MICRO-CREDENTIAL SYSTEM

Content

Micro-Credential System

The Empower Digi Teach project has adopted the European approach to micro-certificates, aligning with the Council Recommendation on micro-certificates for lifelong learning and employability. In this context, we have examined micro-certification studies from both European and partner countries, producing detailed reports on these findings. We have outlined the general micro-certification processes of the project, which are currently awaiting approval from official institutions and authorized organizations.

The information shared at this stage aims to provide an overview of the framework and fundamental principles behind these processes. We will offer comprehensive details about the structure of the micro-credential system, assessment methods, digital badges, and certification processes developed as part of the Empower Digi Teach project. Detailed information about each micro-credential and the associated digital competencies can be found on each lesson page in the LMS (https://lms.empowerdigiteach.eu/). Upon successfully completing all courses in the Empower Digi Teach Project, learners, including teachers and candidate teachers, can earn up to 21 micro-credentials, as well as 4 badges and 4 certificates. Below, you will find detailed explanations and examples of all these processes.

Micro-credentials are a recent higher education trend that serves as an alternative to standard study programs for obtaining independent official qualifications. These are short, competency-based, industry-aligned learning units that enable individuals to demonstrate mastery of information or competence in a specific location or subject (Oxley & van Rooyen, 2021).

Micro-credentials can provide more precise information on a greater number of learning successes than a course level can. They are useful in higher education for capturing learning that would otherwise go unnoticed by formal academic procedures. Micro-credentials can also be utilized to demonstrate professional learning and improvement in candidates (Clausen, 2022). They are gaining traction in higher education and can be aided by digital platforms (Wheelahan & Moodie, 2022). Micro-credentials can be utilized to enhance instructor abilities, provide relevant information, foster flexibility, and assess earner mastery. They can also be used to promote post-COVID-19 pandemic recovery in a variety of ways, including stimulating innovation in higher education institutions (Tamoliune et al., 2023). Overall, micro-credentials represent a novel, tailored professional development modality that can facilitate transitions from study to work and respond to growing labor demands in industries (Hunt et al., 2020).

The European Council Recommendation seeks to achieve several objectives:

- Facilitate individuals in acquiring, updating, and enhancing their knowledge, skills, and competencies necessary to excel in a constantly evolving job market and society. This enables them to fully benefit from a socially equitable recovery and smooth transitions into environmentally sustainable and digital economies. Moreover, it prepares them to effectively address present and future challenges.
- Support micro-credential providers in preparing themselves to improve the quality, transparency, and adaptability of their educational offerings. This empowerment allows individuals to create personalized learning and career paths tailored to their needs.
- Promote inclusivity, accessibility, and equal opportunities while contributing to the realization of resilience, social equity, and prosperity for all. This is particularly crucial in the context of changing demographics and across all stages of economic cycles.

Four characteristics distinguish the micro-credentialing approach from traditional professional development systems (French & Berry, 2017):

- Competency-Based: Micro-credentials focus on demonstrating teachers' actual skills and abilities rather than on the amount of time they have spent in learning.
- Personalized: Teachers choose micro-credentials based on their own needs, the strengths and challenges of their students, school goals, district priorities, and instructional shifts. They identify specific activities that will help them develop each competency.
- On Demand: Micro-credentials are designed to fit teachers' schedules. Educators can explore new competencies or receive recognition for existing ones in a manner and timeframe that suits them. They can then upload evidence of their proficiency through an online system.
- Shareable: Educators can share their micro-credentials on social media platforms, via email, and on blogs and résumés. As a result, micro-credentials can serve as shareable currency for professional learning.

The target audience of micro-credentials is in-service teachers and pre-service teachers in this project. The target audience for micro-credentials includes both in-service and pre-service teachers. Micro-credentials provide in-service teachers with opportunities for specialization and professional development. They can also support teaching internship courses for pre-service teachers or fulfill the requirements of a 3-credit elective course.

Micro-Credential Platforms from the Common Perspective of Project Partners

In the 2nd Transnational Project Meeting Hosted by UMinho, all partners shared and exchanged their ideas about micro-credential platforms in the context of teacher professional development. UOC introduced national examples such as:

- Fundación Telefónica, a non-profit organization belonging to one of the main Telecommunication companies in Spain, has developed a micro-credentialing system as part of a programme called Ed3, which deals with training at the workplace.
- Fundación Universidad Autónoma de Madrid: The Autonomous University of Madrid offers a micro-credentialing program for companies who wish to provide their workers with certified recognition of the training they undertake.[1]

According to UOC, steps should be followed for developing micro-credential:

- The first step is to identify the specific competencies or skills that are relevant to the learning objectives of the gamified learning environment. This can involve consulting with subject matter experts, analyzing the learning outcomes of the program, and reviewing industry standards.
- Once the competencies are defined, the next step is to develop the assessment criteria for each competency. This can include performance tasks, simulations, quizzes, or other forms of evidence. The assessment criteria should align with the learning outcomes and be challenging enough to validate the learner's competence.
- The assessment process should be designed to be fair, reliable, and valid. This may involve developing rubrics, training assessors, and ensuring that the assessment tasks are aligned with the competencies.
- The standards for success should be clearly defined and communicated to learners. This may involve setting minimum passing scores or establishing other criteria for success. The standards for success should be aligned with the competencies and the learning outcomes of the program.

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[1] https://fuam.es/microcredenciales/

- Once a learner successfully completes the assessment process and meets the standards for success, the competency-based micro-credential can be issued. This may involve issuing a digital badge, certificate, or other form of recognition.

Spain is a Federal country with the responsibilities related to Education being transferred to its 17 autonomous communities. In Catalunya, which is the second autonomous community in terms of population, anybody can issue certificates. It is common that companies or other organisations, such as associations or professional colleges, issue certificates to recognise participation in workshops, conferences, courses or other events.

These institutions can apply to be able to issue certificates that are recognized by the Government, by an application form. The list of organisations that can issue official certificates is publicly available[2]. Teachers can use the certificates issued by these institutions in the same way as those provided by the government in their professional development programmes, for example in order to apply to higher positions or exchange programmes. In the case of the Institute for Professional Development at University of Barcelona, courses should have a minimum of 20 hours in order to be recognised officially. The certificates do not expire.

Teachers' digital competence is regulated by law in Spain, its latest version dating from the 4th of May, 2022[3]. The regulation establishes the "Digital competence for educators Reference Framework"[4], which defines a total of 23 digital competences organised in 6 areas, namely: 1) Professional commitment, 2) Digital content, 3) Teaching and learning, 4) Assessment and feedback, 5) Student empowerment, and 6) Students' digital competence development.

The framework is based on Europe's DigCompEdu, which was adapted to the reality of the education system in Spain. The main adaptations have been:

- Adding a competence, namely 1.5. Protection of personal data, privacy, security and digital well-being, in order to incorporate the prescriptive elements collected by Organic Law 3/2018, of December 5, on the Protection of Personal Data and guarantee of digital rights
- Emphasize the protection of copyright in competence 2.3. Protection, management and sharing of digital content

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[2] https://xtec.gencat.cat/ca/formacio/formacio-altres-institucions/activitats-reconegudes/
[3] https://www.boe.es/diario_boe/txt.php?id=BOE-A-2022-8042
[4] https://intef.es/wp-content/uploads/2023/04/English-SFDCT_2022.pdf

- Integrating aspects of the Organic Law 8/2021, of June 4, on the comprehensive protection of children and adolescents against violence are integrated, especially in area 6
- Functional adaptation, giving greater weight to aspects related to the participation and collaboration of teachers in the educational center

The competence framework includes a progression model, based on the different phases of professional development, which are used as a criterion for establishing the different levels of competence:

1. Stage A: individual analysis
   a. A1) Initial development of Digital competence for educators
   b. A2) Initial, contextualised application
2. Stage B: Classroom
   a. B1) Conventional, autonomous mastery
   b. B2) Transference to new contexts
3. Level C1: School
   a. C1) Innovation and impact on other educators
4. Level C2: Profession
   a. C2) Research, innovation and impact on the profession

The framework is disseminated through the communication channels of the National Institute for Educational Technologies and Teacher training[5].

This institute offers resources and training. In terms of resources, we highlight the following:

- A collection of learning situations and other competency-based didactic materials created by active teachers for all levels of pre-college, formal education. All of them are published under an open license and include the source file for downloading and possible further editing[6].
- AseguraTIC: A website on under 13 age children's digital media safety
- National Center for curricular development in open systems: design, promotion and development of open educational resources (OER) created with free software. It offers

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[5] https://intef.es/
[6] https://intef.es/recursos-educativos/situaciones-aprendizaje/ and https://intef.es/recursos-educativos/itinerarios-didacticos/ and https://procomun.intef.es/

lesson plans, rubrics, networks of teacher support, authoring tool eXeLearning, infographics, and academic articles relevant for the community[7].

● Repository of Projects carried out by teachers or centers that seek to improve some aspect of the educational field with a transforming effect and in which the use of technology is present[8].

● Mathematics with GeoGebra: Didactic guides, created from a selection of curricular materials in the area of Mathematics developed with the GeoGebra tool, aimed at teachers[9].

● Educational technology observatory: It is a virtual library of articles, created by teachers for teachers, about digital innovation in the classroom[10].

● Digital Kit[11]: resources, tools and practical information to support teaching and improve digital skills.

● Live streaming of conferences and other events[12]

In terms of training, the institute offers face-to-face and online courses. As per the first, there are summer courses and other events, such as workshops and conferences. Regarding the online training, there are tutorised courses and other, non-tutorized modalities. The tutorised courses that have been offered lately mostly deal with learning how to plan lessons according to new legislation. As per the non - tutorised courses, there are Massive Open Online Courses (MOOCs) and Nano Open Online Courses (NOOCs). Some of the topics covered in its latest editions deal with Artificial Intelligence, online betting issues in young people, safety of underaged students on the Internet, and collaboration and organisation in digital environments[13]. There is also a library of courses that does not require enrolment, which deal with topics such as computational thinking, educational leadership, or citizenship and digital identity[14]. In addition, the App "EduPills" is available, which offers micro-training for teachers[15]. In terms of certification, in the last years a centralised system for digital credentials

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[7] https://cedec.intef.es/
[8] https://intef.es/recursos-educativos/experiencias-educativas-inspiradoras/
[9] https://intef.es/recursos-educativos/matesgg/
[10] https://intef.es/recursos-educativos/observatorio-de-tecnologia-educativa/
[11] https://formacion.intef.es/course/view.php?id=2
[12] http://aprende.intef.es/endirecto
[13] https://enlinea.intef.es/
[14] https://formacion.intef.es/
[15] https://edupills.intef.es/

has been put in place, where teachers can add the credentials they obtain in these courses to their Open Digital Credential Backpack[16].

In addition to the national-level actions, Spain is a state with a high level of federation, as composed of 19 autonomous regions and 2 autonomous cities. The majority of the autonomous governments have further developed the strategy to promote and maintain educators' digital competence. As an example of one of the most populated regions, in Catalonia the network of Digital Competence for Educators[17] distributes documentation and offers training on this topic.

In Türkiye, universities with teacher training faculties are primarily responsible for developing teachers' professional abilities in their pre-services, while the "General Directorate of Teacher Training and Development" under the Ministry of National Education is in charge of in-service development. Every year, MNE publishes the scheduled in-service training activity plans (name, date, location, limit, length, and the relevant unit details of the activity). In-service training can be delivered face-to-face or online. In addition, there are private and public institutions that are licensed or authorized by the MNE. These institutions are private institutions, public education centers or municipalities. These institutions, which provide education in various branches of education with the authority given by the Ministry of National Education, are obliged to document the education they provide to their students. To receive a Ministry of National Education Approved Certificate, you must complete your education at an institution licensed by the ministry, take the exam under the supervision of ministry supervisors and pass the exam. In order to participate in this exam, you must complete the training you need. With the start of the education process, the institution where you received education notifies the Provincial or District Directorate of National Education that you are a student of the institution. With this notification, the student's required documents are delivered to the affiliated National Education Directorates and it is declared that the education will be completed on the foreseen date. The legal process at the Ministry of National Education begins with this statement. The exam schedule begins to emerge depending on the duration of education you have received.

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[16] https://insignias.educacion.es/
[17] https://projectes.xtec.cat/xtcd/competencia-digital-docent/

In addition, according to the Higher Education Law No. 2547, Continuing Education Centers of universities can open certificate programs for teachers to develop professional competence. Certificate programs offered through SEM generally include a short-term and intensive training process. In addition to theoretical courses, the programs are also supported by practical applications and case studies. Similarly, in these certificate programs, it is envisaged that a minimum number of program hours, continuity, and success conditions are met and that certificates are given to those who meet these conditions. Certification standards for teachers in Türkiye can be found in Table 1.

Table 1. Certification Standards for Teachers in Türkiye

	Inservice Training Programs	**e-Yaygın**	**Private institutions, Public education centers or Municipalities licensed or authorized by the MNE**	**Continuing Education Centers of universities** (according to the Higher Education Law No. 2547)
	Every year, MNE publishes the scheduled in-service training activity plans (name, date, location, limit, length, and the relevant unit details of the activity).	It is a system that enables work and transactions related to educational activities within the General Directorate of Lifelong Learning to be carried out online.	These institutions, which provide education in various branches of education with the authority given by the Ministry of National Education, are obliged to document the education they provide to their students.	Certificate programs offered through SEM generally include a short-term and intensive training process.

Hours of duration	Depends on the case of being a candidate teacher or an is-service teacher. **As for the beginning teachers:** 5 hours of orientation training by their institutions + 15 hours of local in-service training activities + 180 hours of compulsory In-Service Training (distance education) + 30 hours of optional in-service training activities. As for in-service teachers: Not less than 25 hours and no more thah 40 hours of face-to-face inservice training activities. Usually bite-sized activities https://www.oba.gov.tr/ 2023 Plan: https://oygm.meb.gov.tr/dosyalar/planlar/2023_Plan.pdf	In non-modular courses, if the absence period exceeds 1/5 of the course duration, trainees are considered absent and unsuccessful. In modular courses, the absence period of each module cannot exceed 1/5 of the module duration.	Depends on the activity. Duration is not determined by MNE. However, in order to receive a Ministry-approved certificate, the trainer must be authorized by the Ministry of National Education to prove that she is an expert in that field.	It varies according to the regulations and internal directives of the relevant continuing education center. For example, in DESEM, this decision is determined as 14 weeks * 3 hours = 42 hours. https://desem.deu.edu.tr/tr/hakkimizda/yonerge/ https://desem.deu.edu.tr/wp-content/uploads/2023/05/DESEM-2023-YILI-PROGRAM-KATALOGU.pdf
The validity period of certificate	Not defined	Not defined	Not defined	Not defined
Who can issue	Beginning teachers and inservice teachers ÖBA with e-goverment account	Anyone with the e-goverment account	Targeted group that the institutions limit	Targeted group that the CEMs determine

All partners' research on national micro-credential and certification processes continues while the micro-credential system development process progresses. By the way, all partners agree on the following Proposal for a Council Recommendation on a European approach to micro-credentials for the micro-credential framework.

Findings Regarding the Micro-credential System from the Needs Analysis Report

Almost all the teachers expressed a strong agreement (75.3% of teachers rating between 4 and 5 out of a 5-point Likert-type scale) towards being highly motivated if they were provided with a valid and reliable certificate as evidence of their successful participation in a professional development course, according to the DEU report. More than 50% of teachers expressed a

strong willingness to engage in training programs that provide micro-credentials in the future. Moreover, an essential number of teachers, exceeding 50%, strongly believed in the high level of benefits that a micro-credential system would offer them to advance their career goals. Teachers show a strong motivation for micro-credentials, and there is potential to use them effectively for career advancement.

According to the UOC investigation, 85% of respondents rated the importance of this aspect regarding advances in their career goals between 3 and 5 on a scale from 1 to 5. More than half of respondents declare the highest possible level of agreement with the question "How willing would you be considering pursuing a micro-credential to enhance your skills or knowledge in your field?", the remaining 40% lying mainly between a medium and high level of agreement. Teachers highly appreciate collaborating with other colleagues in this type of training, and another is that micro-credentials are very appreciated and motivating.

The UMinho report shows that a significant majority of participants feel motivated by certificates in professional development courses and the concept of micro-credentials. Among 97 respondents, many are interested in pursuing micro-credentials to enhance their skills and advance their career goals.

The KU report demonstrates the high degree of favorability teachers display in response to questions about the significance of micro-credential systems. They would be highly motivated if they were provided with a valid and reliable certificate as evidence of their successful participation in a professional development course. A strong willingness to engage in training programs that offer micro-credentials in the future. A strong belief in the high level of benefits that a micro-credential system would offer them to advance their career goals.

In conclusion, the findings show that the prospect of valid certifications from professional development courses motivates most teachers. Over 50% express a strong willingness to pursue micro-credentials, believing in their career-boosting potential. Respondents emphasize the significance of micro-credentials for career advancement, with strong favorability. Teachers value collaboration in these programs; micro-credentials are broadly appreciated and motivating.

Micro-Credential System – General Specifications

According to the Proposal for a Council Recommendation on a European approach to micro-credentials for lifelong learning and employability, micro-credentials should include a list of common Union standard elements to describe micro-credentials that can be used to support implementation. Procedures regarding the recognition and validity of the certificate to be obtained for the compulsory "Practice in Teaching" or 3 ECTS elective courses of pre-service teachers who are undergraduate students of the Faculty of Education of universities in Türkiye can be carried out by the authorized boards of the relevant universities (https://debis.deu.edu.tr/ders-katalog/2022-2023/eng/en_1099_1099_4057.html).

Mandatory elements:	Identification of the learner
	Title of the micro-credential
	Country/Region of the issuer
	Awarding body
	Date of issuing
	Learning outcomes
	Notional workload needed to achieve the learning outcomes (in ECTS credits, wherever possible)
	Level (and cycle, if applicable) of the learning experience leading to the micro-credential (EQF, QF-EHEA), if applicable
	Type of assessment
	Form of participation in the learning activity
	Type of quality assurance used to underpin the micro-credential
	Prerequisites needed to enrol in the learning activity

Optional elements, where relevant (non-exhaustive list)	Supervision and identity verification during assessment (unsupervised with no identity verification, supervised with no identity verification, supervised online, or onsite with identity verification)
	Grade achieved
	Integration/stackability options (standalone, independent micro-credential/integrated, stackable towards another credential)
	Further information

Micro-Credential System – Technical Specifications

We utilize the open-source Moodle platform as our learning management system in the scope of our project. We are continuing our work and research on implementing micro-credential verifications through an Open Badge infrastructure that can integrate seamlessly with the Moodle platform. In addition, we are designing and developing some content for structuring a micro-credential system. Also, we gather partners' views about these fundamental concepts.

Open Badge - Moodle Integration

For further information -
https://site.imsglobal.org/certifications/moodle/moodle#cert_pane_nid_416496

Sample - https://docs.moodle.org/401/en/Badges

The open badge system leads to the "accredible" system for accreditation and verification. The service fee for this is approximately ** / year. As alternative, the following badge applications have been installed and run on the system. Level up and badges plugins can be specialised for the context.
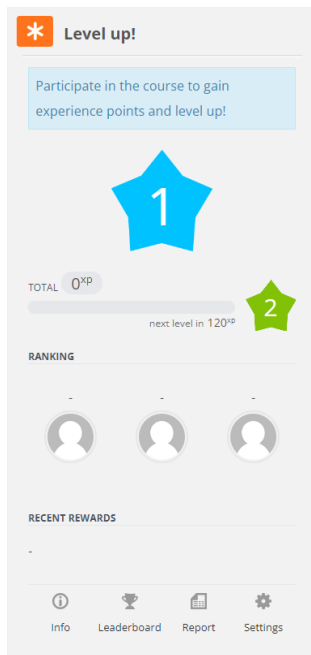
In addition, after the end-of-unit quizzes, the user will be entitled to receive a certificate. Its design and variables (name, surname, unit name etc.) can be customized according to the subject and content. Work on the verification and accreditation of this certificate plugin continues.

EMPOWER
Digi Teach

CERTIFICATE

This certificate is awarded to

Ercan AKPINAR

In recognition of the successful completion of the Technology and Ethics course offered within the scope of the "Empowering Digital Competences of Teachers with Designing Digital Learning Materials through Gamification" Project

TÜRKİYE ULUSAL AJANSI
TURKISH NATIONAL AGENCY

Co-funded by
the European Union

First Draft Micro-Credential System

The first draft designs for the badges and micro-credentials have been completed. We collected feedback from our partners, who generally responded positively to the badge design. Additionally, we received suggestions regarding the names of some main units and the visual selections for the badges. The drafts were finalized by incorporating insights from theoretical frameworks and national examples, leading to the completion of the general structure for the micro-credentials. The first draft of the micro-credentials can be found below..

First Draft Micro-Credential System – Structure

EMPOWER
Digi Teach

DIGITAL MASTERY LAB

Selecting

Creating and Modifying

Managing, Protecting and Sharing

TEACHING EXCELLENCE LAB

Teaching

Guidance

Collaborative Learning

Self-Regulated Learning

ASSESSMENT ANALYTICS LAB

Assessment Strategies

Analyzing Evidence

Feedback and Planning

LEARNER EMPOWERMENT LAB

Accessibility and Inclusion

Differentiation and Personalization

Actively Engaging Learners

First Draft Example: Digital Mastery Lab Badge

In this section, the process for the micro-credential system is described in detail. The initial draft was explained thoroughly, and process improvements were finalized based on feedback received from partners..

To earn the "Digital Mastery Lab" badge, a learner must complete three micro-credentials listed below:

- *Selecting*
- *Creating and Modifying*
- *Managing, Protecting and Sharing*

If a learner wants to earn a micro-credential certificate, such as "Selecting," they should complete the courses listed under the "Selecting" micro-credential certificate.

1.1 Introduction to selecting digital resources

1.2 Searching and evaluating digital resources

1.3 Applying selection criteria in educational settings

If a learner successfully completes all courses (Selecting, Creating and Modifying, Managing, Protecting, and Sharing), they will receive the "Digital Mastery Lab" micro-credential certificate and badge.

First Draft of Empower Digi Teach Badges, Micro-Credentials and Lessons

Below, you will find content related to the project's structure, which includes badges, micro-credentials, and lesson hierarchy to provide a comprehensive perspective. Feedback from project partners on the draft structure has contributed to improving its quality.

Badge

Micro-credential

1.1 Lesson

1.2 Lesson

1.3 Lesson

Figure 1. *Structure of the draft platform*

Digital Resources (Badge)

Selecting (Micro-credential)

1.1 Introduction to selecting digital resources (Lesson)

1.2 Searching and evaluating digital resources (Lesson)

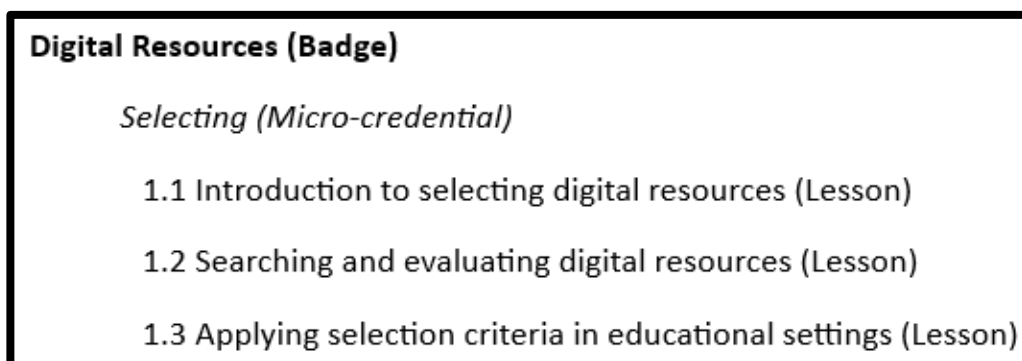1.3 Applying selection criteria in educational settings (Lesson)

Figure 2. *Structure of the draft platform*

Process improvements have been finalized based on feedback received from partners. The goal of this process was to complete the courses and determine the learning outcomes. Below is the first draft of the structure. The feedback from project partners on this draft has helped enhance its quality.

Digital Resources

Selecting

1.1 Introduction to selecting digital resources

1.2 Searching and evaluating digital resources

1.3 Applying selection criteria in educational settings

Creating and Modifying

2.1 Introduction to creating and modifying digital resources

2.2 Creating effective digital resources

2.3 Modifying and adapting existing digital resources

Managing, Protecting and Sharing

3.1 Organizing and managing digital materials

3.2 Data protection and privacy in education

3.3 Sharing and copyright compliance

Teaching and Learning

Teaching

4.1 Introduction to digital learning technologies

4.2 Designing effective digital learning materials

4.3 Supporting learning with digital technologies

Guidance

5.1 Digital feedback and reflection in education

5.2 Providing effective digital feedback

5.3 Reflecting and adjusting teaching and learning practices

Collaborative Learning

6.1 Introduction to collaborative learning with digital technologies

6.2 Strategies for effective online collaboration

6.3 Assessing and reflecting on collaborative learning

Self-Regulated Learning

7.1 Understanding self-regulated learning and digital tools

7.2 Strategies for self-regulated learning with digital technologies

7.3 Reflection and metacognition in self-regulated learning

Assessment

Assessment Strategies

8.1 Introduction to digital assessment

8.2 Formative assessment with digital technologies

8.3 Summative assessment with digital technologies

Analyzing Evidence

9.1 Introduction to analyzing evidence with digital technologies

9.2 Data Collection and analysis tools

9.3 Data-informed decision-making in education

Feedback and Planning

10.1 Understanding the role of feedback and planning

10.2 Providing effective digital feedback

10.3 Planning for further action with digital tools

Empowering Learners

Accessibility and Inclusion

11.1 Understanding accessibility and inclusion in education

11.2 Creating accessible digital content

11.3 Inclusive teaching and Universal Design for Learning (UDL)

Differentiation and Personalization

12.1 Introduction to differentiation and personalization

12.2 Strategies for personalized learning with digital technologies

12.3 Implementing differentiation and personalization in online education

Actively Engaging Learners

13.1 Understanding active engagement in online learning

13.2 Leveraging digital tools for active engagement

13.3 Designing engaging digital learning experiences

Final Version of Micro-Credential System – Information Note

The final version resulted from meetings and feedback from partners about the initial drafts of badges and micro-credentials. The names and contents of badges and micro-credentials have been revised as follows.

Badges

Micro-Credentials

Unit 1: Selecting, Creating and Modifying Digital Resources

- *Selecting Resources*
- *Creating Resources*
  - o *Visuals and Infographics*
  - o *Presentations*
  - o *Digital stories*
  - o *Videos*
  - o *Mind-Concept maps and Word clouds*
  - o *Animations*
  - o *AI based content*
  - o *3D models*
- *Modifying Resources*
  - o *Visuals*
  - o *Audio and video*

Unit 2: Assessment with digital technologies

- *Assessment Strategies*
- *Analysing Evidence, feedback and planning*

Unit 3: Empowering learner with digital technologies

- *Online Project Management*
- *Video Conferencing*
- *Learning Management Systems*
- *Accessibility and Inclusion*

Unit 4: Empowering teachers' pedagogy knowledge

- *Teaching and learning approaches with digital technology*
- *Collaborative Learning with digital technology*

Final Version of Micro-Credential System – Structure

Unit 1: Selecting, Creating and Modifying Digital Resources

Selecting Resources
Creating Resources
    Visuals and Infographics
    Presentations
    Digital stories
    Videos
    Mind-Concept maps and Word clouds

    Animations
    AI based content
    3D models

Unit 2: Assessment with digital technologies

    Assessment Strategies
    Analysing Evidence, feedback and planning

Unit 3: Empowering learner with digital technologies

    Online Project Management
    Video Conferencing
    Learning Management Systems
    Accessibility and Inclusion

Unit 4: Empowering teachers' pedagogy knowledge

    Teaching and learning approaches with digital technology
    Collaborative Learning with digital technology

Final Version of Digital Mastery Lab Badge

In this section, the final version of the micro-credential system process is explained in detail..

Learner who wants to get "Digital Mastery Lab" Badge needs to complete three micro-credential such as below:

- *Selecting Resources*
- *Creating Resources*
- *Modifying Resources*

If learner wants the "Selecting Resources" micro-credential certificate, learner should complete the course such as below under the "Selecting Resources" micro-credential certificate:

Lesson 1.1. Selecting Resources

If learner wants the "Creating Resources" micro-credential certificate, learner should complete the courses such as below under the "Creating Resources" micro-credential certificate:

Lesson 1.2. Creating Resources
Lesson 1.2.1. Visuals and Infographics
Lesson 1.2.2. Presentations
Lesson 1.2.3. Digital stories
Lesson 1.2.4. Videos

Lesson 1.2.5. Mind-Concept maps and Word clouds

Lesson 1.2.6. Animations

Lesson 1.2.7. AI based content

Lesson 1.2.8. 3D models

If learner wants the "*Modifying* Resources" micro-credential certificate, learner should complete the course such as below under the "*Modifying* Resources" micro-credential certificate:

Lesson 1.3. Modifying Resources

    Lesson 1.3.1. Visuals

    Lesson 1.3.2. Audio and video

If a learner successfully completes all courses (Selecting Resources, Creating Resources, and Modifying Resources), they will receive the "Digital Mastery Lab" badge along with the corresponding micro-credentials.

Final Version of Assessment Analytics Lab Badge

Learner who wants to get "Assessment Analytics Lab" Badge needs to complete the micro-credential such as below:

- *Assessment with digital technologies*

If learner wants the "Assessment with digital technologies" micro-credential certificate, learner should complete the courses such as below under the "Assessment with digital technologies" micro-credential certificate:

Lesson 2.1. Assessment Strategies

Lesson 2.2. Analysing Evidence, feedback and planning

If learner complete all courses successfully, learner can get "Assessment Analytics Lab" micro-credential certificate and badge together.

Final Version of Learner Empowerment Lab Badge

Learner who wants to get "Learner Empowerment Lab" Badge needs to complete the micro-credential such as below:

- *Empowering learner with digital technologies*

If learner wants the "Empowering learner with digital technologies" micro-credential certificate, learner should complete the courses such as below under the "Empowering learner with digital technologies" micro-credential certificate:

Lesson 3.1. Online Project Management

Lesson 3.2. Video Conferencing

Lesson 3.3. Learning Management Systems

Lesson 3.4. Accessibility and Inclusion

If learner complete all courses successfully, learner can get "Learner Empowerment Lab" micro-credential certificate and badge together.

Final Version of Pedagogy Excellence Lab Badge

Learner who wants to get "Pedagogy Excellence Lab" Badge needs to complete the micro-credential such as below:

- *Assessment with digital technologies Empowering teachers pedagogy knowledge*

If learner wants the "Empowering teachers' pedagogy knowledge" micro-credential certificate, learner should complete the courses such as below under the "Empowering teachers' pedagogy knowledge" micro-credential certificate:

Lesson 4.1. Teaching and learning approaches with digital technology
Lesson 4.2. Collaborative Learning with digital technology

If learner complete all courses successfully, learner can get "Pedagogy Excellence Lab" micro-credential certificate and badge together.

Final Version of Empower Digi Teach Badges, Micro-Credentials and Lessons

Below, you will find content related to the structure presented within the project, which includes badges, micro-credentials, and lesson hierarchy, to provide a comprehensive perspective.

Badge

Micro-credential

1.1 Lesson

1.2 Lesson

1.3 Lesson

Figure 1. *Structure of the platform*

Digital Resources (Badge)

Selecting (Micro-credential)

1.1 Introduction to selecting digital resources (Lesson)

1.2 Searching and evaluating digital resources (Lesson)

1.3 Applying selection criteria in educational settings (Lesson)
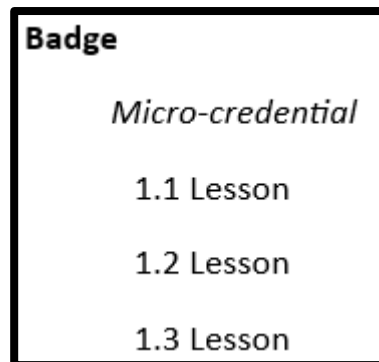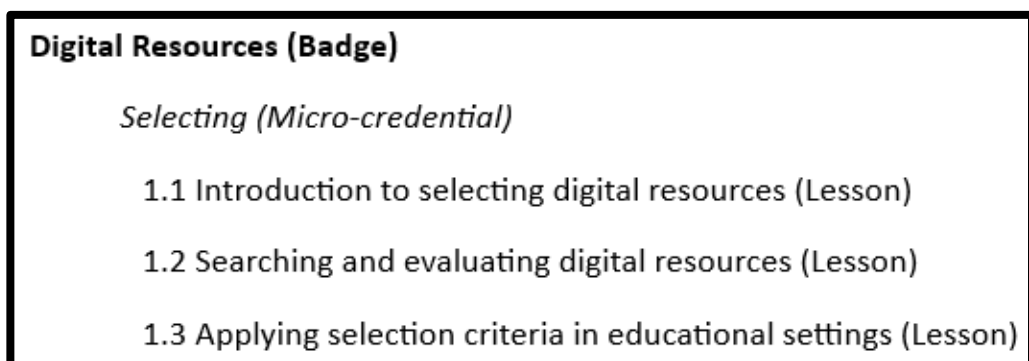
Figure 2. *Structure of the platform*

Digital Mastery Lab

Unit 1: Selecting, Creating and Modifying Digital Resources

Lesson 1.1. Selecting Resources

Lesson 1.2. Creating Resources

Lesson 1.2.1. Visuals and Infographics

Lesson 1.2.2. Presentations

Lesson 1.2.3. Digital stories

Lesson 1.2.4. Videos

Lesson 1.2.5. Mind-Concept maps and Word clouds

Lesson 1.2.6. Animations

Lesson 1.2.7. AI based content

Lesson 1.2.8. 3D models

Lesson 1.3. Modifying Resources

Lesson 1.3.1. Visuals

Lesson 1.3.2. Audio and video

Assessment Analytics Lab

Unit 2: Assessment with digital technologies

Lesson 2.1. Assessment Strategies

Lesson 2.2. Analysing Evidence, feedback and planning

Learner Empowerment Lab

Unit 3: Empowering learner with digital technologies

Lesson 3.1. Online Project Management

Lesson 3.2. Video Conferencing

Lesson 3.3. Learning Management Systems

Lesson 3.4. Accessibility and Inclusion

Pedagogy Excellence Lab

Unit 4: Empowering teachers' pedagogy knowledge

Lesson 4.1. Teaching and learning approaches with digital technology

Lesson 4.2. Collaborative Learning with digital technolog

Sample Micro-Credential - Creating Resources

According to Proposal for a Council Recommendation on a European approach to micro-credentials for lifelong learning and employability, micro-credential in this project includes a list of common Union standard elements to describe micro-credentials that can be used as a resource to support implementation. The original micro-credential document issued on the LMS system is available in the additional supplement 1.

Mandatory elements:	**Identification of the learner**	Full Name: [Learners Full Name] Date of Birth: [Learners Date of Birth] Identification Number: [Learner ID or Learner Number]
	Title of the micro-credential	Creating Resources
	Country/Region of the issuer	[Country or Region where the issuing body is located]
	Awarding body	Dokuz Eylul University, Türkiye On behalf of Erasmus+ project titled as "Empowering Digital Competencies of Teachers with Designing Digital Learning Materials Through Gamification" Project Number: 2022-1-TR01-KA220-HED-000089215
	Date of issuing	Date: [DD/MM/YYYY]
	Learning outcomes	Design effective and engaging digital resources tailored to specific educational needs. Utilize a variety of software tools for the creation of content such as visuals and infographics, presentations,

		digital stories, videos, mind-concept maps and word clouds, animations, AI based content, and 3D models. Apply principles of instructional design to enhance learning through digital resources.
	Notional workload needed to achieve the learning outcomes (in ECTS credits, wherever possible)	ECTS Credits: [Number of ECTS credits, "4 ECTS"]
	Level of the learning experience leading to the micro-credential (EQF, QF-EHEA), if applicable	EQF Level: [Appropriate European Qualifications Framework level, e.g., Level 6]
	Type of assessment	Completion of a test involving the creation of a digital learning resource. Peer assessment and feedback on created digital resources.
	Form of participation in the learning activity	Form: [Online] Duration: [Duration of the course "12 hours"]
	Type of quality assurance used to underpin the micro-credential	Accreditation by [Dokuz Eylul University], ensuring adherence to high-quality standards in curriculum development, delivery, and assessment. Continuous improvement process based on participant feedback and new trends in digital education.
Optional elements, where relevant (non-	**Prerequisites needed to enrol in the learning activity**	Basic knowledge of educational theories and digital literacy. Access to a computer and the internet.
	Supervision and identity verification during assessment	Supervised online with no identity verification through secure.

exhaustive list)	**Grade achieved**	Grade: [Your Grade, e.g., "%70" or "Pass"]
	Integration/stackability options	Standalone micro-credential or part of a larger certification in Digital Mastery Lab.
	Further information	For more details about the program, please contact via https://www.empowerdigiteach.eu/

Sample Audio and Video Micro-credential

There is a sample micro-credential produced within the scope of the "Audio and Video Micro-credential" unit in the project below. Turkish Qualifications Framework, is a national qualification framework that defines, classifies and compares qualifications (diploma, certificate, mastery certificate, etc.) issued as a result of formal and non-formal education activities offered in Türkiye and qualifications issued as a result of recognition of previous learning (vocational qualification certificate (www.tyc.gov.tr). TQF classifies qualifications into 8 different levels. TQF levels are defined without taking into account any learning area. The set of definitions regarding learning outcomes that define each level in terms of knowledge, skill, competency is called "level descriptor". Each level is defined according to the common learning outcomes of the qualifications, and the minimum learning outcomes of different qualifications at the same level are common.

The Level of the learning experience leading to the micro-credential section should be defined in two different ways. First of all, each partner determined the level using the "European Qualifications Framework". Each partner determined the level according to their own national qualifications framework. In this example, the Turkish Qualifications Framework has been put to work in this context.

Audio and Video Micro-credential	
Identification of the learner	Full Name: [Learners Full Name] Date of Birth: [Learners Date of Birth] Identification Number: [Learners National ID or Learners LMS Number]
Title of the micro-credential	Audio and Video Micro-credential
Country/Region of the issuer	Türkiye
Awarding body	Dokuz Eylul University, Türkiye
Date of issuing	Date of Issue: [DD/MM/YYYY]
Learning outcomes	- Explain the role of audio and video in teaching and learning - Explain how to use audio and video at which stages of lesson - Create an audio and a video for teaching and learning - Edit and produce audio and a video for teaching and learning
National workload needed to achieve the learning outcomes	1 ECTS
Level of the learning experience leading to the micro-credential	European Qualifications Framework: Level 3 Higher Education National Level (TYÇ): Level 4
Type of assessment	Formative (interactive video questions) and quiz questions Online exam
Form of participation in the learning activity	Form: Online Duration: 6 hours

Type of quality assurance used to underpin the micro-credential	Project team ensure adherence to high-quality standards curriculum development, delivery, and assessment by continuous improvement process based on participant feedback and new trends in digital education. On behalf of Erasmus+ project titled as "Empowering Digital Competencies of Teachers with Designing Digital Learning Materials Through Gamification" Project Number: 2022-1-TR01-KA220-HED-000089215
Prerequisites needed to enrol in the learning activity	Basic knowledge and level of digital literacy. Access to a computer and the internet.
Supervision and identity verification during assessment	Asynchronous supervisor support during assessment with no identity verification through secure.
Grade achieved	Completion of all learning activities Grade: Exam success rate (%70 and above)
Integration/stackability options	Standalone micro-credential Part of a certification in "Modifying Resources" Part of a "Digital Mastery Lab"
Further information	For more details about the program, please contact via https://www.empowerdigiteach.eu

Quality evaluations of micro-credential certificates to be produced within the scope of the project are carried out using the "The Micro-Evaluator" tool. This tool for recognizing micro-credentials for admission officers, credential evaluators, and anyone interested in the recognition of micro-credentials. This tool will support effective recognition procedures for micro-credentials, in line with the Lisbon Recognition Convention. This tool and application were developed as part of the STACQ project and is co-funded by Erasmus+. The micro-credential of each unit will be evaluated with this evaluator tool (

https://fd8.formdesk.com/nuffic/micro-credentials/?get=1&sidn=d3764d04992e49f686ea2d525d3ac260). Evaluation criteria include Quality Assurance, Verification (not for on-site courses), Level, Learning Outcomes, Workload, Testing and Identification (not for on-site courses). The report regarding the evaluation made using "The Micro-Evaluator" tool of the micro-credential above is given below.
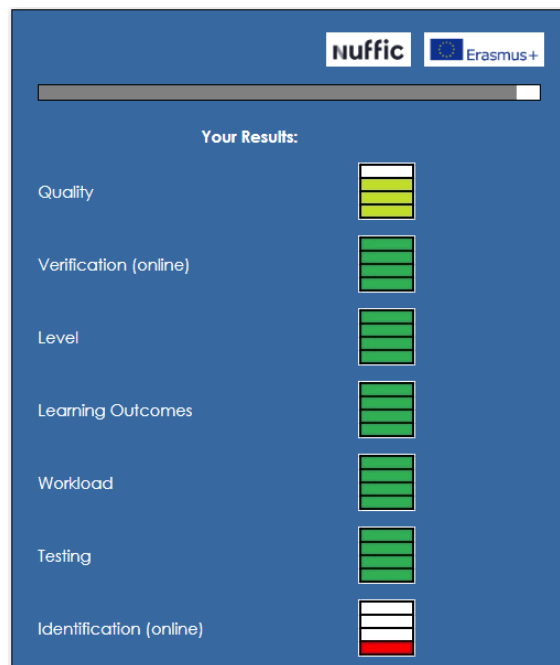
Figure. "The Micro-Evaluator" report of "Audio and Video Micro-credential"

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Additional Supplements

Visuals and Infographics	
Identification of the learner	Full Name: [Learners Full Name] Identification Number: [Learners National ID]
Title of the micro-credential	Visuals and Infographics
Country/Region of the issuer	Türkiye
Awarding body	Dokuz Eylul University, Türkiye
Date of issuing	Date of Issue: [DD/MM/YYYY]
Learning outcomes	- Define the concepts of visuals and infographics. - Explain the differences among the types of visuals and infographics. - Discuss the benefits of using visuals and infographics in educational environments. - Create visuals and infographics for teaching and learning with the help of the digital tools.
National workload needed to achieve the learning outcomes	0.2 ECTS (for university students)
Level of the learning experience leading to the micro-credential	European Qualifications Framework: Level 3 Higher Education National Level (TYÇ): Level 4
Type of assessment	Formative (interactive video questions) and quiz questions Online exam
Form of participation in the learning activity	Form: Online Duration: 5 hours

Type of quality assurance used to underpin the micro-credential	Project team ensure adherence to high-quality standards curriculum development, delivery, and assessment by continuous improvement process based on participant feedback and new trends in digital education. On behalf of Erasmus+ project titled as "Empowering Digital Competencies of Teachers with Designing Digital Learning Materials Through Gamification" Project Number: 2022-1-TR01-KA220-HED-000089215
Prerequisites needed to enroll in the learning activity	Basic knowledge and level of digital literacy. Basic knowledge and level of visual literacy. Basic knowledge and level of instructional design. Access to a computer and the internet.
Supervision and identity verification during assessment	Asynchronous supervisor support during assessment with no identity verification through secure.
Grade achieved	Completion of all learning activities (reading materials, presentations, videos etc.) Grade: Exam success rate (%70 and above)
Integration/stackability options	Standalone micro-credential Part of a "Digital Mastery Lab"
Further information	For more information, please visit https://www.empowerdigiteach.eu or https://lms.empowerdigiteach.eu.

Learners who achieve a score of 70 points or higher on the assignment are awarded a micro-credential document that includes their personal information. An example of this document is shown below.

Visuals and Infographics
Identification of the learner
Full Name: Empower Digi Teach
Identification Number: 12345678911

Learning Outcomes

- Define the concepts of visuals and infographics,

- Explain the differences among the types of visuals and infographics,

- Discuss the benefits of using visuals and infographics in educational environments,

- Create visuals and infographics for teaching and learning with the help of the digital tools

Specifications

Country	Awarding Body	Form	Duration	National Workload
Türkiye	Dokuz Eylul University	Online	5 hours	0.2 ECTS

Integration/Stackability

Standalone

Micro-credential

Part of a "Digital Mastery Lab"

Course Grading

Type of Assessments
-Formative (interactive video questions) and quiz questions
-Online exam
Level of the learning experience leading to the micro-credential

-European Qualifications Framework: Level 3
-Higher Education National Level (TYÇ): Level 4
Grade achieved

-Completion of all learning activities
-Grade: Exam success rate (%70 and above)

	Quality	Transparency	Recognition	Portability

Prerequisites needed to enrol in the learning activity	Type of quality assurance used to underpin the micro-credential
- Basic knowledge and level of digital literacy. - Basic knowledge and level of visual literacy. - Basic knowledge and level of instructional design. - Access to a computer and the internet.	The project team ensure adherence to high-quality standards in curriculum development, delivery, and assessment by continuous improvement process based on participant feedback and new trends in digital education. On behalf of Erasmus+ project titled as "Empowering Digital Competencies of Teachers with Designing Digital Learning Materials Through Gamification" Project Number: 2022-1-TR01-KA220-HED-000089215
Supervision and identity verification during the assessment Asynchronous supervisor support during assessment with no identity verification through secure.	
Further information: Please contact via https://www.empowerdigiteach.eu or https://lms.empowerdigiteach.eu	

Those who successfully complete the courses will receive a certificate, as shown below.

EMPOWER
Digi Teach

CERTIFICATE OF ATTENDANCE

This certificate is awarded to

Empower Digi Teach

in recognition of the successful completion of the

Lesson 1.1. Selecting resources

offered within the scope of the "Empowering Digital Competences of Teachers

with Designing Digital Learning Materials Through Gamification" Project

Co-funded by
the European Union

In the Empower Digi Teach Learning Management System, learners can earn awards, badges, and certificates based on course completion and performance in end-of-course assessments. Progress can be continuously tracked within the LMS, with earned badges serving as visual indicators of achievement.