Project title	Augmented Intelligence for Pedagogically Sustained Training and Education
Project acronym	augMENTOR
Grant agreement No.	101061509
Start date of project	01/01/2023
Duration of project	36 months
Project website	https://augmentor-project.eu/

D6.1 The augMENTOR Evaluation Framework

Related work package	WP6
Document reference	D6.1
Related deliverables	D2.1,D6.2
Status	Final
Version	1.0
Due date	30/06/2024
Submission date	28/06/2024
Lead partner	KT
Contributing partners	CSI, IASIS, UPATRAS, EASD, KTU, UDE
Reviewers	IASIS, KTU
Keywords	demonstration plan, evaluation framework, pilots augMENTOR, Target groups, guidelines, KPIs, Objectives, successful criteria, Metrics

Dissemination level	
✔	PU: Public
	Sen: Sensitive
	R-UE/EU-R: EU Classified
	S-UE/EU-S: EU Classified
	C-UE/EU-C: EU Classified

Funded by the European Union

The augMENTOR project (GA No. 101061509) is funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. The European Union cannot be held responsible for them..

Document information

List of contributors	
Name	Partner (short name)
Maria Katranzopoulou	KT
Christos Angelidis	KT
Elisavet Kiourti	CSI
Popi Aresti	CSI
Eleftheria Tsourlidaki	UNIGR
Chara Spyropoulou	IASIS
Andromachi Filippidi	UPATRAS
Aleksandra Mladenovic	EASD
Rasa Kasperienė	KTU

Document History			
Version	Date	Change editors	Changes
0.1	05/04/2024	Maria Katranzopoulou (KT), Christos Angelidis(KT)	Initial version of ToC
0.2	28/05/2024	Maria Katranzopoulou (KT), Christos Angelidis(KT)	Initial draft
0.3	4/06/2024	Maria Katranzopoulou (KT), Christos Angelidis(KT)	Draft ready for internal review
0.4	27/06/2024	Maria Katranzopoulou (KT), Christos Angelidis(KT)	Reviewed version
0.5	28/06/2024	Eleftheria Tsourlidaki (UNIGR)	Pre-final check
1.0	28/06/2024	George Garofalakis (UNI)	Final check, release and submission

Quality control		
Role	Partner (short name)	Approval date
Internal reviewers	IASIS, KTU	16/06/2024
Deliverable leader	KT	27/06/2024
Quality manager	UNIGR	28/06/2024
Project coordinator	UnI	28/06/2024

Funded by the European Union

Table of contents

Funded by the European Union

List of figures

List of tables

Funded by
the European Union

List of acronyms

Acronym	Description
AI	Artificial Intelligence
augMENTOR	Augmented Intelligence for Pedagogically Sustained Training and Education
CSDP	Common Security and Defense Policy
4Cs	Critical Thinking, Communication, Collaboration, and Creativity
CSO	Civil Society Organization
D	Deliverable
DoA	Description of Action
EU	European Union
GDPR	General Data Protection Regulation
ICT	Information and Communications Technology
ID	Identification
KPIs	Key Performance Indicators
LMS	Learning Management System
ML	Machine Learning
NGO	Non-Governmental Organisation
STEAM	Science, Technology, Engineering, Mathematics
TESA	Technology-Enhanced Student Assessment
TPACK	Technological Pedagogical Content Knowledge
WP	Work Package

Funded by the European Union

Executive summary

The D6.1 - The augMENTOR Evaluation Framework provides detailed guidelines for the implementation and evaluation phases of the pilots, ensuring the smooth execution of the overall procedures.

The **Demonstration Plan** is designed to efficiently coordinate and monitor pilot demonstrations across different educational environments. It includes a detailed step-by-step guide for both preparation and pilot phases, outlining essential tasks common to all pilots. Clear Roles and responsibilities are defined for all the stakeholders involved in the pilots to facilitate effective collaboration and support throughout the process. Dedicated tools for ongoing monitoring, reporting, and evaluation are specified, complemented by regular meetings and direct communication channels. These initiatives enhance teamwork, facilitate prompt decision-making, and effectively address issues among stakeholders. Additionally, the plan identifies potential risks associated with the pilot implementations, and establishes strategies for monitoring and mitigating them.

The **Evaluation framework** provides tools and step-by-step guidelines to assess the implementation of pilots. Its primary goal is to evaluate various critical aspects, including the pedagogical framework, technical components, operational elements, and user experience. This structured approach aims to gather data systematically throughout the pilots' process. Data collection methods include quantitative feedback through questionnaires and log files from augMENTOR and LMS platforms and qualitative insights from focus groups. This thorough evaluation procedure ensures alignment with project objectives and Key Performance Indicators (KPIs).

Funded by
the European Union

1 Introduction

1.1 Structure of the document

This document includes the following main sections:

- **Pilots' preparatory work and link to other WPs:** This section briefly outlines the preparatory cross-Work Package (WP) activities done during the first eighteen (18) months of the project to ensure a successful pilot implementation.
- **The Demonstration Plan:** This section provides in detail the necessary activities and tools required to ensure a smooth rollout of the pilots testing, effective implementation, and meaningful data collection. The plan details the pilot preparations, implementation timeline as well as post-pilot reporting activities. Tools for support and guidance, reporting and feedback collection are also presented. Finally, the plan also makes references to the ethical considerations.
- **The Evaluation Framework:** This section presents all the necessary tools for quantitative and qualitative data collection and the guidelines to ensure a thorough evaluation of the pilots and report on the achievement of KPIs.

1.2 Selection of pilots

The augMENTOR solution will be pilot tested in four (4) different educational settings. The pilot sites were selected during the proposal writing period and are described in detail in tasks T6.2, T6.3, T6.4 and T6.5.

Pilot sites were selected so that they cover a wide representation of educational settings including secondary, higher and adult education and institutions from various levels such as universities, vocational training centres, secondary education schools and Non Governmental Organizations (NGOs). Geographic diversity was also a factor, with institutions from different regions to ensure the solution's applicability across various cultural and socioeconomic backgrounds. Additionally, the institutional commitment to engage diverse stakeholders was crucial. Finally, the technological readiness of institutions to integrate with different LMS platforms, such as Moodle and TryHackMe, was essential for smooth implementation and data collection. Additional information about the pilots are included in D8.1 - H - Requirement No. 1, chapter 3 - Description of pilots and in D2.1 - Pilots Definition and User Requirements Analysis, chapter 4 - Pilots' definitions.

Funded by the European Union

2 Pilots' preparatory work and link to other WPs

To ensure a successful pilot implementation several key activities were undertaken across different WPs. These activities were part of the alignment strategy presented in D2.1 (chapter 6). Below we describe briefly the most important activities carried out.

2.1 Course design

The preparatory work commenced with the design of the pilot courses. For the design, the team used a preliminary version of the Technology-Enhanced Student Assessment (TESA) micro-level augMENTOR framework, which is detailed in D3.1 (chapter 2). It should be noted that the TESA framework includes dedicated elements namely, Design and development of the learning resources and Design and development of learning e-activities which essentially describes the different aspects of creative pedagogy as introduced in D4.1 (chapter 2). Based on the educational scenario template (available in D3.1, ANNEX 6), the pilots structured their courses accordingly. Partners worked collaboratively, exchanging feedback and expertise with each other.

Considering the readiness of the Learning Management Systems (LMSs), Moodle and TryHackMe, pilots adjusted the course content, structured activities and assessment strategies to enable implementation through the LMSs. Two workshops were organised in order to train the pilots on how to use Moodle and also bilateral meetings took place for support under the supervision of UPATRAS.

Using TESA, special attention was paid to ensure meaningful integration of the 4Cs — Critical Thinking, Communication, Collaboration, and Creativity into pilot courses. Dedicated activities were designed in the framework of the courses to promote the development of these skills. To assess the development of learners' 4Cs', UCA designed a set of rubrics. The three (3) pilots using Moodle, namely IASIS, UPATRAS, EASD, adopted these rubrics and under the guidance of UCA produced tailored rubrics matching the particular needs of their courses. The resulting rubrics include clear criteria and achievement levels for each competency. Finally, KTU will evaluate the 4Cs using self-assessment questionnaires. The master 4Cs rubric shall be presented in D4.3 in M24. The custom rubrics of each pilot as well as KTU's self-assessment questionnaires are available upon request.

Funded by the European Union

2.2 Creation of courses in the respective LMSs

To be able to use the courses, pilots had to add all the content in the LMS they plan to deploy, thus creating an online course which learners and educators will be able access online. These online courses were also used during the pre-pilot course beta-testing (see section below). The final courses shall include refinements and amendments based on the pre-pilot beta testing. Finally, where needed, all materials were translated before uploading onto the LMSs.

2.3 Pre-pilot course beta testing

Pre-pilot course beta testing was activity 11 of our alignment strategy (as presented in D2.1). Pre-pilot activities were conducted to evaluate course functionality and prepare for full pilot implementation. Through beta-testing, partners had the opportunity to assess their courses and pilot procedures, refine activities and course structures, develop more effective implementation plans, and share valuable experiences (activity 13 of our alignment strategy). In addition, useful data were collected which were deployed to train the ML models (activity 12 of the alignment strategy). The testing phase was initiated according to each pilot's academic year schedule and was completed by M18 (June 2024). The pre-pilot course beta testing also provided substantial insights for the design of the augMENTOR demonstration plan and the evaluation framework.

2.4 Ethical considerations and compliance

Ensuring ethical compliance was a critical aspect of the preparatory work. Detailed information sheets and consent forms were prepared by pilot partners (presented in D8.1 - H - Requirement No. 1, Annex II). Compliance with GDPR and other relevant data protection regulations was strictly adhered to (more information is available in D8.2 - POPD - Requirement No. 2). Ethical approvals were obtained from the relevant institutional review boards.

Funded by the European Union

3 Demonstration Plan

3.1 Purpose and scope of the augMENTOR demonstration plan

The augMENTOR demonstration plan acts as a detailed framework for implementing pilot demonstrations across the selected educational settings. Its purpose is to systematically organise and coordinate the progress and implementation of the pilots. The sections below focus on setting up for the pilot implementation and carrying out the preparatory work as well as the actual pilot implementation timeline. The plan will ensure the timely and organised execution of tasks, providing a clear pathway to achieving the project's objectives.

3.2 Pilots' Overview

This section provides an overview of the pilots, detailing key aspects such as course durations, operational periods, session frequencies, and subjects covered. The following table summarises the essential details for each pilot.

Table 1. Pilots' Overview

Pilot	Length of courses	Running Period	Sessions frequency	Subjects Covered
IASIS	13 weeks	Nov 2024 - May 2025	Each week involves both online and face-to-face two-hour workshops	Diversity and Inclusion, Communication, Problem Solving, Time Management
UPATRAS	11 weeks	Feb 2025 - May 2025	Each week involves both online and face-to-face two-hour sessions.	Computational skills, 21st-century skills (communication, collaboration, creativity, critical thinking), ICT in Education
EASD	9 months	Sep 2024 - May 2025	Four (4) 45-minute sessions per month, except in the first month with two (2) sessions.	Environmental education, Personal carbon footprint calculation, Sustainable practices and climate change awareness

Funded by the European Union

KTU/ACP	Two coding bootcamps - each will last 8 weeks	Sep 2024 - May 2025	Each week includes two-hour asynchronous sessions.	Cybersecurity (ethical hacking, digital threat assessments, protective strategies), Critical Thinking, Strategic Planning

3.3 Recruiting

This section outlines the recruitment strategies for the pilots, detailing the targeted recruit profiles, participation prerequisites, recruitment methods, expected numbers of recruits, and designated recruiting periods. Each pilot aims to engage specific groups of individuals with relevant skills. The recruitment strategies are presented in the table below.

Table 2. Recruitment strategies

Pilot	Type of target recruits	Prerequisites	Means of recruiting	Number of expected recruits	Recruiting period
IASIS	Experienced educators and mental health professionals. Humanitarian sector learners will be chosen for their work with vulnerable populations.	Educators: At least two years of experience in adult education or working in the mental health field. Learners: Active in the humanitarian sector, selected for their engagement with vulnerable populations	Targeted emails and direct invitations through IASIS NGO networks	250 adult learners and (or) Tutors	Sep - Oct 2024
UPATRAS	Second-year students and staff from the Department of Educational Sciences and Early	Enrollment in the compulsory course 'Information and Communication Technologies in Education'	Announce-ments on the Department's website	200 pre-service teachers	No recruiting needed

	Childhood Education of UPATRAS				
EASD	Students aged 13-17 and teachers from Eco-schools in Serbia.	Educators: Selected as STEAM teachers, specialising in various fields (e.g. Biology, Physics, Chemistry)	Direct outreach within the Eco-Schools network	100 students, 10 teachers	Sept 2024
KTU/ACP	Civilian CSDP mission members (Advisors, Monitors, Mentors), and civil society members from various groups like CSO, NGOs, and watchdogs.	Educators: Proficiency in educational technologies and 21st-century skills, skilled in ethical hacking	Open call through ACP outreach mechanisms, specifically via the European Security and Defence College	40 adult learners	Jun - Aug 2024 and Jan-Mar 2025

3.4 Adherence to ethical requirements

All documentation and protocols were prepared during the first year of the project in WP1 and WP8 and presented in the respective deliverables. Deliverable D1.6 - Legal and Ethical Issues Manual, presents the related legislations, the project's ethics framework while it also outlines the legal and ethical management. All pilot participants shall be requested to sign an informed consent form before engaging in any pilot activities. Two distinct forms are prepared, one for tutors and one for learners. In the case of minors, a separate form requiring parental/legal guardian consent is also developed. In addition, the ethics manager shall make sure that all protocols and processes outlined in the WP8 deliverables and D1.6 are followed by all pilot partners.

Funded by the European Union

3.5 Introduction to the augMENTOR solution

Prior to the initiation of the pilots, project partners will organise dedicated sessions to introduce the augMENTOR solution to the involved participants. These training sessions will be organised under (or in coordination with) T7.4 - augMENTOR Workshops and Training Events, in collaboration with pilot partners. During these sessions, participants will have the opportunity to get acquainted with the solution, ask any questions they may have and test it to ensure they are comfortable with its features and functions.

3.6 Roles, tools and responsibilities

Our project team will deploy dedicated tools to ensure that the pilots' implementation is properly monitored and recorded. Certain procedures shall be communicated to all related stakeholders prior to the commencing of the pilot, regarding receiving preparation guidelines (before separate sessions), available support mechanisms and reporting protocols.

Clear channels of communication and dedicated channels for support are essential to ensure seamless pilots' implementation. Educators should have a clear idea of how to contact consortium members in case they need guidance or if they are facing any technical problems. In addition, clear pipelines should also be established among project partners to ensure effective pilot coordination and mitigation of any issues that might arise.

Roles

Expert partners: To ensure the smooth running of the pilots, the project team has appointed a set of expert partners who shall address any issues that may arise and offer their support to the pilots. More specifically, based on the needs of the pilots, we have appointed four (4) different expert partners: pedagogical framework expert, creative pedagogy expert, LMS expert and augMENTOR solution expert.

Pilots' leader: The pilots' leader, the WP6 leader (CSI), is charged with the overall monitoring of the pilots' process. The pilots' leader shall be in constant communication with pilot representatives as well as expert partners to ensure the smooth running of the pilot and the prompt resolving of any issues flagged.

Pilot representatives: Each pilot partner will assign a consortium member from their organisation to assume the role of the pilot representative. The representative is in charge of supporting and communicating with the educators, monitoring the pilot implementation,

reporting to the pilots' leader and communicating any issues that might arise to the respective expert partners.

Educators: These are educators recruited by pilot partners and they will be actively involved in the pilots running. Educators are responsible for running the courses using the dedicated LMS and the augMENTOR solution.

Learners: These are the individuals who will participate in the pilot as course attendees using the dedicated LMS and the augMENTOR solution.

Tools for recording and reporting

Pilot weekly report (ANNEX 1): This document shall be used by educators to report and assess their weekly pilot progress. Pilot representatives shall review the weekly report to ensure smooth implementation. The weekly report will include questions which will allow the project team to review the current state of the pilot. It is a form of formative assessment for the pilot, which will allow the project partners involved in the pilot to make any necessary adjustments to facilitate the smoother run of the pilot.

Request register (ANNEX 1): With this document we aim to catalogue all requests coming from educators and/or learners, like for example guidance on course activities or technical troubleshooting. Educators shall report any requests they have through this register. Pilot representatives shall monitor these requests, communicate them to the respective experts and ensure that all requests are promptly addressed and communicated back to the educators/learners. The Pilots' leader has the overview of the register and ensures that all requests are followed up and resolved.

Course dashboard to organise preparation for pilot sessions (ANNEX 1): This dashboard shall be used to guide educators and help them prepare for weekly sessions. The pilot representatives are in charge of updating the dashboard and aligning with educators before each session.

Pilot overview report: This document is handled by the Pilots' leader. The pilots' leader is in charge of collecting the weekly reports from pilot representatives and keeping a clear overview of pilots' status and an overview of how they evolve over the entire implementation period.

It should be noted that in this section we only present the tools related to the implementation of the pilot including reporting and monitoring. The evaluation tools are

presented below in Chapter 4. As they pilot progress changes in these tools may need to take place to better serve the needs of pilot implementation.

Means of communication:

Google meet/face-to-face meetings: Pilot representatives and the pilots' leaders shall meet weekly to coordinate and keep close track of the implementation process. Pilot representatives will set regular meetings (either face-to-face or online) with their educators based on the timeframe of each pilot to ensure constant communication and alignment. Finally, pilot representatives and the pilots' leader shall meet with partner experts ad-hoc when an issue is raised. WP6 monthly meetings shall be used to report the overall status of each pilot to all partners and exchange valuable feedback between pilots and all other partners involved.

Google spaces for direct communication: To facilitate direct communication, on top of e-mail exchange and ad-hoc online meetings, our team has set four (4), instant messaging channels, one for each expert, using Google chat.

In the following table we present an overview of roles and responsibilities for the pilot implementation, as well as the people assigned to each role.

Table 3. Roles, tools and responsibilities for pilot implementation

Role	Name	Responsibility	Tools deployed
Pilot leader	Popi Aresti (CSI)	Monitors all pilots	Weekly meetings, weekly reports, pilot overview report
		Monitors reported issues status	Requests register
		Prepares overall summary of pilot implementation	Pilot overview report
		Ensures data collection	Weekly reports, Tools mentioned in section 4.2
		Data analysis for evaluation and production of final report	Weekly reports, pilot overview report, Tools mentioned in section 4.2, Evaluation report (D6.2)

Pilot represe-ntatives	Pilot #1: Chara Spyropoulou (IASIS) Pilot #2: Andromachi Filippidi (UPATRAS) Pilot #3: Aleksandra Mladenovic (EASD) Pilot #4: Rasa Kasperienė (KTU)	Monitor pilot running	Weekly meetings, weekly reports and course dashboard
		Monitor and communicate issues to expert partners	Requests register, e-mails, google chat
		Reports to Pilots' leader	Weekly meetings, Tools mentioned in section 4.2
augMENTOR solution technical expert	Dimitris Charala-mpakis (NVCR)	Address related requests from pilot representatives	Request register, e-mails, google chat
LMS technical expert	Nikos Karacapilidis (UPATRAS)	Address related requests from pilot representatives	Request register, e-mails, google chat
Pedagogical framework expert	Vasilis Komis (UPATRAS)	Address related requests from pilot representatives	Request register, e-mails, google chat
Creative pedagogy expert	Margarida Romero (UCA)	Address related requests from pilot representatives	Request register, e-mails, google chat
Educators	Pilots' Recruits	Run pilot sessions	augMENTOR solution, LMS and course dashboard (for session preparation)
		Communicate and coordinate with pilot	Online or face-to-face meetings, weekly report,

Funded by the European Union

		representative	course dashboard
		Fill in weekly reports	Weekly report
		Report issues to pilot representatives (also issues coming from learners)	Requests register
		Participate in the evaluation process	Tools mentioned in section 4.2
Learners	Pilots' Recruits	Participate in pilot sessions	augMENTOR solution and LMS
		Communicate with Educators	Face-to-face or online meetings, LMS
		Participate in the evaluation process	Tools mentioned in section 4.2

3.7 Step-by-step pilot process

Each pilot is free to personalise the pilot process based on the needs of their educators and learners. However, a few steps are common for all. In the following Figure, an overview of the timeline is presented as well as the common steps pilots are expected to follow.

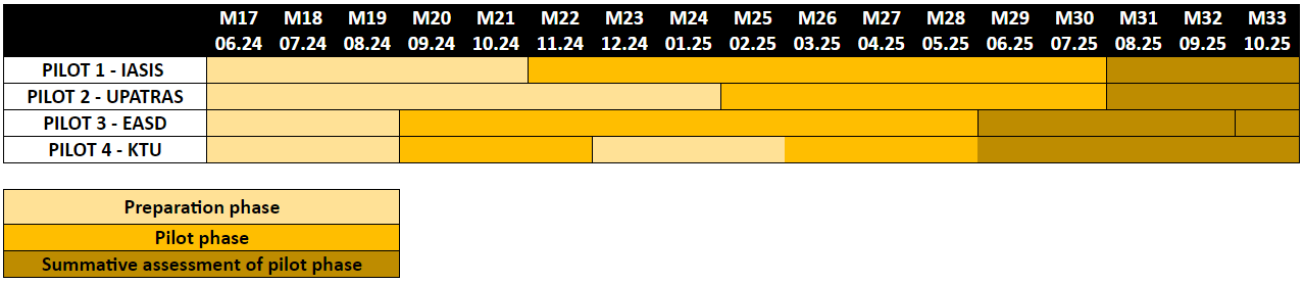

Figure 1. Timeline for the pilots' implementation

Preparation phase steps

Step 1: Process the information gathered during the pre-pilot phase and use it to finalise the courses and make them available in the LMS.
Step 2: Recruiting (if needed) and finalising the list of pilot participants.
Step 3: Sign of informed consent forms (Pilot participants).
Step 4: Pseudonymization process (Pilot representatives).
Step 5: Creation of LMS accounts (Pilot representatives, LMS expert).
Step 6: Introduction to the augMENTOR solution (demo and Q&A session) for each pilot.

Pilot phase steps

Step 1: Preparation of weekly session (only for Educators and pilot representatives)

- Educator: Review course dashboard.
- Pilot representative/Educator: Communication and coordination for the week's session.
- Educators: review of previous week's outcomes.
- Educators: Interaction with the augMENTOR solution based on weekly needs (based on previous week's outcomes, to prepare for upcoming session).

Step 2: Running weekly session

- Educators/learners: Running course tasks assigned to each week in LMS.
- Educators/learners: Interaction with the augMENTOR solution based on course needs
- Pilot representatives: Standby in case assistance is needed.

Step 3: Follow-up of weekly session

- Educators: Complete weekly report.
- Pilot representatives: Review weekly report.
- Educators: Add requests to the Request Register (if necessary).
- Pilot representative/Pilot leader/Expert partners: Follow up on any requests.
- Pilot representative: Prepare course dashboard for next session.
- Pilots leader: Updates the pilots overview report.

The steps described above constitute the general roll out of weekly sessions. Each pilot will step on this roll-out and design the pilot's custom plan to match the needs of their pilot and conduct their courses based on their academic schedules.
It should be noted that based on pilot needs and time frames pilots may choose to run additional rounds of their course. Additionally, unexpected issues faced by pilots may

Funded by the European Union

require adjustments to their timeline. Therefore, the timeline for the pilot implementations may be adjusted as necessary to address these challenges.

3.8 Risks' Mitigation

Use cases do not meet the expectations of augMENTOR

To ensure that the use cases meet the expectations of augMENTOR, our team worked collaboratively to elicit user requirements and produce use cases. Participants from all pilots were actively involved since the early phases of the project, and user perception and data was collected (D2.1). Use cases were designed (D2.2) in collaboration with pilot partners and technical partners receiving input and feedback from both sides. In addition, through the pre-pilot beta testing, our team got useful feedback on the use cases and about what is expected of augMENTOR as well as what it needs to deliver, thus ensuring the use cases meet the expectations of the project.

Insufficient number of end-users in the project's demonstrators: To invite participants, the extensive networks of pilots IASIS, UPATRAS, EASD, and ACP/KTU will be leveraged. IASIS courses for example usually involve around 380 adult trainers, while The Eco-Schools network in Serbia consists of more than 130 educational institutions, including preliminary, primary, secondary and vocational schools. To ensure that the necessary number of participants is reached, targeted recruitment strategies will be implemented and a defined recruitment period will be set (see more in section 3.3). Metrics such as the total number of students, distance learning enrollment rates, and successful course completion rates will be closely monitored. Regular tracking of these metrics will allow for adjustments in recruitment approaches as needed, ensuring a sufficient number of end-users are recruited.

Our pre-pilot beta testing has indicated certain issues that can potentially discourage participation. These insights have been recorded and taken into account; they will help our team make the necessary refinements and adjustments to the pilot courses and roll-out so as to lower this risk even more. In addition, if time allows it, pilots will be encouraged to do a second run of their course to increase the number of end-users. To that end, all pilots will commence as early as possible to allow time for a second run if needed.

Low learners' performance due to system recommendations: Continuous monitoring and assessment mechanisms will be implemented to address this risk. Dedicated tools will be deployed during the pilot and after the pilot so that our team can receive feedback from participants and assess the impact of the recommendations on learners' performance and

Funded by the European Union

engagement. If needed, recommendations will be refined and improved in order to satisfy each pilot's educators' needs. Regular feedback will allow for ongoing adjustments and improvements, ensuring that system recommendations enhance the overall learning experience.

Concerns in data collection and processing: The project has defined approaches that comply with privacy regulations to address privacy concerns in data collection and processing. These approaches include (but are not limited to) minimising the collection of personally identifiable information and adopting anonymization and/or pseudonymization techniques where possible. The WP8 deliverables outline the project's commitment to robust data protection measures (see more in sections 2.4 and 3.4).

It should be noted that all these risks are recorded in the project's Risk Register document and are closely monitored.

4 Evaluation Framework

4.1 Positioning the augMENTOR evaluation framework

The evaluation framework aims to offer a plan to evaluate the different aspects of augMENTOR and assess the degree to which the project meets certain objectives and KPIs. More specifically, according to the Description of Action (DoA), several key objectives align closely with the evaluation framework for the pilots' implementation. These objectives are crucial for ensuring that the project's technological and pedagogical innovations are effectively integrated and assessed within diverse educational contexts. More specifically, the interpretation and the conclusions derived through the analysis after the completion of the pilots will focus on the following objectives:

Objective 1: To design and implement a digitally enhanced pedagogical framework for the adoption of emerging technologies in teaching, learning and training settings through the active involvement of educational actors.
Alignment with the Evaluation Framework: The evaluation framework will assess the integration of emerging technologies in teaching practices by focusing on usage data and educators' feedback regarding user engagement and usability of technological tools.

Objective 3: To advance the proficiency and knowledge capacity of teachers and learners on technological solutions that promote both basic skills and 21st-century competencies, such as communication, collaboration, digital literacy, critical thinking, design thinking, and creativity.
Alignment with the Evaluation Framework: The evaluation framework will measure user experience and satisfaction with augMENTOR's technological features, evaluating their direct impact on the development and perceived improvement of 21st-century competencies.

Objective 5: To understand and support the shifting role of educators through a solution that facilitates engagement, participation, knowledge co-creation, and learning, while being scalable in crises and emergencies.
Alignment with the Evaluation Framework: The evaluation framework will examine educators' interactions with the technological solution, including their engagement levels, adoption rates, and operational efficiency.

Funded by
the European Union

Objective 6: To demonstrate the applicability and effectiveness of the augMENTOR approach across alternative pedagogical paradigms (e.g., social constructivism, cognitive science, connectivism) tested in diverse educational and training settings.
Alignment with the Evaluation Framework: The evaluation framework will evaluate the solution's applicability in different educational contexts based on user acceptance and satisfaction among the pilots.

Objective 7: To develop and thoroughly assess innovative training programmes that augment the digital competencies of pre-service teachers.
Alignment with the Evaluation Framework: The evaluation framework will assess user experience, satisfaction, and the usability and applicability of the training materials and methods that may enhance pre-service teachers' digital skills.

In terms of KPIs, the following KPIs will be monitored through the evaluation framework:

- Distance learning enrollment rates (Target: > 5%)
- Increase of percentage of school-age students with disabilities receiving special education services in general class placements (Target:> 10%)
- Number of students (Target:>200)
- Successful course completion (Target:>80%)
- Number of students per teacher (Target:>50)
- Increased average course experience(Target:>30%)
- Self-reported positive feedback from parents (Target: >20%)
- Self-reported adoption rate by teachers (Target: >50%)
- Rate in gender bias (Target: <20%)

To meet the objectives our framework will focus on the following strands:

Pedagogical framework evaluation: This strand aims to investigate the extent to which the pedagogical framework (including the creative pedagogy part) meets the needs of users and the teaching community regarding:

- the integration of emerging technologies in current teaching practices.
- promoting the deployment of emerging technologies that focus on the development of 21st century skills.

Technical evaluation: This strand will focus on the augMENTOR solution's functionalities, specifically on users' experience and how the educators and the learners interacted with and utilised its features. In addition, it will evaluate the quality of the generated feedback and recommendations.

Operational evaluation: This strand will assess the pilot implementation process based on the proposed demonstration plan. It will examine the degree to which it was followed as well as its applicability.

User acceptance evaluation: This strand will gauge satisfaction, effectiveness and adoption rates based on the measured and analysed outcomes. It will also identify areas for improvement, and determine the success of both individual modules and the overall solution.

The dedicated tools and methodology for the pedagogical framework evaluation will be delivered through the work done in T3.4 and T4.3 prior to the commencement of the pilots. For the other evaluation strands, a first version of the tools is presented in the present deliverable. Through the work done in T6.6 these tools will be further refined and the final version shall be delivered prior to the commencement of the pilots.

4.2 Tools and timeline of the data collection for evaluation

During the pilot phase, we will use the tools presented in section 3.6 for constant monitoring and the formative assessment of the pilot process. Formative evaluation will mainly occur in step 3 (Follow-up of weekly session) of the pilot phase. Upon completion of the pilots, we will deploy an additional set of tools to facilitate the overall evaluation (summative assessment). Below we present the steps to be taken and the tools deployed so as to collect all the necessary data for the overall evaluation:

Step 1: The Pilots' leader produces the final pilot overview reports based on the weekly reports collected during the pilot phase.

Step 2: Pilot representatives receive feedback from educators and learners through dedicated **questionnaires** to evaluate the pilot run.

Step 3: Educators or pilot representatives organise **focus groups (using a dedicated script)** with learners (and parents if applicable) to collect feedback on their overall experience to evaluate the pilot run.

Funded by the European Union

Step 4: Pilot representatives organise **a final face-to-face or online focus groups** with educators to wrap up the course and collect any final feedback (also coming from step 2, **using a dedicated script**) to evaluate the pilot run.

Step 5: Pilot representatives collect all data needed to measure KPIs linked to the pilots (see section 4.1) and share them with the Pilots leader.

Step 6: Pilot representatives share evaluation input with the Pilot leader (collected in steps 2, 3, 4 and 5).

Step 7: The Pilots' leader also collects data and log files from the LMSs and the augMENTOR solution. These data will include data collected throughout the pilot phase, which encompass information on learner engagement and performance and the solution's usage from the learners and educators.

Step 8: The Pilots' leader produces the final evaluation of the pilots based on all data collected in the previous steps. This evaluation encompasses an in-depth analysis of learners' and educators' actual activities. By meticulously analysing this data, the Pilots' leader shall evaluate the overall progress of each pilot, identifying strengths, weaknesses, and areas for improvement as well as the degree to which the project's KPIs and objectives have been achieved.

It should be noted that the tools mentioned in the steps above and presented in Annex 2 will be further refined in T6.6 in collaboration with T3.4 and T4.3. For the analysis of the collected data a preprocessing and meta-analysis procedure will be developed and used. The resulting findings will be synthesised into a detailed report, offering a concise summary of outcomes and actionable recommendations to enhance performance and effectively align with project objectives. These insights will be presented in deliverable D6.2 - Evaluation of the augMENTOR Pilots.

Funded by the European Union

5 Conclusions

The demonstration plan and evaluation framework outlined in this deliverable are designed to provide guidelines to test and assess the augMENTOR solution and pedagogical framework across four diverse educational settings. This structured approach ensures that the implementation and evaluation processes are comprehensive, systematic, and tailored to capture the nuanced impacts of the toolkit on teaching and learning.

Our demonstration plan includes detailed steps for engaging stakeholders, preparing the pilot sites, conducting effective training sessions, and providing ongoing support. It ensures that all necessary tools and resources are in place and that any potential challenges are anticipated and addressed promptly. The plan's phased implementation allows for continuous monitoring and adjustments, fostering an environment conducive to the successful deployment and adoption of the solution.

The evaluation framework is designed for a robust assessment of the pilots' implementation. It presents a mix of quantitative and qualitative data collection tools that will be used to gather comprehensive insights into learner outcomes, stakeholders' feedback, and technical performance. This multifaceted evaluation approach will help us understand the direct impacts on learning and teaching, as well as the broader implications for scalability and integration in different educational settings.

Ultimately, the findings from this pilot testing phase will offer valuable evidence on the efficacy of the AI-boosted educational solution. The insights gained will inform decisions about potential refinements, wider implementation strategies, and future development directions. By rigorously testing the toolkit in varied educational settings, we aim to ensure that it meets the diverse needs of learners and educators across Europe, thereby contributing to the enhancement of personalised learning experiences and educational outcomes.

Funded by
the European Union

ANNEX 1 - Tools for recording and reporting

Pilot weekly report

Session planning and materials

- To what extent was the weekly plan followed? 1-5
    - Any comments?

- Did you have to make adjustments to the course content or schedule? Yes/No
  If so, please specify what adjustments were made. Comment:
    - If so, did you make adjustments based on feedback and/or recommendations you received from the augMENTOR solution? Yes/No

Learner engagement and participation

- Number of attendees
- Please rate learners' engagement 1-5
- Any particular highlights related to learners' engagement you'd like to comment on?

Assessment and assignments

- Was Feedback shared with any learners? (indicate number)
- Were Recommendations shared with any learners? (indicate number)
- How did the learners' respond to received feedback and/or recommendations ?

Support and communication

- Did you encounter any technical issues? Please specify
  LMS:
  augMENTOR solution:
- How was your communication with the pilot representative? (1-5)

augMENTOR solution utilisation

- Did learners engage with augMENTOR solution?
- Did your learners encounter any technical issues ?
  LMS:
  augMENTOR solution:

Funded by the European Union

- Did you receive any recommendations and/or feedback which did not meet your needs or your learners' needs?

- How targeted were the recommendations you received?
  - ☐ Very Useful
  - ☐ Useful
  - ☐ Neutral
  - ☐ Not Very Useful
  - ☐ Not Useful at All

  Any comments?

- How useful was the feedback you received? Did it help you monitor your learners' performance?
  - ☐ Significantly
  - ☐ Moderately
  - ☐ Neutral
  - ☐ Slightly
  - ☐ Not at All

- Were you able to identify any specific learning patterns or trends using the analytics? Did the augMENTOR solution help you to identify student learning gaps?
  - ☐ Yes (Please specify)
  - ☐ No

Request Register

The Request Register will be a Google sheet available in the project's common repository. The document will include columns with the following titles:

Column A: ID - R#
Column B: Request Description - open text description
Column C: Reported by - Pilot representative #1/#2/#3/#4
Column D: Identified by - Educator/Learner/Pilot Representative/Expert partner/Other
Column E: Date of Request - DD/MM/YYYY
Column F: Priority - Low/Medium/High
Column G: Assigned to - LMS technical expert/augMENTOR solution technical expert
Pedagogical framework expert/Creative pedagogy expert
Column H: Progress - (Progress bar that fills in automatically based on columns I-N
Column I: Request related to - Pedagogical framework/
Creative pedagogy/augMENTOR solution/ Moodle
Column J: Communicated to expert - checkbox
Column K: Being processed by expert - checkbox
Column L: Response send back to pilot representative - checkbox
Column M: Response send back to educator/learner - checkbox
Column N: Request is resolved - checkbox
Column O: Status - Inactive/ In progress/Frozen/Solved/ Cannot be addressed
Column P: Completion Date - DD/MM/YYYY
Column Q: Experts' response - Open text description

Funded by the European Union

Course dashboard to organise preparation for pilot sessions

The Course dashboard to organise preparation for pilot sessions will be a Google sheet in the project's common repository. The document will include the following columns:

Column A: Week

Column B: Learning Modules/ Topics to be covered - open text description

Column C: Learning Objectives - open text description

Column D: Emphasis - open text description

Column E: Software/ External Resources - open text description

Column F: LMS Material/Activities - open text description

Column G: Competencies - open text description

Column H: Supplementary Material - open text description

Column I: Workshop Assignments - open text description

Column J: Home Assignments - open text description

Column K: Problems during the online workshop and during the rest of the week - open text description

Column L: Changes to be made in the course - open text description

Column M: Notes - open text description

Funded by the European Union

ANNEX 2 - Preliminary tools for the evaluation of the pilot implementation

Educators' Questionnaire on Course Experience

General experience with online courses

1. Have you taught any online courses in the past 5 years? (Yes/No)
2. How often do you teach online educational courses? (Frequently/Sometimes/Rarely/Never)
3. Did any of these courses offer an AI assistant similar to the augMENTOR solution?
4. How would you rate your experience with AI tools in education? (Scale of 1-5)

Use of augMENTOR solution

5. Did you use the recommendations of the augMENTOR solution during the online course? (Yes/No)
6. How frequently did you interact with the augMENTOR solution (Frequently/Sometimes/Rarely/Never)
7. How often did you use the augMENTOR solution to request for additional learning materials for your learners? (Frequently/Sometimes/Rarely/Never)
8. How often did you use the augMENTOR solution to guide you through the course material? (Frequently/Sometimes/Rarely/Never)

Impact on teaching experience

9. How helpful were these recommendations in supporting your role as an educator? (Scale of 1-5)

Please rate the following statements based on your experience with augMENTOR solution:

10. The augMENTOR solution helped personalise my learners' educational pathways. (Strongly Agree/Agree/Neutral/Disagree/Strongly Disagree)
11. The recommended content was relevant to my learners' needs. (Strongly Agree/Agree/Neutral/Disagree/Strongly Disagree)
12. I found the augMENTOR solution useful in improving my delivery of course topics. (Strongly Agree/Agree/Neutral/Disagree/Strongly Disagree)
13. I found the feedback from the augMENTOR solution useful in monitoring my learners' performance and progress. (Strongly Agree/Agree/Neutral/Disagree/Strongly Disagree)

Funded by the European Union

Teaching outcomes

14. Rate your overall satisfaction with the augMENTOR solution (Feedback/recommendations) provided in this course. (Scale of 1-5)
15. To what extent did the augMENTOR solution feedback/recommendations help you improve your teaching outcomes? (Scale of 1-5)

Self-Adoption of the augMENTOR solution

16. To what extent did you rely on the augMENTOR solution for providing recommendations to your learners? (Scale of 1-5)
17. Would you recommend the augMENTOR solution to other teachers? (Yes/No)
18. How likely are you to continue using the augMENTOR solution in future courses? (Scale of 1-5)

Feedback

19. What did you find most beneficial about the augMENTOR solution?

Additional comments

20. Is there anything else you would like to share about your experience with the augMENTOR Solution in this online course?

Funded by
the European Union

Learners' Questionnaire on Course Experience

General experience with online courses

1. Have you taken any online courses in the past 5 years? (Yes/No)
2. How often do you participate in online educational courses? (Frequently/Sometimes/Rarely/Never)
3. What are your primary reasons for taking online courses?
4. Did any of the courses you participated in the past offer an AI assistant similar to the augMENTOR solution?
5. How would you rate your experience with AI tools in education? (Scale of 1-5)

augMENTOR solution usage

6. Did you use the recommendations of the augMENTOR solution during the online course? (Yes/No)
7. How frequently did you interact with augMENTOR solution (Frequently/Sometimes/Rarely/Never)
8. How often did you use the augMENTOR solution to request for additional learning materials? (Frequently/Sometimes/Rarely/Never)
9. How often did you use the augMENTOR solution to guide you through the course material? (Frequently/Sometimes/Rarely/Never)

Impact on learning experience

10. How helpful were the recommendations offered by the augMENTOR solution for upgrading your learning experience? (Scale of 1-5)

Please rate the following statements based on your experience with augMENTOR solution:

11. The augMENTOR solution helped personalise my learning experience. (Strongly Agree/Agree/Neutral/Disagree/Strongly Disagree)
12. The recommended content was relevant to my learning needs. (Strongly Agree/Agree/Neutral/Disagree/Strongly Disagree)
13. The augMENTOR solution enhanced my motivation to engage with course materials. (Strongly Agree/Agree/Neutral/Disagree/Strongly Disagree)
14. I found the augMENTOR solution useful in improving my understanding of course topics. (Strongly Agree/Agree/Neutral/Disagree/Strongly Disagree)
15. I found the feedback from the augMENTOR solution useful in monitoring my performance. (Strongly Agree/Agree/Neutral/Disagree/Strongly Disagree)

Funded by the European Union

Learning outcomes

16. Rate your overall satisfaction with the augMENTOR solution (Feedback/recommendations) provided in this course. (Scale of 1-5)
17. Did the augMENTOR solution make it easier for you to complete the course? (Yes/No)
18. To what extent did the augMENTOR solution feedback/recommendations help you improve your learning outcomes? (Scale of 1-5)

Feedback

19. What did you find most beneficial about the augMENTOR solution?

Additional comments

20. Is there anything else you would like to share about your experience with the augMENTOR solution in this online course?

Funded by the European Union

Parents' feedback questionnaire

1. To what extent do you think the course has increased your child's interest in environmental issues, particularly their understanding of climate change? (Scale of 1-5)
2. How engaged and motivated was your child during the course's activities? (Scale of 1-5)
3. How satisfied are you with the balance between in-person and online learning activities? (Scale of 1-5)
4. How responsive are the teachers to your questions and concerns about the course? (Scale of 1-5)
5. Do you have any suggestions for additional topics or activities that should be included in the course? (Open-ended)
6. Would you let your child participate in another course like this? (Yes/No)

Funded by the European Union

Focus groups script for learners

Overall experience

1. How would you describe your overall experience with the course?
2. What aspects of the course did you enjoy the most?
3. What aspects of the course did you find challenging or less enjoyable?
4. What activities and methods kept you most engaged?

LMS and augMENTOR solution

5. How would you describe your experience navigating and using the LMS?
6. What features of the LMS did you find most useful?
7. What features or functionalities of the augMENTOR solution did you find most beneficial or innovative?
8. How helpful were the augMENTOR solution's recommendations for your learning? Can you provide examples of how the augMENTOR solution helped you understand the material better?
9. How accurate and personalised did you find the recommendations?

Communication and support

10. How effective was the communication between educators and learners in addressing questions, providing feedback, and fostering discussion?
11. Did you feel you got enough help and support from your educators?
12. What additional support or resources would have been helpful?

Challenges and improvements

13. Did you encounter any challenges or technical issues? Were they addressed effectively and in a timely manner?
14. What suggestions do you have for improving the course in the future?
15. What improvements or additional features would you suggest for the augMENTOR solution's effectiveness?
16. How likely are you to enrol in another online course that uses the augMENTOR solution?

Funded by the European Union

Focus groups script for parents

Overall experience:

1. How would you describe your child's overall experience with the course?

Learning and development:

2. Do you believe the online course contributed to your child's learning and development? How?

Communication and support:

3. How would you rate the communication between educators and parents?
4. Did you feel your child was adequately supported throughout the online course?

Challenges and suggestions:

5. What were some challenges your child faced during the course, and what suggestions do you have for addressing them?

Funded by the European Union

Focus groups script for educators

Overall course experience:

1. How would you describe your overall experience teaching the course?
2. What aspects of the course were most successful?

LMS and augMENTOR solution

3. How would you describe your experience navigating and using the LMS?
4. What features of the LMS did you find most useful for delivering course content and managing student interactions?
5. How helpful were the augMENTOR solution's recommendations in supporting students' learning?
6. How accurate and personalised did you find the recommendations?

Student engagement

7. How engaged were the students throughout the course?
8. What strategies did you find most effective in maintaining student engagement?

Support

9. How well did the pilot experts assist with any issues that arose?

Communication and collaboration

10. Were there opportunities for collaboration and sharing best practices among educators?

Challenges and improvements

11. What were the biggest challenges you faced during the course?
12. What recommendations do you have for improving future iterations of the course?

Operational evaluation

13. Can you describe the overall experience of the implementation phase? How easy or difficult did you find the steps to follow during the implementation process?
14. What specific areas do you believe were lacking or incomplete?

4cs

15. How has augMENTOR contributed to the development of the 4Cs (Critical Thinking, Communication, Collaboration, and Creativity) in your students? Can you provide examples of activities that effectively fostered these competencies?
16. How do you monitor and evaluate the development of 4cs in your students using AugMENTOR? Which tools or features do you find most valuable for tracking progress?

Funded by the European Union