Intellectual output IO2: Online Teacher Training Programme

IO2 – A3: Curriculum: Teacher Training Course

Augmented Reality for Cultural Heritage Education (AR4CHE)

Workload	60 h
ECTS	2

Short overview of the training course	
Course description	Europe's Cultural Heritage (CH) is considered a shared source of remembrance, understanding, identity, dialogue, cohesion, and creativity for Europe (EU Decision 2017/864). Fostering Cultural Heritage education is also becoming a relevant issue within the initial vocational education and training (iVET) sector. Key drivers of these innovations are teachers enabled to stimulate learners' curiosity, motivation, and cultural awareness. Augmented Reality (AR), which allows experiencing real objects in a joyful and fascinating way, seems an appropriate tool for achieving these pedagogical goals. The fact is that there is a lack of supporting tools for teachers with focus on how to integrate CH-related topics into their teaching and learning strategies by using AR. Thus, this training course offers teachers a unique opportunity to acquire relevant digital, media, and pedagogical skills and competencies needed for the successful incorporation of AR when planning, developing, and implementing didactical activities related to art and CH. Teachers will learn about AR technology, reflect its pedagogical value for inspiring learners for CH-related topics, design and develop AR-based learning content, and plan and implement AR-based teaching and learning scenarios into their subjects to successfully promote Europe's CH. The course will be delivered fully online based on an asynchronous learning platform, which will facilitate self-regulated and flexible learning. The course is divided into five self-contained modules dedicated to any aspect of using AR in the context of CH education. After successful completion of the course, a certificate of achievement can be issued upon request.
Target groups	The primary target group of the training course are iVET teachers of subjects such as Art, History, Media Design and/or production. The proposed subjects seem appropriate for integrating AR-based scenarios for promoting CH-related topics.

	In addition, teachers from secondary schools or higher education sector dealing with related subjects might be addressed by this course. Furthermore, the course and/or separate modules are open for cultural workers, personnel from museums, tourism agencies, city municipalities engaged in promoting cultural assets and touristic destinations.
Course objective	The objective of the training course is to enable course attendees to integrate CH-related topics into their professional activities by using Augmented Reality. In particular, the course aims at empowering teachers to plan, develop, implement, and evaluate pedagogical activities for promoting CH via AR.
Course delivery	The course will be delivered via asynchronous online learning platform Moodle www.ar-cultapp.eu, which will provide the opportunity to learn in a flexible and digitally-supported way. All course teaching and learning materials will be made available to registered attendees for free.
Intended Learning Outcomes	
	Upon completing the training course, attendees will be able: In terms of KNOWLEDGE: ● to understand the concept and pedagogical value of CH ● to explain the concept of AR ● to describe the technological environment for the use of AR; in terms of SKILLS: ● to identify, install, and deploy available AR tools and applications for pedagogical purposes; ● to create teaching materials and learning content for the use in AR ● to assemble simple AR applications. in terms of COMPETENCIES: ● to assess the impact on and benefits for teaching and learning in the context of Cultural Heritage education ● to design and implement suitable pedagogical scenarios for Cultural Heritage-related subjects using AR; ● to foster learners' curiosity and motivation to learn CH-related topics through AR.
Teaching and learning strategies	
	Due to the specifics of the course delivery format, the traditional role of a teacher – as a guide, mentor, or instructor - will be skipped. A teacher will not be physically present during the course delivery. It means that teaching materials to be used will

	be designed and delivered in a self-explaining and interactive manner in order to facilitate an autonomous acquisition of knowledge, skills, and competencies by course attendees. Also, applied teaching methods will focus on keeping motivation and retaining course participants, such as: • Self-study materials (chapter by chapter): textual, illustrated, … • audio and video content (linked or embedded) • hands-on exercises (i.e. try out an AR Editor, develop a concept) • Exercises supported with download materials (sample files, footage) • Glossary • FAQ • Discussion Board/Forum
Course structure	
	The course is divided into five learning modules with the focus on the practical application of Augmented Reality for cultural heritage education. The modular structure of the curriculum should make it possible to consider the needs of the participants regarding the flexibility of the course offerings, time economy, transferability to different fields of application.
Short description of the modules including indicative content:	
	Module 1: Dynamising the cultural heritage in education through augmented reality (10 hours) 1.1 CH: meaning and importance for the European Union 1.2 Challenges of Cultural Heritage Education 1.3 AR: impact on users, difference from VR 1.4 AR as a medium to experience Cultural Heritage 1.5 AR in education for promoting cultural heritage Responsible: ITT Marco Polo Contributor: Effebi

	Module 2: AR – how it works from the technological viewpoint (15 hours) 2.1 Functional elements of AR - Devices (smartphone, tablet, head mounted display) - Components (camera, sensors, …) - Applications - Content formats 2.2 Generating Augmented Reality (methods and case study) - Marker based recognition (MBR) - Location based recognition (LBR) - beacons - Simultaneous localization & mapping (SLAM) - Suitability, strengths, and weaknesses of the methods 2.3 AR editing tools and development platforms Responsible: PAIZ Contributor: NART
	Module 3: AR content production (15 hours) 3.1 The AR content creation process (research, selection, acquisition, storyboard, edition, storage, distribution) 3.2 Creation of own content versus obtaining external content 3.3 Dealing with OER: creative commons licenses, copyright 3.4 Show the story: storytelling for promotion of culture, arts and history 3.5 AR editing tools: input formats (text, images, audio-visuals), editing methods 3.6 Output formats, distribution and dissemination of AR content 3.7 Practice of content creation and production about Cultural Heritage Responsible: CCS Contributor: PAIZ
	Module 4: Project Exercises (10 hours) Course attendees are expected to use prepared exercise material in form of sample files like texts, images, audio, video to assemble three simple AR projects related to CH using a free available AR editor to learn and improve own producing skills. Responsible: Agora Niekée Contributor: FHM

	Module 5: How to set up an AR project applied to CH in the class (10 hours) Our instructional design approach represents a mix of Design Thinking model and ADDIE model. 1. Empathize: analyse your target groups (learners), their needs and your own pedagogical goals, your stakeholders, technological environment, your own skills. Which CH-related topic(s) might be represented/explained via AR? What might be achieved by learners via using available technical sources, time, and budget? Etc. 2. Define: based on the analysis results, formulate a solution for solving your pedagogical problem (into which subject shall you integrate CH-related topic? Which AR tools shall you use? What effect do you expect to achieve by your learners? Etc.) 3. Design phase: plan a lesson/session/project based on the set learning objectives (phase 1 + 2). It's about planning teaching, learning, and assessment strategies, planning AR-based content and selection of concrete tools needed for its production, assigning tasks and roles (of learners, stakeholders, eventually other teachers), delivery format, etc. 4. Development phase: production of content, preparation of specific AR learning and teaching activities; pretest of technical solution and eliminating bugs. 5. Implementation phase: conducting an AR-based lesson/project as prepared under phases 1-4. 6. Evaluation: assessing the effectiveness of the AR project – are the learning goals set under phase 1-2 achieved? 7. Rollout and dissemination: how to present learners' AR project to the wider audience? Responsible: FHM Contributor: Agora Niekee, ITT MP
Requirements for participation	
	This course can be attended without previous knowledge in Augmented reality. Previous knowledge and experience of media education and cultural heritage are not essential, but helpful. Due to the specific of the course delivery format, attendees are expected to have the attribute to learn in a self-determined, self-regulated, and reflective manner.
Assessment	
	☒ Quiz ☒ Multiple Choice Test ☒ Self-assessment