THE DIGICOMPASS COURSE: AN INNOVATIVE FLIPPED ADULT EDUCATION TRAINING COURSE

P. Mazohl[1], H. Makl[1], A. Yeratziotis[2], C. Tsouris[2], G.A. Papadopoulos[2]

[1]Europäische Bildungsinitiative (AUSTRIA)
[2]University of Cyprus (CYPRUS)

Abstract

The DigiComPass training course aims to improve digital literacy in line with the European Union's DigComp framework. Drawing on the findings of the Flipped Adult Education project ((Erasmus+ 2018-1-AT01-KA204-039224)), the course is structured into five independent modules and is based on the Flipped Learning 3.0 (FL3) framework. An innovative instructional design based on the FL3 ("Flipped Instructional Design FID"), developed specifically for this course, addresses the needs of adult learners across a wide age range, from 18 to seniors aged 65 and over.

Another key innovation of the DigiComPass project is the Digital Competencies Passport (DigiComPass), which is awarded to learners who meet the specified criteria across the five modules. This certification confirms the attainment of well-defined competences according to the Recognition Framework. The course is delivered through an Individual Learning Space on a Moodle platform developed by the SEIT Lab of the University of Cyprus.

Furthermore, the integration of multimedia-based microlearning and a self-assessment based "learning by assessment" approach introduces novel elements to the training in Adult Education. In addition, the use of Klippert's Method Change Approach provides varied and engaging learning content to develop learners' knowledge, skills and abilities. The use of diverse multimedia content and the inclusion of various case studies ensure practical, real-life and realistic learning outcomes.

This paper also presents initial feedback from adult learners who participated in the pilot training, highlighting the effectiveness and reception of the DigiComPass training course as well as the evaluation of the trainers' feedback.

Keywords: Flipped Learning 3.0, Adult Education, Digital Literacy, Microlearning, Multimedia.

1 INTRODUCTION

Digital competencies (DigComp) are essential for citizens today and in the future. In Europe, the average level of digital competence among well-educated citizens is approximately 56%, with countries such as Italy, Cyprus, Spain, and Greece scoring below this average, while Austria meets the average (DigComp Framework 2.0, p. 19) [11]. The COVID-19 pandemic has further emphasized the necessity of digital competencies across all demographics, regardless of age, living conditions, or situations.

The DigiComPass Project aims to create an environment that strengthens the digital competencies of European citizens. This project focuses on developing a recognition and course model for digital competencies, based on the European Union's DigComp 2.1 framework [11]. The project's objectives include the creation of a pedagogical framework grounded in Flipped Learning 3.0 [9], a quality enhancement framework for course creation and evaluation, and pilot modules covering key competencies as defined by the DigComp 2.1 framework. In addition, a recognition model is being developed, defining the curriculum, training environment, evaluation methods, and certification criteria for the course.

The implementation of this project involves several activities, such as project setup and branding, the development of work packages and deliverables, the execution of pilot courses, and dissemination efforts, including the creation of a DigiComPass Foundation. The expected outcomes include a Flipped Learning 3.0-based framework for teaching digital competences, a well-structured recognition model, and course materials that align with the DigComp 2.1 framework. Furthermore, the project aims to create an "Adult Education Package" under the DigiComPass banner, offering modular courses and resources as Open Educational Resources in multiple languages.

The DigiComPass project directly addresses the need to improve the availability of high-quality learning opportunities for adults by providing an innovative training concept that supports digital readiness, resilience, and capacity-building. The project also emphasizes the importance of digital skills in a post-

COVID world, where competencies like eGovernment services and digital signatures are increasingly vital. Through the development of pilot courses and the implementation of a new recognition model, the DigiComPass project offers a forward-thinking solution to the evolving digital needs of European citizens.

2 ABOUT THE PROJECT

This paper is part of the Erasmus+ Project "Digital Competences Recognition Framework for Adult Education" [2] (2022-1-CY01-KA220-ADU-000085965), which focuses on addressing the challenges of integrating AI into course creation, using the Flipped Learning 3.0 model [8]. The project is centered on developing a training course that enables adults to acquire essential digital competencies based on the European Union's DigComp Framework. In today's digital world, it is vital for adults to possess digital skills for lifelong learning, personal development, and employability.

The DigiComPass training course targets five key areas of digital competence as outlined by DigComp. The course creation process follows the principles of Flipped Learning 3.0, a methodology pioneered by John Bergmann and Aaron Sams [3]. Originally developed to enhance active learning by shifting lectures to homework and focusing on practical tasks during class, Flipped Learning has evolved into a global educational movement. The Flipped Learning 3.0 Global Standards [9], adopted by institutions like Harvard and Stanford, highlight best practices across different educational contexts.

While Flipped Learning has been widely researched and implemented in higher and school education, its application in adult education remains underexplored. This project seeks to fill that gap by bringing Flipped Learning 3.0 and AI-driven course creation into the adult education space, helping adults develop digital skills that are crucial in today's society.

3 METHODOLOGY

The methodology of the DigiComPass training course involved the development of a Flipped Instructional Design (FID) approach [10], a novel framework tailored specifically for adult learners. This process included the creation of the course structure, the development of content, and a rigorous peer review system to ensure quality and consistency. Feedback was provided both by subject matter experts and content developers, facilitating an iterative improvement process. The overarching goal was to develop a common approach to Flipped Learning 3.0 for adult education [12], aligned with the European Union's Digital Competence Framework for Citizens (DigComp).

The DigComp framework serves as the foundation for the course structure, offering a comprehensive guide to what it means to be digitally competent. The framework outlines five key areas of digital competence that are crucial for individuals to effectively navigate the digital world:

1. **Information and data literacy**: The ability to find, evaluate, and use information effectively.
2. **Communication and collaboration**: The ability to communicate and collaborate efficiently in digital environments.
3. **Content creation and curation**: The ability to generate, edit, and manage digital content.
4. **Safety and security**: The ability to use digital technologies safely and securely, including data protection.
5. **Problem-solving and critical thinking**: The capacity to use digital tools to solve problems and think critically.

The DigiComPass training course is designed around these five key areas, with each module focusing on one of the competences outlined in the DigComp framework. This modular structure ensures that learners can develop a well-rounded skill set, regardless of their prior knowledge.

The knowledge-based content of the course is delivered through the **Moodle platform**, developed by the SEIT Lab at the University of Cyprus. Moodle serves as the **Individual Learning Space**, where learners engage with multimedia-based and interactive training content. This content is tailored to provide flexibility and cater to the varying needs of adult learners, including a wide age range from 18 to 65+. The inclusion of multimedia elements enhances engagement and promotes better retention of knowledge. The implementation of multimedia-based content, structured as microlearning [5] learning items, enable optimized learning outcomes for adult learners [6].

The **group learning space** complements the individual space by fostering collaboration and peer learning, which is critical in building digital communication and teamwork skills. The use of Klippert's

Method Change Approach [4] further diversifies the learning experience, offering learners varied and dynamic content that caters to different learning styles.

A central innovation of the course is its **"Learning by Assessment" strategy**. This approach integrates self-assessment tools within the learning process, allowing learners to continuously evaluate their progress. By engaging in self-assessment, learners are encouraged to take ownership of their learning journey, fostering a deeper understanding of the material [7]. This method is particularly effective in adult education, where learners benefit from having a clear sense of their own development.

Additionally, learners who complete all five modules and demonstrate proficiency in the key competencies are awarded the **Digital Competencies Passport (DigiComPass)**. This certification serves as a formal recognition of their skills, validated through a defined set of criteria based on the Recognition Framework. The DigiComPass ensures that learners not only complete the course but also meet the European Union's standards for digital literacy.

4 RESULTS

In the first pilot testing of the DigiComPass course, conducted with a small sample (n=8) of adult learners, the results indicated a high level of acceptance for the platform. Participants responded positively to the Individual Learning Space provided through the Moodle platform. They particularly appreciated the microlearning-based approach, which utilized extensive multimedia content, such as videos, interactive activities, and case studies. The flexible and engaging format catered to the diverse needs of learners, allowing them to progress at their own pace while remaining actively involved in the learning process. This multimedia-driven approach was seen as effective in improving both engagement and retention of knowledge among learners.

For collecting feedback, a survey using a five-level Likert scale, was used. In this paper we focus on the content feedback. The feedback survey focused on the platform itself, the delivered content, subjective learning outcomes, the completeness of topic coverage by the learning content, and personal feedback.

4.1 Specific measures for the attractive presentation of content

The multimedia-based content for the DigiComPass course was developed using a combination of Backward Design principles and Artificial Intelligence tools [8]. This approach ensured that the content was goal-oriented, with learning outcomes guiding the development process. A variety of multimedia tools were employed to create engaging and interactive training materials. Key tools included the H5P framework [13] for interactive content, CANVA [14] for video and interactive presentations, Adobe Premiere for video editing, and Audacity for audio production.

The focus was on creating interactive videos, presentations with embedded self-evaluation items, and case studies to enhance learner engagement. Additionally, podcasts were produced to provide an alternative, flexible learning format. This diverse range of multimedia content aimed to improve the overall learning experience and promote knowledge retention among adult learners.

4.2 Specific statements from learners to “Quality and Appearance of Multimedia and Interactive Content”

The way in which the content was prepared and structured. Here, as an example, is part 2 of the survey with the first feedback analysis.

Table 1: Questions dealing with the content.

Statement	*1*	*2*	*3*	*4*	*5*
The multimedia content, such as (interactive) videos, presentations, and interactive elements, was of good quality.	O	O	O	O	O
The interactive content was engaging and promoted my involvement.	O	O	O	O	O
The use of multimedia enhanced my understanding of the course content.	O	O	O	O	O
The case studies were practical and well-designed.	O	O	O	O	O
The graphic design of the learning content was appealing and supported learning.	O	O	O	O	O

There were the values 4 and 5 only given by the participants.

4.3 Specific feedback from the trainers

In the DigiComPass course, trainers played a critical role in introducing and explaining the new learning approach, which is based on the Flipped Learning 3.0 framework [3]. Given the innovative nature of this method, it required extensive explanation to ensure learners understood how to engage with the course content effectively. A key component of the training process was to guide learners through accessing the platform and demonstrate how to navigate and use the various multimedia content formats. Practicing this was essential for learners to become comfortable with the tools and resources.

Since most participants had low levels of digital competence, trainers needed to dedicate significant time to explaining technical and digital aspects carefully. Providing clear, step-by-step guidance on platform navigation, multimedia content interaction, and troubleshooting was crucial. Technical support was also made readily available to assist learners throughout the course, ensuring they could focus on the content without being hindered by technical difficulties.

Feedback from learners highlighted a strong appreciation for the multimedia-based content, which made learning more engaging. Moreover, the microlearning approach, with its "small pieces of learning content," was particularly well-received. This structure allowed learners to absorb information in manageable segments, making the learning process more flexible and suited to their needs.

Trainers were supported by a specific guide, the “Trainer’s Handbook” – one of the results of the project.

5 DISCUSSION

The DigiComPass project highlights the crucial need to enhance digital competencies across Europe, especially as digital technologies rapidly evolve. The feedback gathered from learners and trainers during the pilot testing of the DigiComPass course offers valuable insights into the course's effectiveness and potential for broader application.

5.1 Learners' Feedback

The learner feedback revealed a high level of acceptance and appreciation for the course's structure, particularly for the microlearning approach, which breaks content into smaller, more manageable learning units. Learners found the multimedia-based content engaging and noted that it significantly improved their understanding and retention of the material. The use of interactive videos, case studies, and presentations with embedded self-assessment elements contributed to a more dynamic learning experience. The modular format also allowed learners to progress at their own pace, catering to different levels of digital competency.

Despite the positive reception, a recurring theme in the feedback was the importance of technical support. Many learners entered the course with low levels of digital literacy, making it necessary for trainers to provide thorough explanations on how to navigate the platform and use the various digital tools. This points to the need for ongoing support structures within the course to ensure that learners, particularly those with limited prior experience, can engage fully without being overwhelmed by technical challenges.

5.2 Trainers' Feedback

Trainers also played a pivotal role in the course's success, as they had to explain the Flipped Learning 3.0 approach in detail and guide learners through the digital tools and content formats as well as to implement the Group Learning Space appropriately. Feedback from trainers emphasized the necessity of providing comprehensive technical and pedagogical support, especially for learners with low digital skills. The "Trainer’s Handbook," developed as part of the project, was a key resource in this regard, offering structured guidance on implementing the flipped learning model and supporting learners.

However, trainers also pointed out challenges in keeping the course content up to date. Given the fast-paced nature of technological advancements, especially in the realm of digital competencies, the content of the DigiComPass course may quickly become outdated. Continuous updates and revisions will be essential to ensure the course remains relevant and effective.

5.3 Potential for Broader Application

The success of the DigiComPass course in adult education suggests that microlearning and multimedia-based approaches could be effectively transferred to other fields, including school education. The modular structure and interactive content formats could be adapted to younger learners, helping them develop critical digital skills from an early age. Additionally, the integration of AI tools in content creation, as demonstrated in this project, offers a scalable solution for educational institutions aiming to provide high-quality, engaging digital literacy courses.

5.4 Future Directions and Network Building

Looking ahead, there is a strong potential to build a European network of trainers and organizations interested in the DigiComPass training course. For this reason, a European association was founded and is open for new members from European countries. This network will facilitate the sharing of resources, best practices, and updates to keep the course content current with the latest developments in digital technology. By establishing such a network, the DigiComPass project plays a vital role in promoting digital competency education across Europe, ensuring that adults are equipped with the necessary skills to thrive in an increasingly digital world.

6 CONCLUSIONS

In conclusion, the DigiComPass project has made significant strides in addressing the digital competency gap among adults, offering a timely solution to the increasing need for digital literacy in a post-pandemic world. By integrating Flipped Learning 3.0, microlearning, and multimedia content, the course provides an innovative and flexible learning environment that caters to the diverse needs of adult learners. The modular structure, combined with interactive and multimedia-rich content, enables learners to engage with complex digital concepts in manageable segments, improving both engagement and retention.

The project's success in the pilot phase has highlighted the importance of ongoing technical support and the need for trainers to play an active role in guiding learners through the digital tools and content formats. The provision of resources, such as the "Trainer’s Handbook," has been instrumental in supporting trainers, ensuring consistency and quality in the course delivery.

However, to ensure the long-term success of the DigiComPass course, several key factors must be addressed. Firstly, continuous updates to the content will be essential, particularly as digital technologies evolve at a rapid pace. Keeping the course relevant will require ongoing revisions and the inclusion of the latest tools and trends in digital competencies. Secondly, there is considerable potential for expanding the course’s applications, particularly in school education, where similar microlearning and interactive content formats could be adapted for younger learners.

Additionally, the project aims to create a European network for trainers and organizations interested in the DigiComPass course, fostering collaboration and knowledge-sharing. This network could play a crucial role in maintaining the course’s relevance, promoting best practices, and supporting the continuous improvement of digital competency education across Europe.

Ultimately, the DigiComPass project not only addresses the immediate needs of adult learners but also lays the foundation for scalable, adaptable digital literacy training in a rapidly changing digital landscape. By focusing on the development of digital skills that are crucial for both personal and professional growth, the project contributes to the broader goal of creating a digitally competent and resilient European citizenry.

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