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T4SVEN

Training 4 Skills in Virtual Environment

IO2. Development of digital course curriculum

**Curriculum for an online course on digital pedagogy in
VET**

Project number: 2020-1-HR01-KA226-VET-094781

KA2 - Partnerships for Digital Education Readiness in Vocational Education and Training

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Aim

The aim of this report is to describe a curriculum that allows the flexible implementation of the course based on the participants' needs to be employed in the training approach of T4SVEN project. The curriculum is designed to be delivered following the asynchronous mode of learning, adopting learner-centered and engaging approaches and interactive content types. The approach will be based on active, experiential and transformational learning, including technology-driven project work, learning scenarios, VR simulations and other process-oriented learning techniques in an on-line learning environment. The report refers to the design of the training content outline and includes three modules with coherent learning units developed to correspond to the real needs of the target group. The learning outcomes for each module are described in detail corresponding to terms of knowledge, skills, and attitudes following the revised Bloom's Taxonomy (Krathwohl, 2002). The course is focusing on the professional development of personnel involved in any kind of work-based learning (WBL) based on the needs analysis results that took place at the first stages of the project as well as on reports concerning factors for stronger vocational education and training (CEDEFOP, 2015).

Audience of this document

The audience of the curriculum are:

- (a) the T4SVEN partners who will undertake the implementation of the project's training
- (b) the VET Schools and Institutes that implement up skilling activities for their personnel involved in any kind of work-based learning
- (c) other training organizations involved in VET training.

Digital Skills for VET teachers according to DigCompEdu

European Framework for the Digital Competence of Educators (DigCompEdu) is a framework describing what it means to be *a digitally competent educator*. Specifically, it is a tool containing a set of recommended digital competences that:

- helps stakeholders to measure the level of digital competence in a common framework
- could be used as self-evaluation form in digital competences
- could be used as a framework to set learning objectives in ICT training opportunities.

The structure of DigCompEdu consists of four (4) dimensions:

Dimension 1:

Competence Areas (CA) identified to be part of digital Competence (6 areas as it seems in Figure 1)

Dimension 2:

Competence Descriptors and titles that are pertinent to each area (as described in Figure 1)

Dimension 3:



Proficiency levels for each Competence (Proficiency levels) (Newcomer (A1) to Pioneer (C2))

Dimension 4:

Knowledge, skills and attitudes needed for each Competence

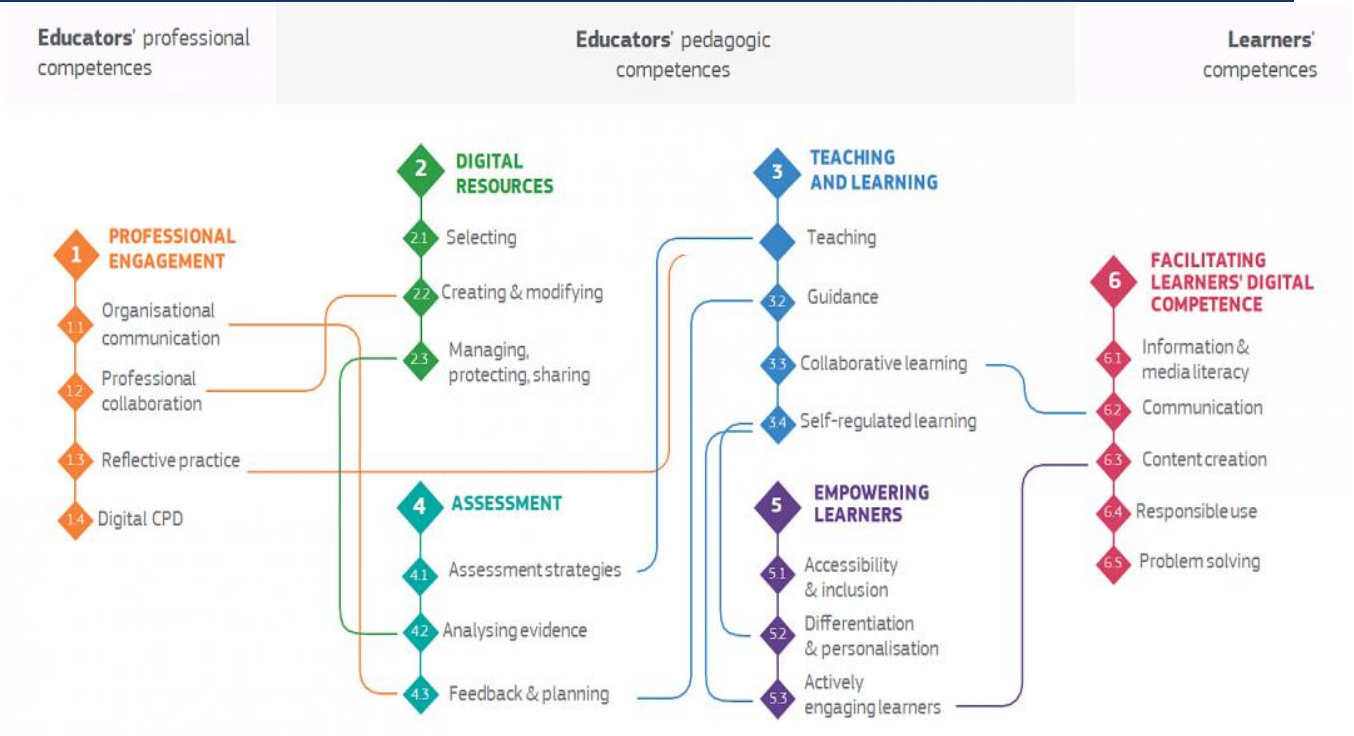
DigCompEdu is used as a basis for designing this curriculum under discussion for T4SVEN project.

According to DigCompEdu framework *Competence* is defined as the capability to reach specific achievements and effectively function within a work/profession setting and describes the capability to successfully complete a pre-defined task involving related abilities, commitments, knowledge, skills and attitudes that enable a person to act effectively in a job or situation. Thus, *Competences* build upon *Knowledge, Skills* and *Attitudes* that are important and necessary for an individual to *know*, to *be able to do* and to *appreciate* in order to carry out a job-related task successfully.

Each competence is described in terms of learning outcomes corresponding to action verbs of the revised Bloom’s Taxonomy (Krathwohl, 2002) according to which learning development is described as a stage process from “*Remembering*” and “*Understanding*” through “*Applying*” and “*Analysing*” to “*Evaluating*” and “*Creating*”.



Source: Redecker, C. *European Framework for the Digital Competence of Educators: DigCompEdu*. Punie, Y. (ed). EUR 28775 EN. Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92- 79-73494-6, doi:10.2760/159770, JRC107466



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Structure of the TRAINING CONTENT

The training course will be offered online with an asynchronous mode and will have a workload of *twenty-five (25) hours* corresponding to *one (1) ECVET*.

The recommended structure of each module is following:

Module 1: Using Open Educational Resources (OERs) in e-learning

Description

In Module 1 important issues concerning Open Educational Resources (OER) and their educational exploitation for supporting teaching and learning procedures are discussed. Definition of OER, properties OER, their role in education, the types of OER are given and criteria for the evaluation of the validity, the reliability and the credibility of information and digital resources are described in detail. Instructions on how to define, access and select digital educational resources in the different phases of the educational process are discussed and good practices for creation, using and reusing digital content and digital tools with respect to copyright and attributing licenses are presented. OERs online repositories are presented and rules for protecting sensitive data and resources are discussed. Finally, the use and incorporation of OERs in different phases of a lesson for various educational purposes and learning objectives are under consideration.

Learning objectives

The aim of Module 1 is to educate/train VET teachers in Open Educational Resources (OER) and their added value in Teaching and Learning.

The objectives of Module 1 are to:

- educate VET teachers in OER, their properties, their types and their potential role in education
- discuss about criteria for the evaluation of the validity, the reliability and the credibility of OER
- describe guidelines on how to define, access and select OER
- present good practices for creation, using and reusing digital content & tools with respect to copyright and attributing licenses are presented.
- train VET teachers incorporating OER in different phases of their lesson.

Content structure

The module will be consisted of three (3) Units:

- Unit 1.1: *Open Educational Resources*



- In U 1.1 teachers-trainees will be educated/trained in order to be able to define, access and select digital educational resources (focusing on OERs) in the different phases of the educational process.
- **Unit 1.2: *Creating / modifying and using digital content***
In U 1.2 teachers-trainees will be familiar with how to create/modify and use/reuse digital content using digital tools with respect to copyright and attributing licenses.
- **Unit 1.3: *Using OERs in the educational procedure***
In U 1.3 teachers-trainees will be familiar with how to organize digital resources and incorporate OERs in their lesson

Learning Outcomes per Unit

The Learning Outcomes are described per Unit in each module aiming to give more accurate description of the course content aims.

Unit 1.1: Open Educational Resources

Teachers-trainees after studying the educational material and getting involved with the learning activities of Unit 1.1 will be:

- aware what OERs are (definition, properties, role, types of resources)
- able to search for OERs for different purposes and select suitable digital resources for teaching and learning, considering the specific learning context and learning objective
- able to compare and critically evaluate the validity, reliability and credibility of information and digital resources
- able to organize, store and retrieve data, information, and content in digital environments

Unit 1.2: Creating / modifying and using digital content

Teachers-trainees after studying the educational material and getting involved with the learning activities of Unit 1.2 will be:

- aware what copyright and attributing licenses are (definitions, differences, types of copyright, creative commons licenses)
- able to consider possible restrictions to the use or re-use of digital resources (OERs) (e.g. copyright, file type, technical requirements, legal provisions, accessibility)
- able to attribute (open) licenses to self-created resources
- able to cite sources appropriately when using copyrighted resources

Unit 1.3: Using OERs in the educational procedure

Teachers-trainees after studying the educational material and getting involved with the learning activities of Unit 1.3 will be able to:

- reach and use OERs online repositories
- share digital resources with others, managing access, rights and privacy terms
- protect sensitive data and resources



- use and incorporate OERs in different phases of their lesson for various educational purposes and learning objectives

Content description:

The educational material will include:

- Documents-PDFs
- Presentations and Presentations with audio recording
- Links (*to presentations, videos, images, websites, documents, audio files, applications*)
- Surveys to detect the prior knowledge of the participants on the content of each Module
- One (1) Learning Scenario (*aiming to introduce participants in Learning Scenarios in an experiential approach*)
- Video (*1 Video per Module*)
- Quizzes (*1 quiz per unit: it will be a self-assessment exercise containing multiple choice questions & matching exercises*)
- Self-Assessment activities (*open ended questions or/and assignments with indicative answers (1 per module)*)
- Assessment questionnaire for each Module

Duration:

Workload of five (5) hours.



Module 2: Digital Pedagogy – Creating and Using Learning scenarios

Description

In Module 2 the important role and practical added value of Learning Scenarios in teaching and learning focusing on Digital Pedagogy are discussed. Synchronous and asynchronous digital environments and tools that support Digital Pedagogy are presented and issues concerning creation, co-creation and sharing of digital educational resources and content using free and shareware tools in Learning Scenarios are negotiated. Familiarization with learning theories, teaching methods/approaches, teaching techniques and tools suitable for affective Learning scenarios is of basic importance in that framework.

Learning objectives

The aim of Module 2 is to educate/train VET teachers on Learning Scenarios focusing in Digital Pedagogy. The objectives of Module 2 are to:

- describe the characteristics and properties of e-learning platforms and learning management systems for education
- educate/train VET teachers to create, co-create and share educational digital resources
- familiarize VET teachers with theories, methods/approaches, techniques and tools suitable for Digital Pedagogy
- educate/train VET teachers to create, modify and re-use effective learning scenarios

Content structure

The module will be consisted of three (3) Units:

- Unit 2.1: *Digital environments for education*
In U 2.1 teachers-trainees will be educated/trained in order to be able to define, access, select and use synchronous and asynchronous digital environments
- Unit 2.2: *Creation of educational digital resources*
In the U 2.2. teachers-trainees will be educated/trained in order to be able to create, co-create and share digital educational resources and content using free and shareware tools
- Unit 2.3: *Learning scenarios*
In the U 2.3. teachers-trainees will be familiar with learning theories, methods/approaches, techniques and tools suitable for Digital Pedagogy and to create Learning scenarios

Learning Outcomes per Unit

The Learning Outcomes are described per Unit in each module aiming to give more accurate description of the course content aims.

Unit 2.1: Digital environments for education



Teachers-trainees after studying the educational material and getting involved with the learning activities of Unit 2.1 will be able to:

- define and describe what synchronous and asynchronous digital environments are
- recognize the characteristics of appropriate each time e-learning platforms and learning management systems for education
- use e-learning platforms and learning management systems for their classroom

Unit 2.2: Creation of educational digital resources

Teachers-trainees after studying the educational material and getting involved with the learning activities of Unit 2.2 will be able to:

- create, co-create and share interactive presentations
- create, co-create and share animations, simulations, simple games
- create, co-create and share videos
- create, co-create and share infographics, posters, leaflets
- create, co-create and share quizzes and exercises

Unit 2.3: Learning scenarios

Teachers-trainees after studying the educational material and getting involved with the learning activities of Unit 2.3 will be:

- familiar with learning theories, methods/approaches, techniques and tools suitable for Digital Pedagogy
- able to describe what a learning scenario is and how to use it
- able to create learning scenarios
- able to use tools and on-line tools for learning scenarios creation/modification
- familiar with evaluation criteria for learning scenarios and to critically evaluate learning scenarios

Content description:

The educational material will include:

- Documents-PDFs
- Presentations and Presentations with audio recording
- Links (*to presentations, videos, images, websites, documents, audio files, applications*)
- Learning Scenarios
- Surveys to detect the prior knowledge of the participants on the content of each Module
- Six (6) Learning Scenarios (*covering subjects for the three specialties of tourism, Hospitality and Transport*)
- Video (*1 Video per Module*)
- Quizzes (*1 quiz per unit: it will be a self-assessment exercise containing multiple choice questions & matching exercises*)
- Self-Assessment activities (*open ended questions or/and assignments with indicative answers (1 per module)*)
- Assessment questionnaire for each Module



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Duration:

Workload of ten (10) hours.



Module 3: Augmented and virtual reality technologies in education

Description

In Module 3 Augmented and Virtual reality technologies are presented and their use in education is discussed. The added value of AR and VR scenarios and applications in education and training is explained. Evaluation criteria for suitable Augment and Virtual reality applications in education are discussed and Platforms and tools for the creation and use of 3D-digital simulations, games and VR scenarios are presented.

Learning objectives

The aim of Module 3 is to familiarize VET teachers with augmented and virtual reality technologies. The objectives of Module 3 are to:

- inform VET teachers about augmented and virtual reality technologies and evaluation criteria for suitable Augmented and Virtual reality applications in education
- explain the use of Augmented and Virtual reality applications in education
- familiarize VET teachers with augmented and virtual reality technologies used in learning scenarios, educational games, educational simulations
- guide VET teachers use of Augmented and Virtual reality applications in WBL procedures
- discuss the use and benefits of VR scenarios in WBL

Content structure

The module will be consisted of two (2) Units:

- Unit 3.1: *Augment and Virtual reality technologies*

In the U 3.1, teachers-trainees will be familiar with augmented and virtual reality technologies and their use in education

- Unit 3.2: *Learning scenarios and AR and VR applications*

In U 3.2, teachers-trainees will be able to use platforms to create 3D-digital simulations and games.

Learning Outcomes per Unit

The Learning Outcomes are described per Unit in each module aiming to give more accurate description of the course content aims.



Unit 3.1: Augment and Virtual reality technologies

Teachers-trainees after studying the educational material and be involved with the learning activities of Unit 3.1 will be:

- able to describe what augmented and virtual reality technologies are
- able to recognize and describe their use in education
- able to use evaluation criteria for suitable Augment and Virtual reality applications in education
- aware of augmented and virtual reality technologies use in learning scenarios, educational games, educational simulations
- able to outline the use of such applications in WBL

Unit 3.2: Learning scenarios and AR and VR applications

Teachers-trainees after studying the educational material and be involved with the learning activities of Unit 3.2 will be:

- familiar with 3D educational simulation designing and creating methods
- able to create a 3D educational simulation for teaching purposes using a game-based virtual reality platform
- able to create learning scenarios using online 3D-digital simulations and games
- able to evaluate online 3D-digital simulations and games for education and WBL
- able to discuss the use and benefits of such application in WBL

Content description:

The educational material will include:

- Documents-PDFs
- Presentations and Presentations with audio recording
- Links (*to presentations, videos, images, websites, documents, audio files, applications*)
- Surveys to detect the prior knowledge of the participants on the content of each Module
- Three (3) Learning Scenarios (*one VR scenario per specialty of tourism, Hospitality and Transport in a frame of WBL approach*)
- Four (4) VR Scenarios (*one Introductory VR scenario on how to create 3D-VR simulations and three VR scenarios - one VR scenario per specialty of tourism, Hospitality and Transport in a frame of WBL approach*)
- Video (*1 Video per Module*)
- Quizzes (*1 quiz per unit: it will be a self-assessment exercise containing multiple choice questions & matching exercises*)
- Self-Assessment activities (*open ended questions or/and assignments with indicative answers (1 per module)*)
- Assessment questionnaire for each Module

Duration:

Workload of ten (10) hours.



Additional issues

- Open Educational resources, open, freeware and shareware tools will be used for the content of the course. Resources, tools and platforms created by partners of the T4SVEN project will also be used.
- A *Final Assignment* will be provided, and a Peer review evaluation procedure will take place.
- For a participant to gain certificate, the successful completion of the Quizzes and the Self-Assessment activities, and the successful completion of the Final Assignment are required. The successful completion of the Final Assignment is achieved when a participant submits his/her Final Assignment and review the Final Assignments of two (2) other participants. It is important to notice that the assessment activities focus on the self-assessment of the gained knowledge for the trainees.

Conclusion

The proposed curriculum aims to offer a flexible implementation of the course based on the needs of VET teachers. The educational approach is based on active, experiential and transformational learning, including technology-driven project work, learning scenarios, VR simulations and other process-oriented learning techniques in an on-line learning environment. The learning outcomes for each module of the course are according to knowledge, skills, and attitudes verbs following the revised Bloom's Taxonomy action verbs.

European Framework for the Digital Competence of Educators (DigCompEdu) is the framework describing what it means to be a digitally competent educator and forms the basis of the course framework.

The course consists of 3 Modules and each module contains two to three units. Important issues concerning Open Educational Resources (OER) and their educational exploitation for supporting teaching and learning procedures are in the core of the educational material. The important role and practical added value of Learning Scenarios in teaching and learning focusing on Digital Pedagogy are emerged. Synchronous and asynchronous digital environments and tools that support Digital Pedagogy are presented and issues concerning creation, co-creation and sharing of digital educational resources and content using free and shareware tools in Learning scenarios are presented. The added value of AR and VR scenarios and applications in education is explained and Platforms and tools for the creation and use of 3D-digital simulations, games and VR scenarios are presented.

Open Educational resources, open, free ware and shareware tools as well as resources, tools and platforms created by partners of the T4SVEN project are used for the content and activities of the course.



References:

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