
A NEW APPROACH TO DIGITAL COMPETENCE BUILDING FOR UNIVERSITY EDUCATORS IN EUROPE

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New (digital media competences for new responsibilities in a networked world

Since the mid 1990's, the exponentially growing adoption of digital information and communication technologies (ICTs) in everyday life has resulted in new social dynamics and reconfigured opportunities for access to expertise and knowledge transfer. This has important implications for teaching and learning processes, for example through participatory cultures and open educational practices. The potential benefits of this include opportunities for informal and peer-to-peer learning, a new attitude toward intellectual property, diversification of cultural expression, a better dialogue around skills valued in the workplace, and a more proactive conception of citizenship.

However, to fully enjoy these benefits, a number of challenges need to be overcome, including unequal opportunities for participation, low media literacy and ethical issues (Jenkins et al., 2015). To address these challenges, it is essential to carefully reconsider the knowledge, skills and attitudes that must be at the core of contemporary learning experiences and, based on that, expand the key attributes that educators should possess in order to meaningfully support learners – across all age groups – in becoming competent professionals and engaged citizens in a networked world. Therefore, it is crucial for institutions and governments to understand how to better design professional development opportunities and capacity building programmes for academics at various career stages.

A number of generic frameworks redefining the idea of literacy in a digital world have emerged over the last few years out of different disciplines, schools of thought and professional sectors (Ala-Mukta, 2011). As a consequence, the range of competences, levels of proficiency, scope and terminology is extremely varied.

More specifically, some proposals have attempted to identify the attributes and qualities that are particularly relevant to academics at various levels (Redecker, 2017; UNESCO, 2011). Ultimately what is at stake is the (re)definition of what it means to be an educator in the context of contemporary educational institutions, what students need to learn and how they can best learn in contemporary networked societies.

For example, building on the work of Siemens (2008) and Bates (2016), the role of an educator in a so-called *connectivist* world could be summarized as follows:

- Amplifying knowledge, by drawing attention to content elements, ideas, thoughts and messages.
- Curating, aggregating and filtering knowledge with their comments, posts, and personal reflections.
- Guiding students' self-directed learning journey, helping them to make sense of complex information.
- Fostering collaboration, both on a small and on a large scale, and co-creation of knowledge by students.
- Modelling, especially when knowledge cannot be effectively communicated in a traditional way
- Guaranteeing a persistent online presence, meeting students anytime and anywhere.

Learning how to teach in an environment where digital ICTs are increasingly ubiquitous implies a fundamental change in routine teaching practices and learning experiences. Issues such as online identity building, trust dynamics and knowledge management come to the foreground with potential for enabling meaningful participation and increasing access of excluded learners (OpenMatt, 2016). Further, while too often presented as technology-driven responses, visions of the role and responsibilities of educators are shaped by and embody particular views on how institutions (and society at large) should operate.

The DIGCOMPEDU Framework

Competency frameworks play an important role in trying to define which skills educators should possess. Further, in the EU context, given the diversity of Europe's cultures, languages and educational systems, competency frameworks aim to enhance both domestic and cross-border transparency of qualifications. One of the most far-ranging EU initiatives is the European Qualification Framework (EQF), which is a meta-framework aimed at increasing transparency and supporting mutual trust to enable comparability of qualification frameworks and systems (European Commission, 2008). Other Europe-wide initiatives include meta-frameworks such as the European Credit System for Vocational Education and Training (ECVET) or the Common European Digital Competency Framework (DIGCOMP), sectoral frameworks related to a specific family of professions, e.g. the European Marketing Confederation Qualification and Certification Framework (EMCQ), European Coaching/Mentoring Competence Framework (EMCC), and the European Competence Framework for Industrial Pharmacy Practice in Biotechnology (PHAR-IN). Additionally, generic frameworks and domain-specific frameworks have been designed to describe cross-domain and domain-specific competencies respectively.

An important recent development in the education domain is the DigCompEdu framework, issued in 2017 by the Joint Research Centre of the European Commission in Seville, that aims to structure and describe the digital competences that European educators should master, with the aim to inform and reinforce national initiatives in the field under a common umbrella.

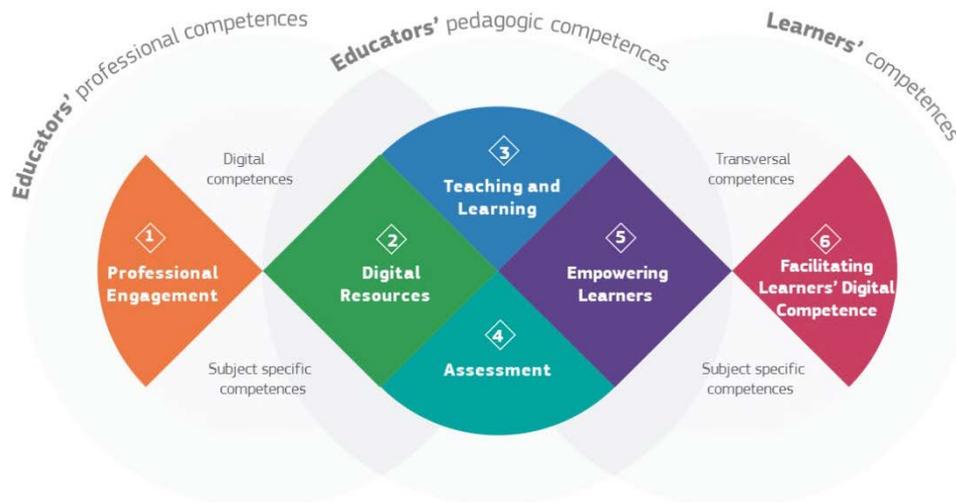


Figure 2. The DigCompEdu framework (source: JRC Seville, 2017)

The DigCompEdu framework is particularly interesting for two reasons. Firstly, it opens up the set of skills that educators should possess beyond teaching-related activities, adding a professional engagement area (on the left in the above figure) and a learners' competency areas (on the right). Secondly, it assigns a fundamental role to collaborative teaching and learning: the 23 competences within the six areas of the framework, which are all described in terms of sub-activities and proficiency descriptors, serve to inspire collaboration among educators, with students, parents and with other stakeholders. By taking this approach, the DigCompEdu framework seeks to enhance an open culture among educators and ultimately to build their capacity to work in open and networked communities. The idea is that the framework should be able to inspire national and institutional training initiatives moving away from activities centred on learning how to use ICT, towards activities aimed at understanding what kinds of collaborations can be fostered by ICT, regardless of the technology aspect. In raising awareness about such collaborative practices, both educators and students can be better informed about issues such as knowledge ownership, transparent collaboration and open digital identity management.

The challenge of operationalising the DigCompEdu framework

The focus that DigCompEdu is putting on collaborative competences and on openness is surely welcome and is probably the only possible way to equip teachers with the capacity to work in our networked societies, but it is also increasing the complexity of any effort to operationalise the framework itself. This is because collaborative and open teaching (which also means collaborative designing, collaborative production of content and collaborative assessment) relies on a number of soft and dynamic competences, such as online identity management, personal data management, ability to engage in intercultural dialogues, collaborative knowledge creation and capacity to deal with ethical and privacy issues. These competences, some of which did not even exist as such just a few decades ago, dynamically evolve over time, influencing and being influenced by ICT developments themselves, and are deeply connected with each person attitudes and behaviours (Cronin, 2017).

We believe that, in order to be successful, attempts to operationalise the DigCompEdu framework – as well as any other capacity building effort that wants to build open and networked capacity of educators – should have three characteristics. It should be *open*, encouraging learners to use the open web and to both reuse and produce Open Educational Resources (OER); *collaborative*, moving away from individual capacity building towards group activities, sharing peer-feedback and interacting with others within communities of practice; and *active*, privileging practical activities (“things that can be done”), aiming to help educators rethink teaching and learning through digital practices.

In parallel, successful capacity building actions should embed three interrelated dimensions of literacy practice (Green & Beavis, 2012). First, an *operational dimension* that includes the skills and competences that enable educators to teach across a range of platforms, tools and media, including making meaning with and from diverse modes such as spoken and written language, images, sounds, videos. Second, a *sociocultural dimension* that refers to developing a repertoire of digital teaching practices in specific social and cultural contexts, such as constructing and/or maintaining effective social and educational relationships online. Third, a *critical dimension* that recognises that meaning-making resources are selective and often operate as a means of social control and social exclusion (Spitzer, 2016).

EduHack.eu: designing an open, collaborative and active learning experience for HE teachers

In line with these principles, the EduHack.eu initiative is developing a capacity building course for European educators based on the DigCompEdu framework, starting from the idea that in order to be able to meaningfully teach in an open and networked world, educators need to not only “learn” how to teach with technology, but should be allowed to “experiment” with it, in an open and collaborative spirit.

In line with the DigCompEdu philosophy (Redecker, 2017), the principles of co-creation, collaborative learning and student/learner engagement are central to the course methodology. As such, the EduHack.eu course is following an active learning approach (i.e. “learning by doing”) drawing on educational paradigms and models including networked learning (Jones, 2015), participatory cultures (Jenkins, Ito, & Boyd, 2015), connected learning (Connected Learning Alliance, n.d.), hybrid pedagogy (Rorabaugh, 2012; Stommel, 2012; Rorabaugh & Stommel, 2012) and Open Education (Weller, 2014), among others.

The novelty of the EduHack.eu course is that its methodology is based on “Eduhackatons”, whereby teaching professionals in higher education (HE) will apply their competences and will produce digitally-supported learning experiences with opportunity to experiment with creative models and approaches to teaching and learning. Throughout the Hackatons, participants will in fact create digital artefacts of different kinds and will develop a rich personal teaching-learning environment on the open web while exploring the Domains of One’s Own (DoOO) philosophy (Udell, 2012) and ‘Publish (on your) Own Site, and Syndicate Elsewhere’ (POSSE) model (Indie Web Camp, 2017). Participants’ own domain (made of a personal and/or project-

based websites) will be a very tangible output that will operate as an open portfolio enabling course participants to show and to reflect on their progresses.

1. Professional development	2. Digital Resources	3. Teaching and Learning	4. Assessment	5. Empowering Learners	6. Facilitating Learners' Digital Competence
<p>1.1 Organisational communication To use digital technologies to enhance organisational communication with learners, parents and third parties. To contribute to collaboratively developing and improving organisational communication strategies.</p> <p>1.2 Professional collaboration To use digital technologies to engage in collaboration with other educators, sharing and exchanging knowledge and experiences and collaboratively reviewing pedagogical practices.</p> <p>1.3 Reflective practice To individually reflect on, critically assess and actively develop one's own digital pedagogical practice and that of one's educational community.</p> <p>1.4 Digital Continuum: Professional Development (CPD) To use digital resources and resources for continuous professional development.</p>	<p>2.1 Selecting digital resources To identify, assess and select digital resources for teaching and learning. To consider the specific learning objective, context, pedagogical approach, and learner group, when selecting digital resources and planning their use.</p> <p>2.2 Creating and modifying digital resources To modify and build on existing openly-licensed resources and other resources where this is permitted. To create or co-create new digital educational resources. To consider the specific learning objective, context, pedagogical approach, and learner group, when designing digital resources and planning their use.</p> <p>2.3 Managing, protecting and sharing digital resources To organise digital content and make it available to learners, parents and other educators. To effectively protect sensitive digital content. To respect privacy and copyright rules. To understand the use and creation of open licenses and open educational resources, including their proper attribution.</p>	<p>3.1 Teaching To plan for and implement digital devices and resources into the teaching process, so as to enhance the effectiveness of teaching interventions. To appropriately manage and orchestrate digital teaching interventions. To experiment with and develop new formats and pedagogical methods for instruction.</p> <p>3.2 Guidance To use digital technologies and services to enhance the interaction with learners, individually and collectively, within and outside the learning session. To use digital technologies to offer timely and targeted guidance and assistance. To experiment with and develop new forms and formats for offering guidance and support.</p> <p>3.3 Collaborative learning To use digital technologies to foster and enhance learner collaboration. To enable learners to use digital technologies as part of collaborative assignments, as means for enhancing communication and collaboration and for collaborative knowledge creation.</p> <p>3.4 Self-regulated learning To use digital technologies to support self-regulated learning processes, i.e. to enable learners to plan, monitor and reflect on their own learning, provide evidence of progress, share insights and come up with creative solutions.</p>	<p>4.1 Assessment strategies for formative and summative assessment To use digital technologies for formative and summative assessment. To enhance the diversity and suitability of assessment formats and approaches.</p> <p>4.2 Analysing evidence To generate, select, critically analyse and interpret digital evidence on learner activity, performance and progress, in order to inform teaching and learning.</p> <p>4.3 Feedback and Planning To use digital technologies to provide targeted and timely feedback to learners. To adapt teaching strategies accordingly and to provide targeted support, based on the evidence generated by the digital technologies used. To enable learners and parents to understand the evidence provided by digital technologies and use it for decision-making.</p>	<p>5.1 Accessibility and inclusion To ensure accessibility to learning resources and activities, for all learners, including those with special needs. To consider and respond to learners' (digital) expectations, abilities, uses and misconceptions, as well as contextual, physical or cognitive constraints to their use of digital technologies.</p> <p>5.2 Differentiation and personalisation To use digital technologies to address learners' diverse learning needs, by allowing learners to advance at different levels and speeds, follow individual learning pathways and goals.</p> <p>5.3 Actively engaging learners To use digital technologies to foster learners' active and creative engagement with a subject matter. To use digital technologies within pedagogic strategies that foster learners' transversal skills, open learning to new, real-world contexts, involve learners themselves in hands-on activities, scientific investigation and complex problem solving, or in other ways that increase learners' active engagement and creative expression.</p>	<p>6.1 Information and media literacy To incorporate learning activities, assignments and assessments which require learners to articulate information needs, to find information and resources in digital environments, to organise, process, analyse and interpret information, and to compare and critically evaluate the credibility and reliability of information and their sources.</p> <p>6.2 Digital communication & collaboration To incorporate learning activities, assignments and assessments which require learners to effectively and responsibly use digital technologies for communication, collaboration and civic participation.</p> <p>6.3 Digital content creation To incorporate assignments and learning activities which require learners to express themselves through digital means, and to modify and create digital content in different formats. To teach learners how copyright and licenses apply to digital content, how to reference sources and attribute licenses.</p> <p>6.4. Responsible use To take measures to ensure learners' physical, psychological and social well-being while using digital technologies. To empower learners to manage risks and use digital technologies safely and responsibly.</p> <p>6.5 Digital problem solving To incorporate learning and assessment activities which require learners to identify and solve technical problems or to transfer technological knowledge creatively to new situations.</p>

Figure 2. The focus of the EduHack course

The EduHack.eu experience includes an online course, followed by an EduHackaton. At the beginning of the online course, learners will be provided with a (sub)domain hosting space. Through the course they will build a personal website – and potentially other project-based sites – and populate the site with content created as a result of a series of activities that participants will need to do, both individually and in collaboration with others. Following the online course, participants will gather in EduHackatons, hands-on events that will address a selection of challenges to education in a digitally/networked era, which will be defined by the learning community (e.g. building meaningful and useful assessment, how to improve student engagement and active participation). The EduHackatons will also be promoted for access by a wider audience, beyond those participants taking the online course, including students. In order to document the process, a platform will be created in order to archive examples of the digital artefacts created by participants, as well as documentation generated at the EduHackatons. By applying detailed metadata, such content will be highly searchable.

Conclusions and future work

The DigCompEdu framework represents an important step in the right direction for stakeholders to understand the importance of embedding openness as a key feature of collaboration within Digital Literacy practices. However, making it operational through capacity building actions that are able to maintain its open and collaborative spirit is not without its challenges.

The EduHack.eu initiative is taking up this challenge through a versatile and comprehensive model for academic professional development, focusing on digital media competences for teaching and learning, that is adaptable to the specific needs and ethos of different types of HE institutions. This model will implement active, open and collaborative learning methods, culminating in the organisation of an Eduhackaton where educators will be able to experiment

with digital technologies for learning, experiencing what it means to be an open and networked educator.

The EduHack.eu model will be piloted during 2018 in three universities in Italy, Spain and the UK, and will then be made available to any institution willing to implement it within its own context.

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