Didactic Toolkit/materials realized using augmented and virtual reality

DEL 3.4 - WP3

EACEA - Erasmus+ Capacity Building in VET, n 101092478 - V.I.R.TU.A.L.

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Foreword

This report outlines the refinement process for the Didactic Toolkit developed using augmented and virtual reality (AR/VR) technologies such as EON reality. The Toolkit, designed to enhance vocational education and training in the tourism and hospitality sectors, underwent an extensive piloting phase involving students, educators, and vocational trainers.

The focus of this report is to evaluate the feedback collected during the piloting phase and outline the subsequent improvements that will be implemented. The refinement process aims to address identified areas of improvement, with a particular emphasis on:

- Enhancing the usability of the Toolkit to ensure a seamless and intuitive user experience across diverse educational and professional contexts.

- Improving the degree of experience ability, leveraging AR/VR features to provide immersive, engaging, and effective learning environments.

The feedback received during piloting highlighted key strengths and areas requiring further development. Based on these insights, all necessary enhancements will be carefully designed and documented in this report to ensure that the Toolkit meets its intended goals and continues to evolve as a valuable educational resource.

This document serves as both a record of the piloting process and a roadmap for the ongoing improvement of the Toolkit, with the goal of maximizing its impact on teaching and learning outcomes.

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1. Introduction

1.1 Background and reasons

The Didactic Toolkit, developed using augmented and virtual reality (AR/VR) technologies, represents a pivotal step in modernizing vocational education. Designed to enhance the learning experience for students and improve training outcomes in the tourism and hospitality sectors, the Toolkit provides interactive, immersive, and practical simulations aligned with industry needs.

The piloting phase, conducted with students, educators, and vocational trainers, was instrumental in gathering feedback to evaluate the Toolkit's usability, engagement, and overall effectiveness. This feedback forms the foundation for the refinement process, ensuring the Toolkit meets its objectives of delivering high-quality educational experiences.

1.2 Objective of deliverable 3.4

This report focuses on Deliverable 3.4, which aims to document the improvements made to the Toolkit based on feedback collected during the piloting phase. The primary objectives of this refinement process are to:

- Address any challenges encountered during the piloting phase to ensure an intuitive and user-friendly experience for all stakeholders.

- Refine the immersive and interactive aspects of the Toolkit to better engage users and provide a deeper, more effective learning experience.

1.3 Scope of the report

The report outlines the feedback-driven refinement process for the Didactic Toolkit. Specifically, it:

- Details the feedback gathered during the piloting phase, highlighting areas for improvement.
- Provides an overview of supporting materials, such as AR/VR videos developed to align with Toolkit's objectives.
- Summarizes the next steps to ensure the Toolkit continues to evolve as an effective educational resource.

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2.Feedback from the piloting process

2.1 Overview of the piloting phase

The piloting phase of the Didactic Toolkit was conducted with the primary goal of assessing its usability. This phase involved active participation from students, educators, and vocational trainers from partner institutions. The piloting focused on testing the Toolkit's capabilities in delivering immersive and interactive learning experiences using AR/VR technologies.

During this phase:

- Students were trained on how to navigate and use the Toolkit effectively, allowing them to explore its various features.
- Educators provided feedback on the Toolkit's alignment with learning objectives and its ease of integration into teaching practices.

2.2 Quantitative and qualitative insights

Feedback was collected through surveys, interviews, and observation during the piloting sessions. Key insights include:

Quantitative Results:

- 85% of participants rated the Toolkit as "useful" or "very useful."
- 78% reported an increase in their engagement compared to traditional learning methods.

Qualitative Observations:

- Students described the Toolkit as “innovative” and “engaging,” with one stating, “It feels like learning while working in a real environment.”
- Educators emphasized the importance of refining the content to address varying skill levels and industry-specific needs.

2.3 Summary of feedback

The piloting phase provided a comprehensive understanding of Toolkit’s strengths and limitations. While the immersive and interactive features were widely praised, the feedback also underscored the importance of improving usability and expanding the range of learning scenarios. These insights served as the foundation for the refinement process.

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3.Development of the didactic toolkit using Eon Reality

3.1 Introduction to Eon reality

The Didactic Toolkit was developed using **Eon Reality**, a leading platform in augmented and virtual reality (AR/VR) technology. Eon Reality is recognized for its innovative solutions that enable the creation of immersive, interactive, and user-friendly training and educational materials. The platform provides tools for designing detailed simulations that closely mimic real-world scenarios, making it an ideal choice for vocational education.

3.2 Why Eon reality?

The decision to use Eon Reality was based on its ability to:

- **Support AR/VR Learning Experiences:** The platform offers advanced features for creating realistic simulations, enhancing learners' engagement and retention.
- **Enable User Interaction:** Eon Reality's intuitive tools allow users to actively engage with scenarios, fostering hands-on learning.
- **Ensure Accessibility:** Its compatibility across devices ensures the Toolkit can be accessed by learners and educators using various platforms.
- **Facilitate Rapid Development:** The platform's tools streamline the creation of content, enabling the development of high-quality materials within a reasonable timeframe.

3.3 Toolkit features developed with Eon reality

Eon Reality was instrumental in creating key components of the Didactic Toolkit:

1. **Immersive Scenarios**
    - AR/VR simulations were developed to reflect real-world tasks in tourism and hospitality, such as setting up dining spaces, arranging rooms, and maintaining hygiene standards.
    - Each scenario was designed to replicate industry-specific challenges, providing learners with practical experience.
2. **Interactive Modules**
    - Learners can interact with virtual environments, such as manipulating objects, solving problems, and making decisions.
    - These interactions enhance critical thinking and decision-making skills, preparing learners for professional roles.

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3. **Integration of Supporting Materials**

Two instructional videos were created using Eon Reality, providing visual guidance on:

- Catering and Table Service Setup: Demonstrating table arrangement and hygiene practices.
- Room Setup and Cleaning: Offering step-by-step housekeeping techniques.

4. **User-Friendly Interface**

- The platform's intuitive design ensures that both learners and educators can navigate the Toolkit with ease.
- Features such as progress tracking and real-time feedback are seamlessly integrated.

3.4 Benefits of using Eon reality for the toolkit

The use of Eon Reality has significantly enhanced the effectiveness of the Didactic Toolkit by:

- **Enhancing Engagement:** The immersive nature of AR/VR scenarios keeps learners actively involved in their training.
- **Improving Retention:** The interactive elements of the Toolkit ensure that learners retain information more effectively compared to traditional methods.
- **Providing Flexibility:** The Toolkit can be adapted to suit various learning needs and contexts, thanks to the platform's customizable features.
- **Supporting Educators:** The platform's tools enable educators to create and deliver content that aligns with learning objectives and professional standards.
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3.5 Future opportunities with Eon Reality

Building on the success of the Toolkit, future opportunities include:

- **Expansion of Scenarios:** Develop additional simulations covering advanced and specialized tasks in tourism and hospitality.
- **Integration with LMS Platforms:** Link Eon Reality content with learning management systems for centralized access and tracking.

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- **Cross-Sector Applications:** Explore the use of Eon Reality for vocational training in other industries, such as healthcare, manufacturing, and IT.

4. Supporting didactic materials

4.1 Alignment with Syllabuses

The development of the Didactic Toolkit has been closely guided by two key syllabuses designed to address specific vocational training needs in the tourism and hospitality sectors:

1. Preparation of Spaces and Environments for Catering and Table Service Setup:

This syllabus focuses on organizing and preparing dining spaces, setting up tables, and adhering to high standards of hygiene and aesthetics. It emphasizes practical skills such as table mise-en-place, banquet setups, and customer service etiquette.

2. Setting Up, Organizing, and Cleaning Rooms:

This syllabus provides learners with the skills to clean, sanitize, and organize hotel rooms, ensuring comfort and safety for guests. It includes techniques for bed-making, surface cleaning, and maintenance reporting, as well as adherence to hygiene protocols and safety standards.

These syllabuses ensured that Toolkit's content was relevant and aligned with real-world industry demands, forming the basis for the development of AR/VR scenarios and supporting materials.

4.2 Videos developed using Eon Reality

Two videos from the Eon Reality platform were generated to enhance the learning experience:

1. Video 1: Catering and Table Service Setup (https://share.eon-xr.com/lesson/173/951429)

Demonstrates practical skills for setting up tables and dining spaces, including:

- Arranging furniture and decorations to create an appealing ambiance.
- Following hygiene standards and customer service protocols.
- Preparing for various types of events such as banquets, buffets, and formal dinners.

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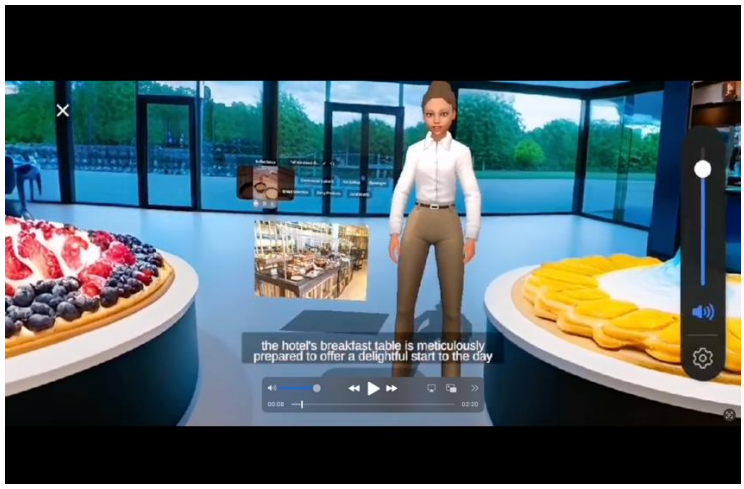

Figure 1 Screenshot from EON

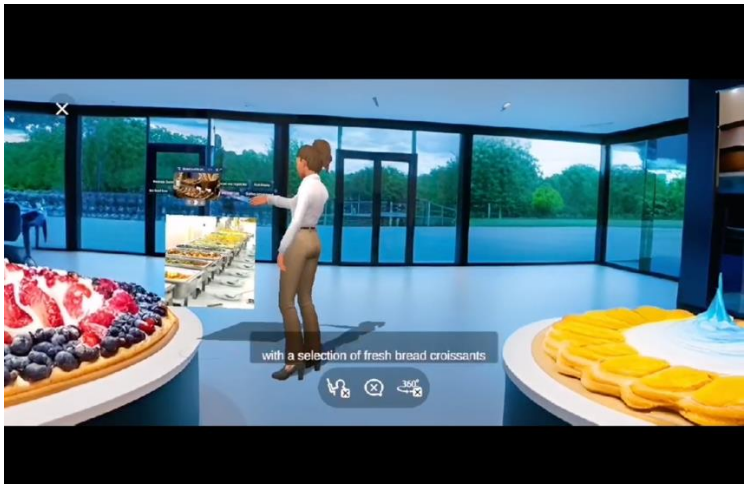

Figure 2 Screenshot from EON

2. Video 2: Room Setup and Cleaning Techniques (https://share.eon-xr.com/lesson/173/922374)

Provides a detailed walkthrough of housekeeping tasks, such as:

- Detailed steps for cleaning and organizing hotel rooms and bathrooms.

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- Use of appropriate tools, detergents, and methods to ensure cleanliness and hygiene.
- Techniques for making beds, replenishing amenities, and setting up a welcoming atmosphere for guests.
- Attention to guest privacy and handling of personal belongings.

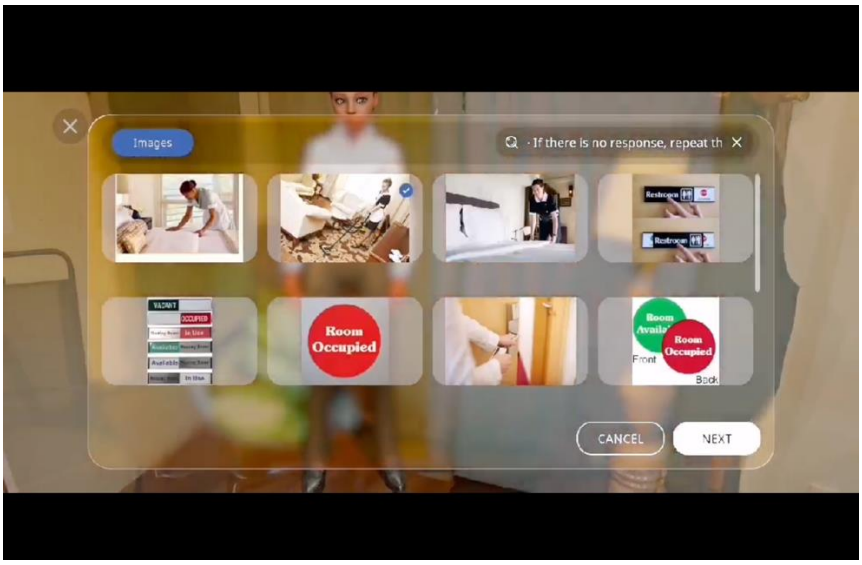

Figure 3: Screenshot from EON

4.3 Role of didactic materials in enhancing learning

The inclusion of these videos has significantly enhanced the Didactic Toolkit by providing a practical, visual dimension to the learning experience. Through detailed demonstrations, the videos bridge gaps in understanding, making complex tasks more accessible and easier to replicate. Learners can observe real-world applications of theoretical knowledge, gaining a clearer and more comprehensive understanding of vocational concepts.

Moreover, the videos add valuable context, helping trainees connect their classroom learning to industry practices. This integration of visual, auditory, and interactive elements ensures that the Toolkit supports a diverse range of learning styles, accommodating visual learners, auditory processors, and hands-on practitioners alike. By combining these elements, the videos make the learning process more engaging and effective, fostering a deeper and more practical understanding of the skills being taught.

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4.4 Feedback on supporting materials

Feedback from the piloting phase highlighted the effectiveness of the videos as supplementary learning tools:

- Students: Reported greater confidence in performing tasks after watching the videos.
- Educators: Praised the videos for their clarity and alignment with vocational objectives.
- Trainers: Recommended incorporating more videos to cover additional scenarios and advanced techniques.

4.5 Recommendations for future material development

To further enhance the Didactic Toolkit, several recommendations have been proposed to expand its functionality and effectiveness. One of the key suggestions is the development of additional videos that address advanced scenarios, such as managing unexpected challenges or delivering specialized services. These advanced materials would allow learners to explore more complex and nuanced aspects of vocational training, preparing them for real-world situations that require adaptability and problem-solving skills.

In addition, incorporating interactive quizzes and simulations is recommended to actively engage learners and test their understanding of the video content. These features would provide immediate feedback, reinforcing learning outcomes and ensuring that trainees can apply their knowledge effectively.

Lastly, the provision of downloadable guides and checklists would greatly enhance accessibility, supporting learners who may need offline resources for study and practice. These supplementary materials would serve as practical tools, allowing users to review essential information and stay organized while mastering their skills. Together, these enhancements would ensure that the Toolkit remains a versatile and comprehensive resource for vocational education

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