

THE DoCENT COMPETENCE FRAMEWORK FOR DIGITAL CREATIVE TEACHING

* Introduction

The DoCENT framework defines the key-components of competences needed by teacher educators for effectively integrating digital creativity in teaching contexts. Furthermore, it provides and validates a EU reference model for developing and evaluating digital creative teaching competences. The framework is primarily devoted to teacher educators, but can also be used by pre-service / in-service teachers.

* Design process

In order to design the competence framework, we followed the following stages: (a) first, we identified and analysed a set of 26 existing competence frameworks related to the different dimensions of DoCENT, i.e. creativity, digital technologies and teacher education; (b) second, we extracted possible competences from those models; (c) then, we selected the most relevant ones for inclusion in the framework, following a series of criteria; (d) we then synthesised and adapted the competences obtained into a first prototype; and (e) we reviewed, refined and validated the prototype through an expert evaluation conducted in the three countries of the project.

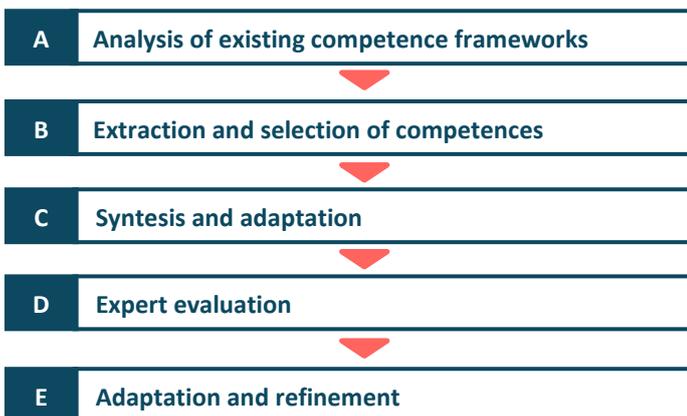


Fig. 1 – Stages of the design process

* Presentation of the model

Based on the structure of the DigCompEdu model¹, the DoCENT framework considers the professional and pedagogical competences of educators, as well as the development of students' digital creative competences. It is divided into six areas and includes a total of 19 competencies:

- *Area 1* focuses on the professional environment of educators;
- *Area 2* focuses on the identification, creation and sharing of creative digital resources;
- *Area 3* describes the use of digital technologies to support creative teaching and learning;
- *Area 4* relates to the use of digital tools and strategies to evaluate creativity;
- *Area 5* focuses on the use of digital tools to empower students;
- *Area 6* focuses on how to facilitate students' digital creativity.

Areas 2 to 5 constitute the pedagogical core of the model: they describe the competencies required to promote creative, innovative, effective and inclusive learning strategies using digital tools.

The different areas of competence and their respective components are described below.

¹ <https://ec.europa.eu/jrc/en/digcompedu>

EDUCATORS' PROFESSIONAL COMPETENCES



EDUCATORS' PEDAGOGICAL COMPETENCES

B DIGITAL CREATIVE RESOURCES

- B1 Identify & select digital resources to generate creative pedagogical ideas
- B2 Create, modify and share digital resources

C DIGITAL CREATIVE PEDAGOGIES

- C1 Build a creative learning environment supported by digital technologies
- C2 Apply creative teaching strategies mediated by digital technologies
- C3 Facilitate classroom interactions that foster students' creativity
- C4 Facilitate synergies

D CREATIVE ASSESSMENT

- D1 Actively engage students in assessment processes which foster metacognition and critical thinking
- D2 Use technologies to evaluate students' creativity

E LEARNERS' EMPOWERMENT

- E1 Call for students' engagement
- E2 Encourage self-learning
- E3 Personalize the learning process
- E4 Promote creativity for all learners

LEARNERS' COMPETENCES

F LEARNERS' DIGITAL CREATIVITY

- F1 Divergent & convergent thinking
- F2 Digital creation and expression
- F3 Information literacy and digital citizenship
- F4 Creative dispositions
- F5 Computational thinking & design thinking

Fig. 2 – The DoCENT competence model

Area A: Professional engagement

Use digital technologies for collaboration and professional development.

A1. Community building

Use digital technologies to collaborate with different members of the educational community (other teachers / trainers, educational stakeholders, NGOs, innovation centres, parents and third parties), to exchange knowledge, experience and methodologies, as well as to initiate or participate in collaborative projects and communities which contribute to educational change.

A2. Reflective teaching practice and digital Continuous Professional Development (CPD)

Continuously reflect on and critically assess one's own digital creative pedagogical practice; identify professional development opportunities and participate in training activities in the field of creative and digital education; investigate about current research, innovations and best practices in the field of creative teaching & learning mediated by digital technologies; inform teacher education programs with best practices.

Area B: Digital creative resources

Source, create and share digital creative tools and resources.

B1. Identify and select digital resources to generate creative pedagogical ideas

Create awareness on digital technologies with a creative educational potential (e.g. manipulative technologies, educational robotics, game design and coding tools); critically evaluate and select digital creative resources for teaching & learning, considering one's specific curricular objectives, resources, learner group and pedagogical approaches; generate and select original ideas for using digital resources through divergent and convergent thinking.

B2. Create, modify and share digital resources

Create, co-create, build on, modify and share digital educational resources by participating in related online communities; correctly apply privacy issues and copyright rules when modifying and sharing digital resources.

Area C: Digital creative pedagogies

Use digital technologies to support creative teaching & learning

C1. Build a creative learning environment supported by digital technologies

- **Create of a positive climate:** establish a non-judgmental, ethical social climate in which all students are supported and accepted; foster open communication and trust; accept new ideas.
- **Promote exploration and invention:** make a flexible use of space and time; make space for exploration processes where students freely interact, investigate, create and try out solutions; use the classroom as a lab; promote risk-taking opportunities where students try before getting it right; use failure as a positive learning factor; accept ambiguity and uncertainty.

C4. Facilitate synergies

- **Create authentic learning opportunities by linking curricular concepts to real life situations:** connect new knowledge to existing perspectives.
- **Bridge between certain subjects, themes and concepts:** create cross-curricular learning opportunities where students can bridge different disciplines and see the relationships between them.
- **Relate different sources of information, media & tools:** encourage students to build knowledge based on different perspectives; link and form associations between different sources of digital information.

C2. Apply creative teaching strategies mediated by digital technologies

Plan, implement and experiment with digital teaching strategies which may enhance students' creativity (e.g. inquiry-based learning, game-based learning, modelling-based learning); use multimodal approaches, including physical, digital and hybrid environments; keep record of the classroom activities (e.g. taking pictures, keeping a diary, creating a digital portfolio with students).

C3. Facilitate classroom interactions that foster students' creativity

- **Foster synergistic collaboration:** encourage students to define, distribute and complete tasks towards a common objective; allow them for evaluating and negotiating each other's contributions through collective decision making; promote students-students and students-teacher.
- **Stimulate expression and dialogue:** settle and manage digital teaching & learning environments where all students can freely express their opinions, share their perspectives and exchange resources; manage group processes and effectively communicate to promote and mediate debates.
- **Encourage democratic practices in digital teaching & learning environments:** promote students' fair-minded and equal participation, sense of group responsibility, respect for others and for other perspectives.

Area D: Creative assessment

Use digital technologies and strategies to assess and foster students' creativity

D1. Actively engage trainees in assessment processes which foster metacognition and critical thinking

Involve students in self-evaluation and peer-evaluation; focus on both the learning process and the outcome, so to encourage students to critically reflect on their learning path, competences, mistakes and progress; use a variety of assessment formats and approaches; use digital technologies to carry out formative and summative assessment (e.g., learning analytics).

D2. Use technologies to evaluate trainees' creativity

Apply criteria (e.g., fluency, flexibility, originality, elaboration) and tools (e.g., digital rubrics) for evaluating trainees' little-c (personal) creativity.

Area E: Empowering Learners

Use digital technologies to enhance inclusion, personalisation and learners' active engagement.

E1. Call for students' engagement

Select and use digital tools and strategies which call for learners' interest and motivation, as well as create an inspiring and stimulating learning environment; work from students' experiences.

E2. Encourage self-learning

Encourage learners to take an active role in learning, work on their own learning needs, organize tasks, self-regulate and solve problems autonomously through digital and physical fabrication; view them as creators, inventors and tinkerers; promote initiative and decision making; support them to become active, responsible members of the digital society.

E3. Personalize the learning process

Use digital technologies and strategies which address students' specific needs, as well as enable them to learn according to their own level, rhythm, pathway and objectives; transform explicit knowledge into tacit knowledge (i.e., help students to internalize new mindsets through meaningful, active learning experiences).

E4. Promote creativity for all learners

Ensure accessibility to learning resources and activities, for all learners, without regard to gender, physical, intellectual, social, emotional, linguistic, cultural, religious, or other characteristics; consider and respond to learners' expectations, abilities, physical or cognitive constraints to their use of digital technologies.

Area F: Learners' digital creativity

Foster students' digital creative competences

F1. Divergent & convergent thinking

Encourage students to identify and solve real-world problems using creative thinking skills, i.e., generate and apply original ideas and solutions by forming remote associations, conceptual combinations, and approaching problems from different angles; evaluate and select ideas using decision-making strategies, so to produce the best possible answers.

F2. Digital creation & expression

Adopt a "maker culture" which fosters students' creative expression of ideas, experiences and emotions in a range of media, through the creation of digital or tangible objects; allow for knowledge construction processes and expression based on students building, making, storytelling, prototyping, engineering and sharing objects that are relevant to a larger community.

F3. Information literacy & digital citizenship

Encourage students to articulate information needs, find information and resources in digital environments; organise, process, analyse and interpret information; compare and critically evaluate the credibility and reliability of information and its sources; participate safely, effectively, critically and responsibly in the digital world.

F4. Creative dispositions

Use digital technologies to promote students' openness to experience, responsible risk taking, tolerance of ambiguity, learning from failure, and viewing challenges as possibilities for learning.

F5. Computational thinking and design thinking

Stimulate students to solve problems and model systems, as well as understand mindsets and behaviors, by drawing on the concepts fundamental to computer science and design thinking.

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