful to effect change. There are specialised learning/teaching/assessment systems to be mastered, specialised digital resources to be engaged with (e.g. quizzes, animations, simulations, virtual worlds) and applications of more general technologies to support good learning habits e.g. recording, curation, note-taking and annotation, discussion, collaboration, commenting, giving/receiving feedback etc. Arguably there are also new ways of learning, teaching and assessing appropriate to a hyper-connected age. All of these are comprehended in this element.

'Participation' has been added to **'communication and collaboration'** to reflect the fact that so many aspects of social and cultural life now have an online component. Several commentators felt that this aspect of digital capability needed to be emphasised more strongly and defined more extensively. The practical aspects of citizenship (i.e. engagement) come under this element, though developing and expressing personal values through citizenship activities could be seen as an aspect of identity. While critical use and creative production can be undertaken by an individual using digital tools, participating can only be undertaken in relation to other people, typically mediated through digital networks and interfaces. **'Participating'** summarises these elements.

'Wellbeing' was considered important enough to be added as an additional element, though eventually it has been combined with **'identity'**. Just as ICT proficiency can be seen as the foundation of the other capabilities, identity and wellbeing can be seen as their capstone. If capabilities express 'what I can do' then digital identity and wellbeing express 'who I am when I am doing it'. In developing (or 'actualising') the self as a digital person, one develops one or more manifestations of digital identity, styles of digital participation/use, and values or critical stance specifically in relation to digital opportunities. **Identity and wellbeing** are seen framing and giving meaning or purpose to all the other capabilities.

In relation to the digital literacy development pyramid, which remains widely referenced and used, identity and well-being is the top section of the development pyramid, and ICT proficiency is the base (and can also be described as 'functional skills'). The other four elements are examples of situated digital practice and are more likely to be specialised by subject area, professional role, stage of study or level of activity, etc.

There is no attempt to define 'critical thinking' or 'academic literacies' separately from the ways in which they are manifested in digital practice. These were essential aspects of education before the digital revolution and remain so. The 6 elements focus on digital technologies, practices and media specifically, and refer to the ways critical thinking and academic practice are manifested differently in these digital settings.

Further work

The base model describes in general terms the digital capabilities that a wide range of commentators and professional bodies see as relevant in post-compulsory education. Several versions of the base model have been produced, for learners, teachers, 'leaders' and researchers, in response to feedback that the base model alone does not provide enough detail to support embedding into practice. These versions are *examples* of how the base model could be used and are not meant to be definitive.

Further next steps include mapping the model or more specific versions of the model to existing role definitions and standards, e.g. the UK PSF/ETF professional standards for teaching staff, the Vitae Researcher Development Framework for researchers - bearing in mind that in HE, academic staff will typically have both roles – or more specialised frameworks such as SFIA for IT staff. Further versions could of course be devised for a range of other roles, for specific institutions, and even for subject specialists.

The model remains focused on individuals because it is intended to be used primarily for personal development and reflection. However, it is flexible enough to be used to describe the digital capabilities of teams and organisations, and further versions could emphasise this more strongly.